Robo Sapiens

ENGINEERING NOTEBOOK

Part 1: Non-Technical

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II. TEAM SECTION

About RoboSapiens

Team overview

Mission

Our mission as a team is to learn **science, engineering** and **marketing** principles whilst participating in the FIRST robotics program and building a strong, reliable team. Moreover, we would like to create friendships with the other teams while also mentoring two FLL teams (Robosapiens Junior and Zebots). One of our ideals is also promoting gender equality in the STEAM fields.

Date Robo Sapiens was born: Our team was founded in September 2016

Team Members:

Daniel Peter	Gabriel Stanciu	Alexandru Miclea
Teodor Curiman	Alexandra Danilov	Adrian Campean
Mihnea Velcea	Octavian Dragomir	Cristian Timandi
Iulia Nae	Irina Cerghilan	Alexandru Enache
Costina Cone	Miruna Negoitescu	Adina Bulai

Volunteers:

Razvan Virna	Alexandru Postu	Alexandra Pom...
Briana Prejoianu	Ada Ali	Filip Balasi
Izabela Tache	Alexandra Zaman	Rares Bratu
Matei Greceanu	Sabo Denisa	Irina Balan
Cristian Romeghe	Sparchez Alexandra	Laura Neacsu

Location

Our workshop@ ''Spiru Haret'' National College, Bucharest, Romania

Our FIRST Journey

2016-2017 Season

- **Highlights**
  - o Demo at '' Tiriac Auto Collections''
  - o FTC Promo Videos
  - o Hub visits
  - o Our first competition
- **Awards** :

2017-2018 Season

- **Highlights**
  - o ABSL presentation
  - o Demo at the International School of Bucharest
  - o Visiting the kids at the Saint Sofia center
  - o The ''Vorbeste Lumea'' Talk Show on PROTV
  - o Demo at the ''Gheorghe Lazar'' National College
  - o Fundraising spring fair
  - o The competition
- **Awards** :
  - o We finished 9th place out of 94 teams
  - o We won the 3rd Motivate Award
  - o We won the Finalist Alliance Award

2018-2019 Season

- **Highlights**
  - o eRobo Camp
  - o Bucharest Science Week
  - o Codecamp
  - o Hack to the Future

- o Charity Christmas Event
- o Official Bucharest Demo
- o All the STEM Ladies
- o Robo Sapiens Turning Green
- o Mentoring the FLL Team
- o Bucharest Qualifiers
- **Awards** :
  - o Think Award 1st Place
  - o We finished on the 5th place out of 43

2019-2020 Season

- **Highlights**
  - o Recruiting 2 new mentors
  - o Adopting the Agile Approach
  - o Creating an ONG to support us
  - o The first Demo organized by us
  - o Mentoring 2 FLL Teams
  - o All the STEAM Ladies 2
  - o Bonding Friday
  - o Charity Christmas Event
  - o Fundraising Fairs

When we started back in 2016 we were quite unprepared, as FTC was such a new thing in Romania. Luckily for us, our mentors helped us significantly along the way and we embarked on this journey together. Our performance in the first season was pretty good considering we were at the beginning and we finished up on the 14th place out of 44 teams.

The second time around, right from the beginning we participated in many more activities, all of which were extremely eye-opening for us. Some highlights include our participation in numerous demonstrative matches, the regional championship and the visit to Saint Sofia center for children. Moreover, the second season marked the start of the ''Robo Sapiens Junior'' FLL team, which we mentor. We also managed to get organized, despite our biggest problem, which was time management. In the end, after many days and nights' work, we ended up in 9th place out of 94 teams and we won the 3rd place of the ''Motivate'' award and the '' Finalist Alliance Award''.

The ''Rover Ruckus'' season started off pretty well as we participated in even more events than in the previous year. Some examples include various demonstrative matches, hackathons, camps and different interviews. Moreover, we organised ''All the STEM Ladies'', an event meant to inspire young girls to follow a career in any technical domain. However, our time management was a bit off and we finished the robot with little time before the competition, this thing affecting our further performance. We managed to finish 46th out of 218 teams.

This season we strive to develop as many abilities as possible whilst also learning new things about ourselves and the world around us. Moreover, we can't wait to meet with our friends from the other teams!

Recruiting
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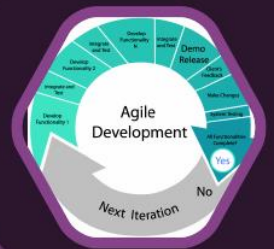
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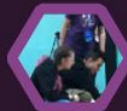
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Team name, logo and motto

Team name

We came up with the ''Robo Sapiens'' name during our first meeting as a team, way back in 2016. The idea behind it was to showcase the relationship between people and technology and how it should evolve constantly and create an environment prone to evolution.

Team Logo

The main idea was to perpetuate our passion for technology in general. Why the eye? Well, we figured that it is the organ that has had the fastest evolution in the shortest period of time, and we hope to do the same. Moreover, it is the symbol of the knowledge we have acquired in a multitude of fields. Also, it is representative for our team , on the one hand, because of the technical elements, on the other hand, because of the more human ones, such as the fact that, as the eye is part of a body, of something bigger, so is every one of us a little part of a team.

Motto : ''Think as one, evolve as one''

Our motto best describes how united and tightly-knit we are as a team, evolving constantly. The progress of one individual cannot be compared to the progress of a whole team, living every experience to the most, whether it be bad or good. We have worked on creating a safe environment, prone to brainstorming and sharing ideas with all the team members, ideas that are then discussed, so as no one feels left out.

Our workshop

Our workshop has become almost like a second home to us along the years and we are working on creating an environment that encourages productivity. This year we managed to equip it with one new laptop, a bench drill, stationary saw, peripheral devices, a new board and a 3D printer. Moreover, we created the food corner, a little space in the workshop where we can relax and eat while we take a break from work. We just placed a few tables in a corner and a microwave, a toaster and a coffee machine. There, we have tea, coffee, snacks, basically everything we need in order to survive a full day of work!

Team members/mentors/coach

Our team is structured in four departments: Building, Marketing, CAD and Programming. We also have Daniel, our team captain, who keeps an eye on all four departments in terms of organizing and fulfilling tasks, while also working on the robot. Of course, we have the help of our mentors, Razvan and Liliana and, of course, our coach and beloved physics teacher, Petronia Dumitrescu.

All in all, our team runs pretty smoothly and all the work and time we dedicated to this project helped us become close to a family, always relying on each other for anything we need.

Team members

Daniel Peter (a.k.a Prep) – Team Captain

I'm Daniel, I'm 17 years old and I am this year's team leader. My responsibilities range from facilitating communication and managing conflicts to helping out where needed. My interests, besides robotics, include pen-testing & network administration, game development and swimming.

I joined Robo-Sapiens 3 years ago to meet new people with the same interests as me and what I found was a captivating environment in which I can learn and express myself freely.

This year I experienced the greatest learning curve: not only did I acquire new technical knowledge, but I also learned a lot about managing a team, soft skills and project management.

Motto: ''Collective madness is called sanity.''

Teodor Curiman (a.k.a Teo/Curi) – Building Department

My name is Curiman Teodor, I am a 16 years old student in 11th grade and a member of the Building Department. From a young age I liked to tinker with old things that were lying around in my dad's garage. I joined FTC because my brother took me with him when I was eleven to the nationals, and I saw how awesome the community is. It was fascinating so when I grew up I joined Robo-Sapiens. This year I learned that I can't make a robot on my own and that the most important thing in life, the key even, is teamwork.

Motto : ''Only I can change my life. No one else can do it for me.''

Mihnea Velcea – CAD Department

Hello! My name is Mihnea Velcea , I'm a 15 y/o freshman of the CAD Department. I like basketball and tech stuff.

I joined Robo Sapiens because I wanted to better understand the world of robotics (and frankly it's one of the reasons I am at this high school) plus I knew there were some amazing people there I could get along with very well.

This year in FTC I learned and improved many things such as CAD and general knowledge of the robotics world.

Motto: ''Impossible is just a longer version of possible".

Iulia Nae – Marketing Department

My name is Iulia Nae, I am 17 years old and a member of the Marketing Department. My leisure activities include spending time with my friends, practicing aikido and trying out new things. I joined the robotics team because I wanted to meet new people and discover what exactly I want to do in the future.

Ever since I joined the team I learned that teamwork is a key factor in reaching a goal and that with patience and perseverance you can achieve everything you set out to do.

Motto: ''Trust the timing of your life.''

Costina Cone – Marketing Department

Hi! I am Costina Cone and I am 17 years old. I am a member of the Marketing Department and I really enjoy what I am doing in order to help the team. I joined the team two years ago when I was just a freshman and I have never lost my excitement. In my leisure time, I enjoy hanging out, creating new friends, reading and writing.

FTC brought me this year a couple of lessons I won't forget. Being part of a team and learning from each other every time we work together is something that can't compare to anything else. Communication is the most important factor in evolving and reaching our goals.

Motto: "Life is either a daring adventure or nothing at all." - Helen Keller

Gabriel Stanciu (a.k.a Gabi) – Building Department

Hi, my name is Gabriel Stanciu and I am part of the Building Department. I am 16 years old, in the 10th grade. In my free time I like sketching, reading and listening to music. I am very passionate about Hip Hop culture and recently I started a collection of rap albums in any format, mostly CDs and audio tapes. Last year I decided to join the highschool's robotics team, out of pure curiosity, because my father works in mechanics and it fascinated me. This year in FTC I developed my ability to work in a team.

Motto: ''I always understood that the pain was a necessity.Put the pressure on you until we exchange densities.''-Vinnie Paz

Alexandra Danilov (a.k.a Babi) – Building Department

My name is Alexandra Danilov, I am a 16-year-old in Junior year and a member of the Building Department. In my leisure time I love going to the movies, hanging out with my friends, playing board games together, sharing stories and laughing. The reason I joined Robo Sapiens was so I could try something new, experience working on a team in a technical field. It turns out I love robotics and engineering and I would like to continue studying these after finishing highschool. This FTC season I learned how much a team depends on one's work and how important it is to communicate, respect your tasks and do them in time. A good team is definitely based on trust, hardwork and most importantly, communication.

Motto: ''If no one comes from the future to stop you from doing it, then how bad of a decision can it really be?''

Octavian Dragomir – Building Department

My name is Octavian Dragomir, I'm 18 years old and I take part in the building department. In my free time I enjoy jogging and I also have a passion for the cinematographic art.

I chose to be a part of the STEM world because of its advantages in the work field but mostly because of the knowledge I can obtain from it.

Motto: ''The greatest danger for most of us is not that our aim is too high and we miss it, but that it is too low and we reach it.''

Irina Cerghilan – CAD Department

Hello! My name is Irina Cerghilan, I'm 16 and I am a 10th year student in "Spiru Haret" National College and a member of the Design Department. I like to read, listen to music and hang out with my friends.

I joined Robo Sapiens because it has always been my dream to be a part of a robotics team and develop my knowledge of technology and robotics. This year in FTC I improved my CAD knowledge and I learned how to work as a team efficiently and cooperate with others to reach goals.

Motto: ''

Miruna Negoitescu – Programming Department

My name is Negoitescu Miruna and I am part of the Programming Department of our team. I mainly focus on tasks related to my department, but I try to branch out as often as I can in order to help other departments as well. Being 16 years old and in 10th grade, I am currently figuring out how I would like to shape my future, and robotics is playing a big part in that.

At the beginning of 9th grade, I wasn't very familiar with what actually went into robotics, but I was fascinated by the concept of it. The idea of arranging a couple of seemingly simple materials into a system that can complete complex tasks intrigued me - so I decided to join the team to learn about the practical part of robotics.

Overall, FTC has taught me many things and has greatly fueled my interest in all STEM sciences. But I think that this year in particular, thanks to FTC and working diligently in with a team, I have improved my communication, organisation and problem solving skills, all of which I hadn't had the chance to work on before.

Motto: '' Life doesn't have a meaning - you give it one.''

Alexandru Miclea – Programming Department

Hello. My name is Alexandru Miclea, I am 16 years old and I am part of the Programming Department.

I decided to join Robo Sapiens because I thought that it would be an interesting experience where I could learn to code better and get to know people who share the same interests as I do.

I didn't know at first that team values and cooperation would play such an important role, but as I embraced those values I realized that without them there would be no coordination between us, and therefore a lack of interest in the project.

I have been in this team for about two years, in which I have learned to understand my teammates better and organize myself so that I can be of most use.

Motto: ''If you want to go fast, go alone. If you want to go far, go with others. — African proverb''

Adrian Campean (a.k.a Adita) – Building Department

Hi! My name is Adrian Campean, I'm a 17 year old junior and I'm part of the Building Department. In my free time I enjoy reading, gaming and playing table tennis.

I joined Robo-Sapiens as I wanted to go out of my comfort zone and to learn things such as cooperation.

Being this year in a FTC team taught me the important values of a team and also how to manage my time better.

Motto: ''You may have to fight a battle more than once to win it.''

Cristian Timandi (a.k.a Timy) – CAD Department

Hi, my name is Cristian but everybody calls me by my nickname: Timy. I'm 16 years old and currently a sophomore, member of the CAD Department. One of the things I enjoy a lot is hanging outside with my friends doing things that include: going to the cinema, eating at new places, wandering in the city, biking in the park, trying new things. I see myself as a talkative person so as a result, I like having discussions. I love sports in general but my favourite would be tennis as I practiced 3 years and have watched matches ever since I was little. Another thing to add is that I'm very keen on travelling and trying out new experiences.

I joined Robo Sapiens last season because I've always liked science-related activities so the answer is simple. Plus, I wanted to try something new and see if I like it.

This season I've learned that communication is a key factor, helping each other and working alongside strengthens our bonds and relationships, being rational and honest makes you see from a different perspective, and making decisions that would benefit everyone is for the best.

Motto: " Opportunities don't happen. You create them. "— Chris Grosser

Alexandru Enache – Programming Department

My name is Alex Enache. I'm 18 and in the 12th grade at "Spiru Haret" National College. I'm part of the Programming Department of our team. I'm extremely passionate about informatics and wanted to try robotics as one of the various branches of programming. I was instantly attracted to the practical side of it, having been used to only work with data sets. Always facing new challenges and having to adapt really improves your problem solving skills, making it utterly fun.

Motto: "We are what we repeatedly do. Excellence, therefore, is not an act, but a habit" - Aristotle

Adina Bulai – Building Department

Hey! My name's Adina, I'm 17 and I'm part of the assembling department. I wanted to join the team in order to learn new things that would help me in the future. Besides that, I got to meet new lovely people that are always there to help you if needed.

At the moment I don't have any hobbies related to robotics but later I'm willing to work in biotechnology as it implies several of the topics I'm interested in (biology, chemistry, mechanics).

This year's adventure brought many challenges to me: I took part in the newbies' training, managed some other tasks that weren't related to my department and learned what being part of a team actually means. All these experiences helped me figure out what my strong points and flaws are, which lead to me substantially evolving as a human being and soon-to-be young adult.

Team Mentors

Liliana Peter – Non-technical Mentor

In my professional life I am an Agile Coach, passionate about working with teams of programmers and helping them grow and getting better at what they do.

During last FTC season, my son, Daniel, used to keep telling me about the challenges the team was facing up to the point where I got totally swept into FTC's and his own story. I deeply understood how complex their activity actually was and what it really meant: a second school after school, a school of a new type, where they learned true values and so many practical things that prepared them for their future professions, in a way that the regular, theoretical school could never do. Thus, at the end of the season it was only a formality to accept his proposal that I join them as a volunteer team coach (non-technical mentor) for this season.

Being around the team this season was an amazing and intense experience for me, for which I am so grateful. I have learned that agile processes that apply smoothly to teams of programmers don't work exactly the same with a robotics team, and also that working with teams of teenagers is so much different and much more impacting than working with teams of adults. As a coach for teenagers, you have a really tangible opportunity of influencing and even changing lives.

Motto: "Ever tried. Ever failed. No matter. Try again. Fail again. Fail better." – Samuel Bekett

Razvan Manole – Technical Mentor

I am a full stack developer specialized mostly in Microsoft technologies and even if my daily work is not related to robotics, I am very passionate of this domain.

I've heard about FTC and about the complexity of this competition from my colleague Liliana. I've realized very fast that this competition is nothing like the ones I used to go during my studies. I got the chance to know the team members, to see their needs and became a technical mentor.

I was amazed seeing that the team is facing the same issues like a real-life company; from drawing a product, developing it till selling it. I've learned that technologies have evolved a lot, that the robots that are made in this competition are very complex and I've played with different tools which I did not have the chance to play with until now. I am very pleased to see that teenagers are involved in such competitions which are forming and preparing them for the future. I still believe that our schools cannot teach them such practical skills.

Motto: "The future is the sum of the steps you take, including the small ones, ignored or laughed at." – Henri Coanda

Volunteers

Sparchez Alexandra

I'm 16 years old, in 10th grade and I'm a member of the Media Department. At first, I wanted to take part in the team because of the welcoming environment. Now I find my entertainment in helping others and writing about past events. I really think it's a fun way to spend time outside the classroom.

Fun Facts about the Team

1. *Octavian is the only member from our team who participated in the FTC program since it first started in 2016.*

Octavian, an important member from our team, is at the moment the person who guides us while making decisions and often helps us in difficult situations. He has a lot of experience and we are really grateful to have him in our team.

2. *We compliment each member on a special day of the week.*

Since we are all stressed during the weeks close to the event, we decided to have special days when we make compliments and we appreciate each other. It is very helpful for us to support each other through tough times.

3. *Nearly every member of the team has a nickname.*

As we are also really close and we are also friends beside working colleagues, a lot of people from our team have nicknames. For example, Daniel, our captain, is often called "Prep" as a nice abbreviation from his last name, Alexandra Danilov has a cute one ("Babi") and we actually adore them.

4. *The girls from our team really enjoy wearing earrings.*

We mean, really interesting earrings. Rubber ducks, penguins, small vinyl, soldiers, monkeys, these are just some of them.

5. *We have funny pictures with us in our workshop.*

Since the first year enrolled in this competition, we put a couple of photos on the walls in our workshop. We continued the tradition this year and they are really enjoyable and funny to look at.

Team activities

Bonding Friday

After every sprint ending, when we have the meetings, we established a tradition when we hang out together, creating strong friendships. The places vary, ranging from coffee shops, libraries, restaurants, parks and many more. This helped us a lot in solving communication problems especially the ones not related to robotics.

Unteatru (30.09.2019)

As another way of strengthening our bond and friendship, we decided to go to the theatre together, at '' O noapte furtunoasa'' play. Unteatru was strongly recommended by one of our members. After the entertaining show, we wandered around the nearest streets while talking about different subjects. It was a fun thing to do, mostly because of our common interests and hobbies.

Brașov Trip (24-26.01.2020)

After several months of working hard, we felt the need to organise a trip where, unfortunately, not all the team could come. Despite this, we really had fun ourselves, played several board games and cooked together. We took long walks and enjoyed the view of the mountains during winter.

Ploiești Trip (29.02-01.03.2020)

Because we went to the BraveBots & Info1Robotics demo in Ploiești (thanks for inviting us, it was really great), we decided to spend some time together an stay there overnight. We always split the costs even some of us came by car with our coach, not by train. We had lots of fun and we are looking forward to going on such trips again.

III. OUTREACH ACTIVITIES

FTC Outreach

The Parklake Event (off season)

June 1st

In order to promote robotics to the younger generation, we headed to the ParkLake Mall for a special Children's Day event.

We prepared the robot and many curious kids came to see it. We showed them how to use a joystick to control the robot's moves and their faces were filled with excitement when they were allowed to play a few minutes with the robot.

We told the parents about the First Tech Challenge and how robotics, as a shared passion, brought our team together and helps us work better and be more responsible. Some elder passers-by showed interest as well in our robot and we consider this a step ahead in our mission to promote RoboSapiens and robotics in general to as many people as possible, be they young or old.

Demo Quantum

We were invited to our first demonstrative matches this season organized by The International Computer High school. It was held at the International School of Bucharest and we arrived just in time. Our team started training right after the driver's meeting, asking for advice and making strategies for the future matches. Despite the fact that we worked a lot the weeks before this competition, we faced several problems related to the robot, overviewing the mistakes at the end of every game. We made multiple notes and discussed them after the demo, including technical problems and a lack of communication between us and other teams while discussing strategies in an alliance.

Best score:	Around 20 pts
Final result:	2nd pick in the Semi finalist alliance
Our strong points:	Autonomy mode worked well The ability of the collecting system to rotate in the horizontal plan allow us to collect the stones regardless of how the robot is placed Overall we presented ourselves much better than this time last year

Our weak points (to improve):	Technical:
	`    - sistemul de colectare (cu cele 2 clape care se deschid in lateral) nu ne ajuta atunci cand vrem sa plasam o piesa langa alta (adiacent): deschiderea clapei rastoarna piesa existenta`
	`    - sistemul de colectare se balangane foarte tare`

```
          - cu sistemul de colectare actual nu incapem sub
skybridge
          - echilibrare sasiu (plasare componente pe sasiu gen
baterie, etc)
          - la ultimul meci s-a blocat o roata pentru ca se
slabisera niste suruburi --> checklist cu lucrurile de
verificat inainte de fiecare meci
```

Driving:
```
- our drivers are insufficiently trained
```

Preparing to leave for the event:
```
          - checklist uri (magic box, punga verde, cutia plata +
checklist global)
          - cel putin 2 persoane vin la atelier dimineata pentru
a ne asigura ca luam tot
          - toti cei care isi anunta prezenta la un eveniment au
obligatia sa citeasca cu atentie mailurile si sa cunoasca
locatia evenimentului (cine organizeaza si care e)
```

Communication with the ally team:
```
          - intrebarile trebuie sa fie foarte specifice: in loc
de "aveti autonomie?" sa intrebam "ce anume faceti in
autonomie?", etc.
```

Our team wasn't fully satisfied with the result as we placed ourselves in the 24th position, but the positive side was that we were the second pick in the semifinalist alliance. This result made us more ambitious and, instead of making us feel bad, we felt that we had to make a change and to evolve. Therefore, we reflected on all observations from the demo and we came up with the following improvement actions:

Moreover, we were also invited by the Velocity team at their demonstrative matches in Braila and considered going on a trip there.

Overall, we would like to thank Quantum Robotics again for inviting us; it was a great opportunity for us to be there and we also thank to Imagine Robots and WhatsUp teams for picking us in the semi finalist alliance.

Demo Qube

On November 23rd, we were invited by Qube and Ignite teams to their demonstrative matches held at the Faculty of Automatics and Computer Science from "Politehnica" University of Bucharest. Our main mission in this event was to improve our results compared to the ones we had at the Quantum Demo.

In comparison to our previous experience, we didn't face serious problems related to the robot and our evolution in communication was proved in our matches results. Our team was more involved and ambitious. Our best results were the following:

Best Score:	56 points in a semi-final
Final Result:	First Pick in the Semi-Finalist Alliance
Our strong points:	- we doubled the number of points won - we got to be first pick in semifinals - we won our first match in semi-finals with 56 points - we communicated more efficiently between ourselves and with the other teams - we were overall more involved during the event (every member of the team took care of something)
Our weak points (to improve):	In Autonomy - pull the tray straight and park it in the corner - build a more solid and precise system to pull the tray - one wheel still got blocked in the final match, even if it had been fastened before the match - in the last match the robot didn't detect the line under the bridge, most probably because the wires were not tightly fastened under the robot and one of them interfered with the sensor. - the robot gets disconnected randomly (we suspect the quality of the smartphone plug)

We were proud of the fact that we even doubled the number of points won and this was a noticeable progress. Moreover, a member of each team from the CAD department participated in a contest organized by ECDL Romania and their task consisted in designing a trophy. Our team was so proud when we found out our representative, Mihnea, won the second prize: ECDL free courses. The only problem we faced was that we hadn't thought about the number of laptops we needed so we had to return to our workshop to bring some more.

Those demonstrative matches were really inspiring for us and we were all focused on what our tasks were in order to have these results. We also started analyzing the way it was organized so that it could help us for our own.

Neurobotix event

The event was organised by Neurobotix, one of the robotics teams of "Mihai Viteazul" National College. They asked us to join them in donating and sharing books, toys, etc. for people in need on the 17th of December as a Christmas initiative.

We placed a box in the ground floor hall of our college and asked everyone who wanted to contribute to bring their donations there. It was a real success, as we collected many things for charity. The Neurobotix team packed them one week before the fixed date and on the 17th of December, 3 members from of team went to help distribute the packs at a house for those in need from Bucharest's 5th sector.

It was a most fantastic initiative, and although we were only partners, we were really happy that we could help Neurobotix set an example for every robotics team: apart from investing in our interests, we should as well take a break sometimes and realize how lucky we are to be here, as a team, and bring a smile on the faces of those less fortunate!

Demo RoboSapiens

Brainstorming & The Idea

We first considered the idea of hosting a demo last year, but at that time we had neither the resources nor the initiative to start this project. This year, however, this idea was brought up during the events brainstorming session (). This meeting took place at the beginning of the year and, after that, it took us 2 months before we actually started breaking the idea down into tasks, during a sprint planning meeting ().

Event Plan

1. Finding a location
2. Contacting possible participating teams
3. Obtaining sponsors
4. Gathering volunteers
5. Logistics

   - Getting the required playing fields

   - Printing the badges

   - Setting up FTC Software

   - Preparing the event room

Finding a location

At first, we tried to obtain a suitable place in our high school because of several advantages: no space rent, proximity of the workshop, and the possibility of getting support from our mentors. Unfortunately, none of the rooms was big enough for 2 match fields, so we had to begin looking somewhere else for an appropriate space. Soon after, we found out about **School Nr. 71**, which had a designed room for different events and festivities, and we contacted the administration office in order to propose the idea. The headmaster was really open-minded and willing to help us, and, in the end, the demo took place there.

Contacting possible participating teams

As the decision to host demonstrative matches was made rather late, we only announced the teams 2 weeks before the actual event. The majority said they couldn't participate, some because they had other activities to attend to, such as Bionic Royals' demo held in Ramnicu Valcea. We originally

wanted to make it large-scale, but instead we settled with a few other teams, the only ones that were available at that point.

Obtaining sponsors

Usually, finding sponsors is one of the hardest tasks to accomplish, but this time, it worked out perfectly fine, even though it was a last-minute thing. We sent emails to numerous companies that made promotional materials and to some bakeries, in order to prepare a buffet for the teams. We were answered shortly after, managing to get support from both Everest Typography and Luca the Bagel Store, which were really happy to help us with this kind of thing.

Gathering volunteers

This was the easiest part of our planning plan as this year we had a lot of newbies in all of our departments. We made an Excel where they could sign their name and choose their job at the event, that is if they wanted to participate. Fortunately, they were really happy to help and be involved in such an activity, as this a great opportunity to develop essential skills for a future career.

Logistics

1. <u>Getting the required playing field.</u> This is the part where we had some difficulties. Even though we talked to various teams and they agreed to help, we soon realized that we had a problem with obtaining an official field. We had already talked with Qube, Ignite and Gamma to borrow their fields, but, as we discovered a few days before the event, they didn't have an official one. We then talked to a representative of Natie Prin Educatie, who announced to us that their field was still at Quantum, after they used it for their demonstrative matches. After hearing this, we spoke with the team and they happily helped us. We had a few problems transporting all the fields to the event location, as we had to carry them all through Bucharest, but, in the end, we managed.

2. <u>Printing the badges.</u> As we only obtained sponsors a week before the event, we were in a rush with all things regarding promotional materials. That being said, we hurried to send the designs for the badges, folders and stickers to the typography. Unfortunately, we didn't thoroughly check the documents we sent and, after picking them up, we realized they were missing certain elements, such as the Qube logo and the one from Luca The Bagel Store. Therefore, the afternoon before the event was spent sticking these 2 logos to our promotional materials, as we had no other way to solve this.

3. <u>Setting up FTC Software.</u> The FTC software was easy to install. A problem was raised when we tried to connect 2 field displays, from 2 different rooms to the main server. One of the displays was connected to a different network, and thus the local server hosted on the machine in the main event room was unreachable. We installed LogMeIn Hamachi on that display and we connected it to the main server via a VPN (a virtual private network). This solved the issue. We went with the referee-app topology so that we wouldn't have to manually introduce the score at the end of the match.

4. <u>Preparing the event room.</u> After our classes, almost all of the team went to School Nr. 71 to help arrange the place for the event the next day. We began with clearing up space, which mainly involved

moving numerous chairs and benches in other rooms. Then, we set up the fields, the official one in the main room, and the one designed for practice in a normal classroom, right down the hall. Meanwhile, some of us were connecting our laptops to the projector and the LCD Display the school offered us, in order to present the results to the matches the next day.

The day of the event

We all arrived at the school at about 8 a.m. to start preparations for the upcoming matches. After having a small meeting at the beginning to discuss the tasks each person had to do, we began checking the FTC software set the previous day. In the meantime, some of us wrote the badges (???) for the entire team and for the participating ones. There were a few problems with the team T-shirts, as after all the events we took part in, we misplaced them or mistook one size for another. We, fortunately, managed to exchange them between us and find suitable ones for every person. We also organized a small referee training before all the teams came, to make sure everyone knew exactly what they had to do. Meanwhile, some of us went to meet with the representative from Luca the Bagel Store to retrieve the food and arrange the buffet for the teams.

Soon after 10 a.m., the teams began to arrive and our pit administrators showed them the way to their designed rooms. At 11 o'clock, we started the matches. We got to the first place before getting outmatched by Info1Robotics and UnderConstruction in the finals, who finally won the competition. During this time, we got the chance to observe other robot builds and to work on communication with the allied teams.

Conclusions

Things we are proud of:

1. **We finally did it, despite all obstacles! The first FTC demo organized by US!**

2. **The coordination of our team**

3. **Finding sponsors**

4. **Our results at the matches**

Lessons learned

1. **Procrastination & Time Management Issues**

Resolution: Making a plan for the event, setting up deadlines and prioritizing tasks with plenty of time ahead.

2. **Lack of volunteer training**

Resolution: Make sure the volunteers receive sufficient documentation and are evaluated before being allowed to participate

3. **Insufficient promotion of the event**

Resolution: Making sure that there are no other events on the same day, as well as giving notice at least 3 weeks before.

4. **Missing an official playing field**

Resolution: Prioritize important assets. Make them a requirement for announcing the event (alongside obtaining a suitable hosting space, etc.).

5. **Miscommunication between team members**

Resolution: Decide on a clear protocol of communication before an event. Make your point concise and direct.

FLL Outreach

In C.N.S.H. there are two teams of middle schoolers which are attending at the FLL championship. They are coached by several volunteer members of Robo Sapiens.

The training fields of these little teams are in our robotics workshop.

Robo Sapiens Jr. was founded last year, right now taking part for the second time in the FLL. ZeBots, made up of 6th-grade pupils, established this season.

Apart from the structuring and the programming of the robot, the teams had to prepare the research projects. The themes were:

- controlling the traffic in a city of the future - ZeBots;
- building up an ecologic construction in Bucharest - Robo Sapiens Jr.

These two teams realized layouts where they presented their ideas. They showed off their projects in school and in the community, they realized different studies about the presented themes and they put some questionnaires about them into practice.

At the regionals, Robo Sapiens Jr. won the robotics trial, obtaining 1st place for the robot's performance. ZeBots won 7th place at the competition. However, they need to improve their activity and to be more performing until next year.

III-10

Community activities

Christmas movie day

BRAINSTORMING

We first considered organizing this event at the start of the school year, as an event for the students from our school. The same idea was taken into consideration last year, but, unfortunately, due to a lack of organization, we didn't have enough time to make it happen. In time, we decided to invite other teams and make it a charitable event, making this decision at one of the marketing meetings related to our goals in events.

EVENT PLAN

1. Designs for social media posts
2. Inviting teams in order to participate in our event
3. Finding a location
4. Obtaining sponsors

Our method of approaching was a little different than the one we usually adopt on most of our events and it was a serious lesson we learned afterward.

1. Designs for social media posts

We started by designing social media posts and also the poster for the event. It was important to make the event visible.

What we learned: We started with this step quite late in the process because we had to organize our demonstrative matches. We learned that having multiple events in a short period of time can be overwhelming and a little hard for us to manage to complete all the tasks until the deadline.

2. Inviting teams in order to participate in our event

As we decided after the meetings, our idea from the last season to invite teams was appropriate for this season. We created a Google Forms and sent it on Instagram to most of the teams from Bucharest so it can be accessible for them to arrive there.

What we learned: We sent the invitations just a few days before the event so the only team who was able to come was Clockworks team (Thanks a lot guys, you were really nice)

3. Finding a location

Our plans consisted of getting a classroom in our high school as it was easier to talk to our head-teacher. We had a problem with the schedule because of that, as we wanted to hold the event in The Change Hub which is a non-conformist type of classroom. So, we had to change the starting hour from 16:00 pm to 14:00 pm the day before the event. Fortunately, it had no effect on the event itself and all the participants were there after all.

What we learned: Finding the location should've been our first priority. We talked to our head-teacher one day before the event and, even though there were no big changes this time, it would have affected us a lot in the future if we continued following this approach.

4. Obtaining sponsors

As it was an event organized in the school, the budget was not so high. The only need was for pillows and blankets so the place could be welcoming and comfortable for everybody while watching a movie. One of the freshmen of the marketing department, Matei, accomplished this task by talking to a coffee shop nearby, Illy, which borrowed us everything we asked for the day of the event.

What we learned: It would have been better for us if we had an organized list of everything we needed, more exactly a list of supplies such as hot chocolate or popcorn. We could have searched for sponsors to help us with them instead of buying them from our budget.

THE DAY OF THE EVENT

The event started at 13:00 with a networking session. As expected, there were only two members from another team (Clockworks) and we didn't receive a lot of donations so the money was used to buy more popcorn and hot chocolate for us on that day. At 14:00 we started the movie "A Christmas knight". As a surprise, it turned out we were only girls in the room but we still had lots of fun. The activity ended at around 16:30 due to some signal problems at our laptop because the classroom was situated in the basement of our high school.

CONCLUSIONS

There were a lot of things we could've done differently. Our main problem was the lack of organization because of the fact we had a lot of activities in that period, and also our demonstrative matches. This was a big lesson for us to make a more detailed plan before starting an event, giving deadlines to each task. Despite these, we were proud of us making our ideas come into reality. We also connected as a team, talked about different subjects and it was very relaxing. The two participants from Clockworks had fun and we had the chance to make new friends and keep in touch for future activities.

What worked well	What didn't work so well	Learnings
-The idea was original - We had a cozy place to host the event - It connected us more as a team -It was challenging	-We announced the event quite late which led to few participants from other teams	-The announcements should be made public on social media earlier
	-We didn't make a detailed plan to follow through the whole process	- Tasks should be divided at least one month before the event for it to be successful
	- The charity process wasn't fulfilled	- If we want to make something charitable, we should find more ways to make people donate and get involved in society.

Color Talk – Street Art & Robotics Workshop

Robotics is not only about engineering and building a robot, but also about creativity and teamwork. That's why we were so excited about this event which we were invited to. Color Talk- Street Art & Robotics Workshop was hosted by BRD First Tech Challenge Romania and Romanian Robotics Team, in a partnership with Montage and it was held at "Politehnica '' University of Bucharest.

We all gathered there, members from multiple teams with a variety of interests, to create an art piece featuring the theme competition, Ocean Opportunities. We drew, painted and used a bunch of graffiti we never used before to make something incredible. Not only that our work will be presented at the FIRST Global Challenge in Dubai, but we also had a great chance to talk and make new friends at this event.

Our surprise was that, at the end of the event, there was a random picking for six winners to hold an interview for VICE Romania (see page IV-43). Two members of our team, Costina and Gabi, were nominated which made us feel really lucky and we hope to have more events like this soon.

All the STEAM ladies 2

Equal rights is a subject that has been intensively discussed in the last few years. This being said, we figured it was time we raised awareness regarding gender equality in the STEAM domains. As this was the second year we organised such an event, the preparations were easy to put in order.

We began by securing the date and space, as these are perhaps the most important aspects. After talking to the school administration, we agreed to hold the event in The Change Hub, a room designed especially for this kind of activity. Furthermore, we began searching for female speakers that activated in

science, technology, engineering, art or maths. This was the most difficult task of the event, as there are few people willing to talk in front of a big crowd. After a careful research, we found our speakers!

Three female activists agreed to participate in our event. Firstly, Liliana Peter, Agile Master at Metro System, accepted our invitation, and then convinced her colleague, Luminita Ichim, who is a Research & Development Director at Axway, to sustain our cause. Moreover, Laura Belc engaged in our event, coming to share her experience as a Creative Director at MRM//McCann.

The day of the event went really well, as we had planned in advance. However, we had some technical problems, such as a bad Internet connection. This was mainly because of the fact that The Change Hub is situated in the basement, and there is little to no signal. In spite of this fact, we managed to continue with the event and actually display the PowerPoint presentations the speakers had prepared for us. All in all, the event was successful and we do hope that we'll see the speakers again at future editions!

The Educational Fair (off season)

As the Annual Educational Fair organized between 14 and 17 May 2019 in Tineretului Park by Bucharest City Hall was quickly approaching, our head-teacher asked the team to come as well and bring the robot to the fair. She suggested that it would be a good way to promote our college by presenting our robot and encouraging others to join our robotics team.

We took turns, being constantly around 3 people at the stall. We allowed the children to play with the robot and spoke about FTC and what the robotics club means to us. By the end of the fair, there were hundreds of children who stopped at our stall and watched or even played with the robot.

The robot was quite the celebrity at the fair and it turns out that letting others play with something that otherwise would be labelled as 'fragile' and 'untouchable' was a very good approach.

IV. BUSINESS PLAN

Executive summary

Mission statement

> We prepare for a bright future in science, technology and engineering while inspiring others to do so, by passionately engaging in a hands-on, mentor-guided and life-changing experience in which we acquire both theoretical and practical hard skills, as well as precious soft skills.

Vision and goals statement

Team work makes the American dream work.

Team summary

RoboSapiens team was founded in 2016 by Mrs. Petronia Dumitrescu, teacher of Physics at the National College "Spiru Haret" from Bucharest. From the beginning till today, all team members have been students of this college and the team has activated in a space provided by the college. For 3 years, the team had a single mentor, Mrs. Dumitrescu. Today, we have 19 active team members, **X** rookies, **Y** volunteers and 3 mentors. All team members are from the National College "Spiru Haret", while the mentors now include Metro System Romania engineers and team coaches. One of the mentors is also a parent of one of the team members.

For more details, please refer to the Team Section II aboveII-II-2.

Our sponsors

RoboSapiens is currently sponsored by Gemini Solutions and IMake3D. Cultivating relationships with sponsors is an important aspect of RoboSapiens' agenda because part of their mission is to work with experts to both become prepared and to prepare others for the future.

Future plans

One of our main future goals is to improve on skills learning, safety and team policies. Therefore, we shall focus on increasing the number of mentors. We expect this to also contribute to the number of freshmen that will integrate the team.

We also plan to become one of the main players in the FIRST community of Bucharest, by organizing at least 2 demo events. For that to happen, one of the first things to do is to adjust our sponsorship strategy and improve on maintaining relationships with the sponsors.

Strategic planning process

SWOT analysis

After 2018-2019 season we assessed our strengths and weaknesses from the performance and experiences we had acquired, and we also defined some strategies based on that. Not all strategies were defined at that point, but many of them just came up naturally while starting to work for the current season.

STRENGTHS

Potential: High potential of learning, with lots of passion and motivation and high adaptability

Culture: Friendship and teamwork culture

Partnerships: Good relationships with other teams

WEAKNESSES

Skills: Lack of trained Mentors to provide critical skills training for our team members and rookies

Safety: Lack of safety standards

Organization: Lack of Focus and Time management skills

Support: Parents involvement and support

OPPORTUNITIES

Recruiting: We have a large base for students recruitment

Funding: setting up an ONG to facilitate fund rasing from a legal point of view

Resources: the highschool has a partnership with the local Town Hall that could support our team.

THREATS

Impact within the FTC community: not having an official field prevents us from organizing demo events

Readiness for the Competition: our robot might not be ready in time for the Regionals because of lack of funds or parts providers till late in the season

Support: Change in highschool's policies might endanger the facilities they currently provide

Strategies and implementation plan

This year we decided to address some of our weaknesses and pursue some of the opportunities. The table below shows these actions:

Area	Strategy	Action	Group responsible	Planned completion	Reference
Robot engineering	Develop a culture of experiments	Implement an approach based on prototyping and frequent learning from these prototypes	Team coach and the Team	October 2019	Technical Notebook, Page II-6
Project management	Better control risks associated with team's focus and time management weak skills	Implement an incremental and iterative approach (Agile framework)	Team coach and Team captain	October 2019	Page IV-21
Sustainability	Formalize recruitment and improve induction framework for new/prospective team members	Run a retrospective about the previous season's recruitment and integration plan and improve accordingly this year	Team captain	End of September 2019	Page IV-28
Organizational development	Foster an organic and healthy development of the team, by broadening team members skills	Create a T-shaped skills profile of the team and enable self-organizing abilities.	Team coach and Team captain	End of year 2019	Page IV-26
Community engagement and outreach	Increase involvement and support from parents and make ourselves more visible in more social medial channels	Recruit specialized mentors, have a more complex presence in social media, organize our first demo	Team captain, Media department	Q1 2020	Page IV-24

ROBO SAPIENS

Robot engineering strategies

Empirical process control

Empirical process control theory, or empiricism, asserts that **knowledge comes from experience** and **making decisions based on what is known**. Scrum employs an iterative, incremental approach to optimize predictability and control risk.

Three pillars uphold every implementation of empirical process control: transparency, inspection, and adaptation.

Transparency

Significant aspects of the process must be visible to those responsible for the outcome. Transparency requires those aspects be defined by a common standard so observers share a common understanding of what is being seen.

For example

• A common language referring to the process must be shared by all participants; and, • Those performing the work and those inspecting the resulting increment must share a common definition of "Done".

Inspection

Scrum users must frequently inspect Scrum artifacts and progress toward a Sprint Goal to detect undesirable variances. Their inspection should not be so frequent that inspection gets in the way of the work. Inspections are most beneficial when diligently performed by skilled inspectors at the point of work.

Adaptation

If an inspector determines that one or more aspects of a process deviate outside acceptable limits, and that the resulting product will be unacceptable, the process or the material being processed must be adjusted. An adjustment must be made as soon as possible to minimize further deviation.

Project management strategies

Agile approach

Based on the experience of last year, when we wasted a lot of opportunities for learning from our failures or mistakes and we also were permanently in a time crisis because of our inability to synchronize work between the departments, as of this year we decided to take an Agile approach to develop our robot.

The main reasons for this decision were that within Agile approaches (and especially Scrum):

- incremental and iterative solution development processes are promoted, based on leveraging the results of experiments (try → inspect → adapt)
- solutions evolve through the collaborative effort of one self-organizing and cross-functional team (instead of separate teams working in isolation)
- continuous improvement is one of the core principles
- rapid and flexible response to change is highly enabled

Iterative development - sprints

Concretely, our way of working changed by introducing "**sprints**". A sprint is a time-boxed cycle of work with the following characteristics:

- all time boxes have the same length - 2 weeks in our case
- it begins with a **planning session**, where the team (all the team members) plans the work for the starting sprint. We document the tasks on post-its on our team board (photo) and also in the journal.
- every other day during the sprint team meets for 15 minutes to **check on progress and share impediments**. We track the work by moving the corresponding post-its on the team board through the different stages (To Do, In Progress, On Hold/Blocked, Done)
- it ends with a brief **review** of the work accomplished during the sprint AND with a **retrospective** where we reflect on what went well during the sprint and what not, so that we can learn from failures and mistakes and incorporate the learnings into the next sprint's work. We document the outcomes of retrospectives in the Journal.

This iterative approach is based on the plan-do-check-act model, or the Deming cycle:
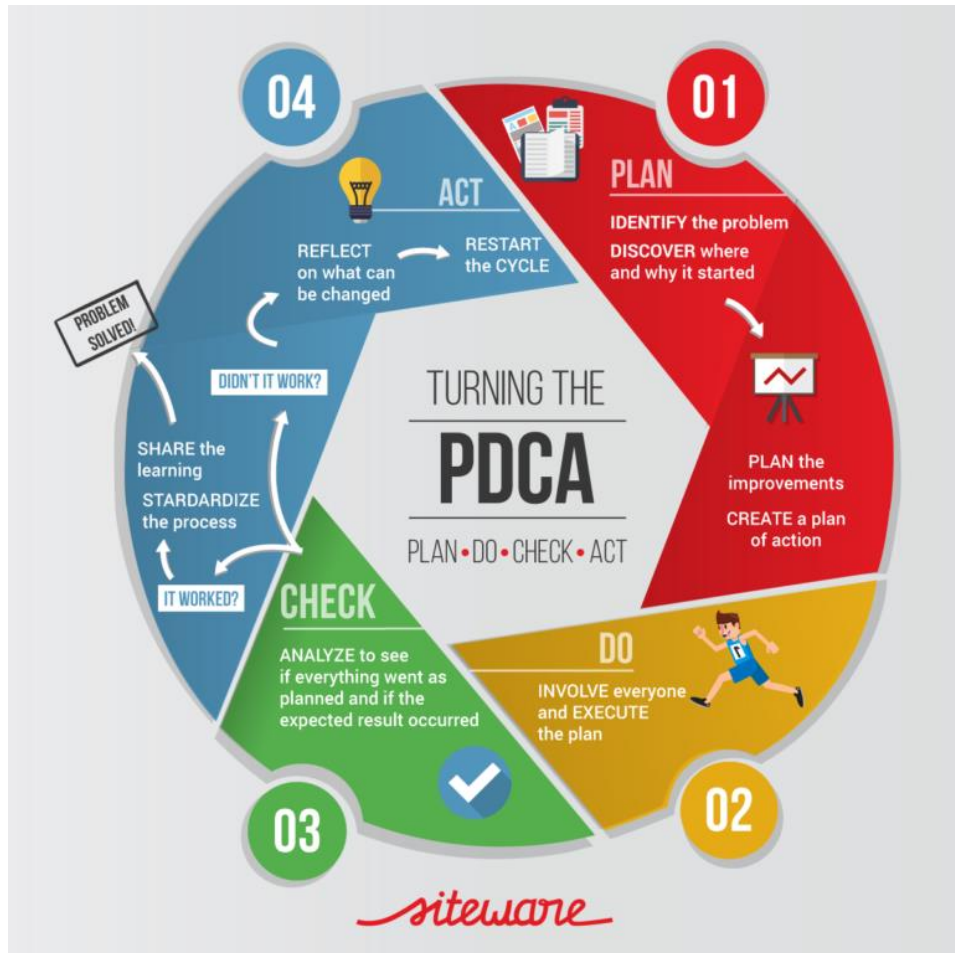
The benefits of this way of working are:

- It fosters a mindset of cadence and discipline of the work
- It enables the team to find a sustainable pace and get predictable
- It creates the possibility to make forecasts
- It creates the opportunity to periodically inspect the progress, evaluate the necessary changes and adjust course accordingly
- It creates the formal opportunity for us to periodically reflect together as a team on how we are doing and ensure we continuously refine the solutions we implement and continuously improve the way we work and finally our results.

Incremental development - Backlog

An important aspect that contributes to the success of an Agile approach is related to the way the work is decomposed and approached.

One core principle that we follow is that at the end of each sprint the "product" (in our case the robot) must be functional and should have at least one new capability in order to consider the sprint successful.

Project Backlog — Sprint Backlog — Sprint — Working robot
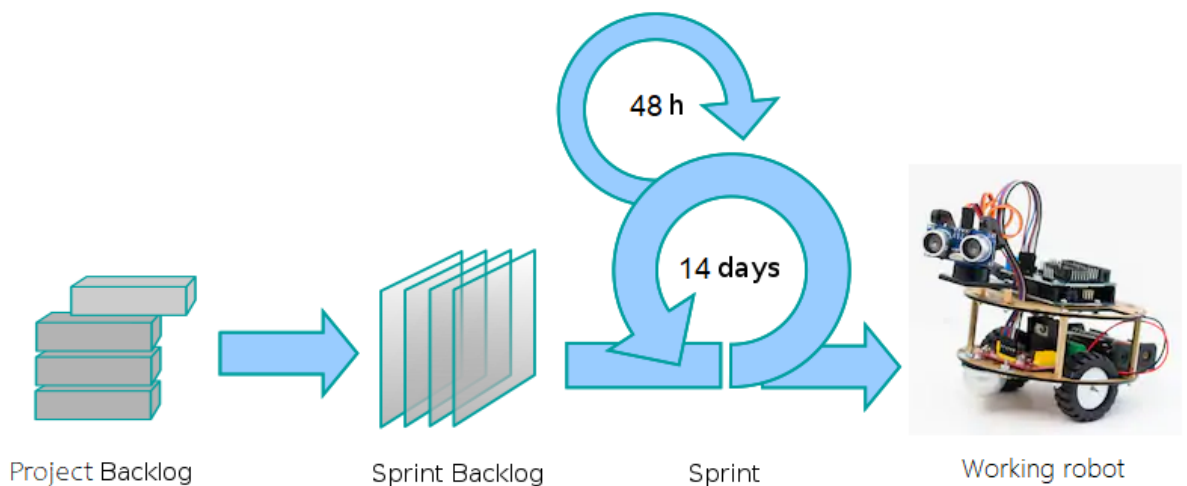
In order for that to happen, the work for the robot is organized around building "robot capabilities". A capability represents a robot function (a specific robot action meant to bring points in a competition). For example, robot capabilities are: front-back movement, lateral movement, obstacle detection, stone collection, stone building and so on. All these capabilities are built and tested both in autonomous and driving mode.

The work of the team consists of many other types of work, not only robot stories, for example:
- organizing events,
- fundraising activities,
- documenting different activities in the journal,
- designing and creating promotion materials,
- editing and printing the journal
- etc

We call these work items "project tasks".

All these work items (robot stories and project tasks) constitute the **project backlog**.

At the **sprint planning meeting**, the team selects a bunch of robot stories and project tasks to implement in a sprint, and then discusses how to implement them. For each of them, the team tries to identify all tasks and activities that they need to execute in order to achieve the work item.

In the case of robot stories, we try as much as we can to identify all tasks required to achieve that capability, regardless of the department. Namely, we try to identify:
- what parts need to be designed and printed,
- what changes or additions need to be done to the chassis or other hard parts,
- what parts of the software need to be created or updated
- what we need to document in the journal regarding that capability

All those tasks will have to be realized within the sprint, in order to implement the capability described in the robot story.

Outreach strategies

Outreach strategies

Our outreach activity is pretty complex and includes both events that we organize entirely or in collaboration with other teams and attending events organized by other teams, which we carefully select and prepare for.

Our outreach strategies this season are:

- Organize our own first demo because this represents an important step in our evolution and an important opportunity to grow as an important player in the FTC community in Romania.

- Expand our footprint with a new FLL team to mentor and support

- Continue to organize community events associated with different occasions because this represents an important opportunity to increase our impact in society and especially within the STEAM ecosystem. Organizing our own events also brings lots of learning and development opportunities, and in addition to that we get known by our close community (school and parents).

Strategies to prepare for the events we organize

How we prepare for the events organized by ourselves:

- we brainstorm for event theme ideas
- once the theme set, we develop the event plan
    - location
    - target audience
    - what is the event script
    - requirements: speakers, sponsors, other requirements
    - what are the preparations required
    - what is the timeline
- event organization
    - work distribution - who does what
- retrospective after the event
    - what went well/what didn't work/what to do differently

Strategies for external events selection

Our event selection criteria are:

- whenever we need and are ready to validate our robot or part of its mechanisms
- size of the event (the bigger the event, the higher the chances to test and adjust the robot and also the higher the number of networking opportunities)
- event's topic (if it's related to our interests)
- proximity
- reciprocity (if the organizing team already attended one of our events)

Of course, as with the robot, not everything works out, so not all events we would like to organize finally make it to reality. In these cases, we learn from what didn't work and if the idea is still valid, we plan to organize the event next season.

Organizational development and sustainability strategies

Organizational development strategy

T-shaped skills profile

"I-shaped"
Expert at one thing

Generalist
Capable in a lot of things
but not expert in any

"T-shaped"
Capable in a lot of things
and expert in one of them
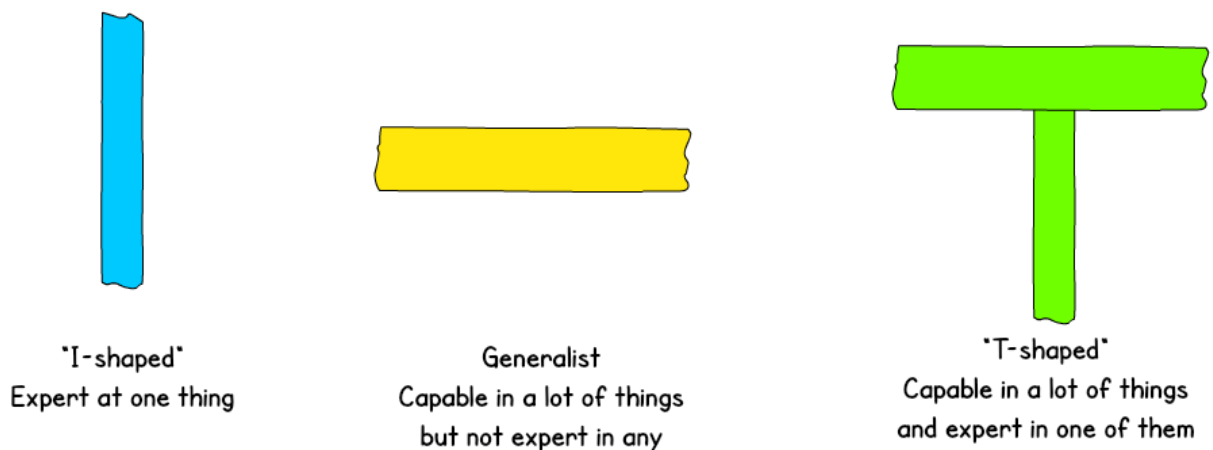
The T-shaped skills profile is a strategy for adapting to varying demands. Working in the robotics team requires team members to do a lot of different things, each of which require different skillsets. There are generally two ways to respond to this:

- adjust the work being scheduled to what can be actually done with the capacity per each skillset
- broaden the skillset of each person, so that they can handle whatever is needed

The first approach is called "demand-leveling" and for a project like building a robot, this way can induce countless desynchronizations and delays between different skillsets, which can finally put in danger the whole project.

The second approach is called "T-shaped skills" and ensures a much more adaptable response to the needs of building a robot and doing all other activities around it (organizing events, writing the journal, etc).

Our approach was to encourage team members to contribute to other departments when needed, so that they learn other skills by doing. For example:

- Mihnea (from CAD department) is helping whenever is needed in the Building department

- Adina (from Building department) is helping the Marketing department with the social media and with getting in contact with other teams
- Gabi (from Building department) is helping with the design of graphical elements for the promotional materials
- Dani (team captain and member of Programming department) is contributing wherever is needed

Another great benefit of this T-shaped approach is that it creates an excellent ground for the team to become self-organizing.

Self-organizing Team

A self-organizing team is a team that has the autonomy to choose how best to accomplish their work, rather than being directed by others outside the team.

Last year's approach was pretty traditional from a management point of view in which the team captain had as responsibility to command and control the activity of the team. This year, with the introduction of the Agile framework, the approach changed in the sense that the team captain is more of a servant leader and facilitator for the team, working directly with the team's coach for guidance.
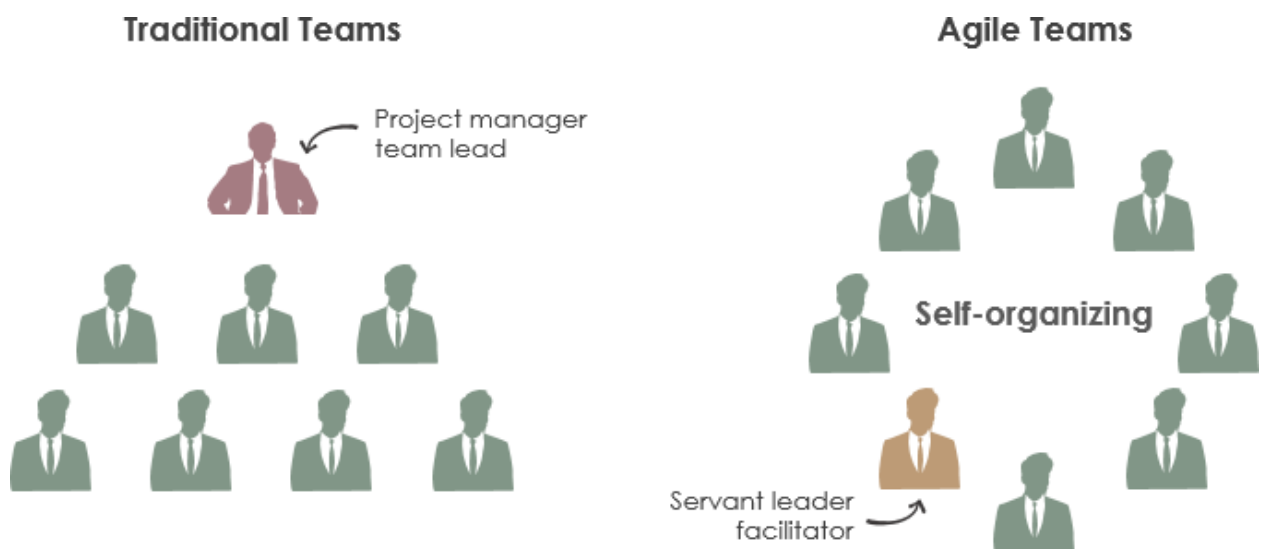
Some of the benefits of self-organization are:

- Team buy-in to and shared ownership of project's commitments
- Motivation, which leads to an enhanced performance level of the team
- Innovative and creative environment
- Enhanced sharing and learning
- Close team bonding

Sustainability plan

Sustainability planning consists of the actions an organization / team takes to maximize its chances to survive despite the uncertainty of what the future may bring. It is crucial for a team's success and longevity to be able to accurately and efficiently pass the present knowledge to the new generation of rookies. Of course, recruiting them is as hard of a task as teaching them.

Previous Attempts

Up until this year, the plan we had for recruiting new members for the team and instructing them was as follows:

Recruiting

- Holding short presentations in every freshman class in our high school
- Handing out a paper on which anyone can sign themselves in order to join the rookie team (phone number, name, department)
- Reviewing the papers and creating WhatsApp group-chats for every department

Teaching

Assembly Team

- *Practical teaching*: giving rookies tasks after brief lessons
- Rookies were expected to ask questions and learn by themselves (on the internet / books / articles)

Programming Team

- *Theoretical teaching*: using a Udemy course as curriculum, explaining in 2 sessions the fundamentals of programming in java
- After the two sessions, rookies were expected to ask questions and to be present when the programming team works, so that we can explain what we are doing
- *Practical teaching*: giving rookies tasks (usually critical ones), in order for them to work alongside us

CAD Team

- *Theoretical teaching*: few lessons regarding the use of CREO and AutoCAD (3d design apps). Rookies should attend while we work.
- *Practical teaching*: Little to none. Once in a while rookies should be given tasks such as recreating robot pieces in a 3d design app

Marketing Team

- *Theoretical teaching*: give rookies lessons regarding the way the team journal is written and how to obtain sponsors
- *Practical teaching*: give rookes tasks related to our work in order to help us, as well as to learn

Selecting

- Besides the programming team, little to no selection was needed: usually rookies that did not show initiative left on their own, leaving us with few options we could not give up on, as they were the only ones that could provide sustainability to the team

- As for the programming team, we gave the rookies a task that they should've completed on their own in a 3 - 4 week's time (while they could still ask us questions). Last year, out of the 15 candidates, only 5 submitted the task, and only 3 were selected, based on their solutions (the method of thinking , honesty regarding who wrote the code)

Results

These statistics represent the number of rookies that managed to join the official team:

- Assembly team: **2-3 / year**

- Programming team: **~2 / year**

- CAD Team: **~2 / year**

- Marketing team: **~1 / year** (debatable, we had some rookies join us at the end of the season)

Retrospective

After the finale of this season, we discussed with the rookies in order to get more accurate feedback regarding the sustainability plan that we used. The feedback was not the most pleasant, but expected nonetheless.

Main issues

The general issues, regardless of the department, were:

- Lack of theoretical knowledge

- No sense of direction or clear objective

- Feelings of uselessness

- Overwhelming practical tasks

Specific issues per department:

Assembly Team & Programming Team

- Way too little theoretical knowledge, which led to rookies being underprepared for the tasks they were given. This resulted in feelings of helplessness and uselessness, and thus they lost interest in the project

- In order to assume that rookies will learn for themselves, they should at least have a general plan or introduction to a topic, both of which were absent

- Not setting clear dates for meetings / lessons led to rookies feeling as coming every time was not rewarding enough for the time they spent there (watching us)

CAD Team

- Both theoretical and practical knowledge were pretty much non-existent

- Rookies felt that they were ignored or that they were useless

- They did not feel rewarded for the time they spent watching us

Marketing Team

- Theoretical lessons were few and useless, rookies still didn't understand how to write the journal

- They felt as the tasks they were given were only tasks that no one wanted to do, so they were forced to do them. They were also underprepared for doing them.

Besides the feedback from the rookies, we came up with our own issues regarding the plan we used, most of them revolving around the lack of competent workforce this year, most rookies that remained in the team being underprepared for a full-fledged project. This is especially the case for the CAD Team and the Marketing Team.

Solutions / This Year's Plan

Over 2 weeks' time we had a plethora of meetings to decide the best course of action regarding the sustainability plan for this year, keeping in mind the feedback we have received. Attached, there is a scheme of the general approach.

This year we tried to include as much theory as possible, while not ignoring the practical exercise. We tried starting off with small tasks, in order for the rookies to build up their confidence, and steadily increase the difficulty, up until the point in which they feel comfortable taking critical tasks and working together with us on the competition robot.

Recruiting

- Holding short presentations in every class in our highschool (from 9th grade to 11th grade)

- Handing out a paper on which anyone can sign themselves in order to join the team (phone number, name, department)

- Promoting the recruitment on social media (instagram, facebook)

- Reviewing the papers and creating WhatsApp group-chats for every department

Teaching

- First meeting - here we would discuss the general aspects of being part of the team, as well as a FTC summary and a brief showcase of the things that will happen department-wise

Technical departments (Assembly Team / Programming Team / CAD Team)

- We will start with an introductory period, in which we will be explaining the core concepts for each department. This will be the theoretical part. It will take roughly around a full month

- After the theoretical part, we will start giving tasks to the rookies, starting with simple ones, regarding the theory we've taught them. We plan on making all the rookies from all technical departments work together on the same projects (e.g. Assembly Rookies build a system, Programming Rookies program it, CAD Team Rookies design it)

- As tasks get progressively more difficult, we will consider giving them the task of constructing a second robot (that we can use for demos or for events)

- After they feel comfortable taking critical tasks, they will be welcomed in the main team

Marketing Team

- For the marketing team, we decided to split it into two sub-departments, based on the skill the rookies have / want to learn: writing and organizing events.

- Both sub-departments will start with some theoretical lessons

- The writing sub-department will document all the work that the rookies from the other departments are doing

- The organization of events sub-department will start by working on pseudo-events, to get comfortable with the idea, later progressing on helping the existing media team on actual events.

RoboSapiens 2019-2020

Sustainability Plan Schema

Practicing & Prototyping (Practical Part)

Building a second robot

Documenting the process

Working on actual events

Prototyping mechanisms based on preceeding lessons

Programming mechanisms built by Assembly Team Rookies

Designing the mechanisms built by Assembly Team Rookies

Documenting the process

Working on prototype-events

Introductive Lessons (Theoretical Part)

Construction Parts (terminology, purpose, types)
Tools (naming, purpose, demonstration)
Electronics (terminology, purpose, types)
Transmission (terminology, theory, examples)

Workspace (IDE, Version Control)
Theory (variables, methods, classes)
Working with the FTC app

Construction Parts (terminology, types)
Fusion 360 fundamentals

Journal Overview
Outreach Events Fundamentals

First meeting

Analize lists
Make WhatsApp groups for each department
Set the first meeting

Promoting the registration period

Building team rookies

Programming team rookies

CAD team rookies

Marketing team rookies

Financial plan

Budget

The resources our team will need this season have been summarized in the table below.

Business Plan - Financial plan

Categorie	Denumire produs	Cantitate	Pret Net (RON)	Total Brut (RON)	Pret Net (USD)	Total Brut (USD)
Piese Robot	REV Robotics 2m Distance Sensor	3	RON 75.93	RON 271.07	$26.95	$ 96.2
	REV Robotics JST PH 4-pin Sensor Cable - 4 Pack	2	RON 21.09	RON 50.19	$5.11	$ 12.2
	AndyMark NeveRest Orbital 3.7 Gearmotor	4	RON 63.00	RON 299.88	$15.25	$ 72.6
	REV Robotics Smart Robot Servo	3	RON 126.55	RON 451.78	$30.64	$ 109.4
	RULMENTI	30	RON 3.00	RON 107.10	$0.73	$ 25.9
	REV Robotics 15mm Linear Motion Kit V2	6	RON 50.62	RON 361.43	$12.26	$ 87.5
	Profil U Aluminiu	3	RON 100.00	RON 357.00	$24.21	$ 86.4
	Foaie Aluminiu	1	RON 250.00	RON 297.50	$60.53	$ 72.0
	Profil L Aluminiu	4	RON 60.00	RON 285.60	$14.53	$ 69.2
	Profil X Aluminiu	15	RON 25.00	RON 446.25	$6.05	$ 108.1
	Tub termocontractibil	10	RON 10.00	RON 119.00	$2.42	$ 28.8
	Tub Izolare Exterioara	10	RON 5.00	RON 59.50	$1.21	$ 14.4
	Rulment KFL 08 8 mm oscilant	4	RON 15.00	RON 71.40	$3.63	$ 17.3
	Rulment 626 RS 6x19x6 mm	20	RON 3.50	RON 83.30	$0.85	$ 20.2
	Rulment 608zz KBS 8x22x6mm	20	RON 2.70	RON 64.26	$0.65	$ 15.6
	Rulment Radial Ax 6mm	10	RON 10.00	RON 119.00	$2.42	$ 28.8
	Ax ghidaj 6 mm	3	RON 15.00	RON 53.55	$3.63	$ 13.0
	Ax ghidaj 8 mm	3	RON 20.00	RON 71.40	$4.84	$ 17.3
	Rola cablu pt difuzor	2	RON 20.00	RON 47.60	$4.84	$ 11.5
	Rola cablu telefon	1	RON 30.00	RON 35.70	$7.26	$ 8.6
	Alte cabluri	1	RON 150.00	RON 178.50	$36.32	$ 43.2
	Sanie de glisare	6	RON 400.00	RON 2,856.00	$96.85	$ 691.5
	Suruburi diverse marimi	300	RON 0.50	RON 178.50	$0.12	$ 43.2
	Piulite diverse marimi	300	RON 0.30	RON 107.10	$0.07	$ 25.9
	Realizare Sasiu CNC	1	RON 300.00	RON 357.00	$72.64	$ 86.4
				RON 7,329.61		**$ 1,805.3**
Echipamente si tehnologie	IMPRIMANTA 3D	1	RON 4,300.00	RON 5,117.00	$1,041.16	$ 1,239.0
	CABLU OTG (MICRO USB)	3	RON 12.00	RON 42.84	$2.91	$ 10.4
	CABLU USB LA MINI-USB	3	RON 5.26	RON 18.78	$1.27	$ 4.5
	CABLU USB LA MICRO-USB	3	RON 15.00	RON 53.55	$3.63	$ 13.0
	INCARCATOR FAST-CHARGE HUAWEI	2	RON 49.55	RON 117.93	$12.00	$ 28.6
	Tastatura cu fir MICROSOFT 600	2	RON 80.00	RON 190.40	$19.37	$ 46.1
	Mouse cu fir LENOVO M300	2	RON 50.00	RON 119.00	$12.11	$ 28.8
	TETRIX 3,000 mAh Battery	2	RON 50.00	RON 119.00	$62.95	$ 149.8
				RON 5,778.50		**$ 1,520.2**
Scule	MENGHINA	1	RON 672.27	RON 800.00	$162.78	$ 193.7
	BURGHIE SI FREZE	1	RON 126.05	RON 150.00	$30.52	$ 36.3
	CHEI FIXE/TUBULARE, SURUBELNITE, IMBUSURI	1	RON 126.05	RON 150.00	$30.52	$ 36.3
	PANZE POLIDISC	2	RON 21.01	RON 50.00	$5.09	$ 12.1
	DISC DEBITARE FERASTRAU STATIONAR	1	RON 336.13	RON 400.00	$81.39	$ 96.9
				RON 1,550.00		**$ 375.3**
Consumabile	ABRAZIVE	1	RON 42.02	RON 50.00	$10.17	$ 12.1
	ZIP TIE (DIVERSE MARIMI)	1	RON 150.00	RON 178.50	$36.32	$ 43.2
	BANDA IZOLIERA, DUCT TAPE, SCOTCH HARTIE	5	RON 23.00	RON 136.85	$5.57	$ 33.1
	FLUDOR	3	RON 21.01	RON 75.00	$5.09	$ 18.2
	Rola Filament Imprimanta	4	RON 100.00	RON 476.00	$24.21	$ 115.3
				RON 916.35		**$ 221.9**
Materiale promotionale	CARTI DE VIZITA	1	RON 252.10	RON 300.00	$61.04	$ 72.6
	STICKERE	1	RON 168.07	RON 200.00	$40.69	$ 48.4
	MAGNETI	1	RON 126.05	RON 150.00	$30.52	$ 36.3
	SISTEM AUDIO	1	RON 504.20	RON 600.00	$122.08	$ 145.3
	Costuri Printare Si Lipire Jurnal	1	RON 1,500.00	RON 1,785.00	$363.20	$ 432.2
	Rollup	2	RON 500.00	RON 1,190.00	$121.07	$ 288.1
				RON 4,225.00		**$ 1,023.0**
Transport concurs/evenimente	DEPLASARE MEMBRI SI ECHIPAMENTE	1	RON 2,000.00	RON 2,380.00	$484.26	$ 576.3
				RON 2,380.00		**$ 576.3**
Organizare	Benzi magnetice depozitare	4	RON 30.00	RON 142.80	$7.26	$ 34.6
	Foaie Fier	1	RON 200.00	RON 238.00	$48.43	$ 57.6
	DULAPURI	2	RON 300.00	RON 714.00	$72.64	$ 172.9
	CORP CU SERTARE	1	RON 2,000.00	RON 2,380.00	$484.26	$ 576.3
	Dulapi De Lemn	1	RON 200.00	RON 238.00	$48.43	$ 57.6
				RON 3,712.80		**$ 899.0**
Costuri realizare diverse piese	Costuri CNC	1	RON 3,000.00	RON 3,570.00	$726.39	$ 864.4
	BORMASINA	1	RON 150.00	RON 178.50	$36.32	$ 43.2
TOTAL GENERAL				**RON 41,978.92**		**$ 10,467.6**

Fundraising strategies

Sponsors attraction strategies

- Creation of an NGO that will allow us to officially receive funds
- Prepare a proper team presentation
- Define more valuable and attractive sponsorship packages
- Research for companies interested in sponsoring STEM activities and find out their contacts
- Contact as many companies as we can get contacts from

Public fund-raisers

- Organize such events associated with the public holidays (Halloween, Christmas, St. Valentine, Easter, etc) in our high school

II.MARKETING DEPARTMENT

Overview

The Marketing Team is responsible for every aspect related to the organization and writing of the Engineering Notebook, as well as Event Planning and PR. Moreover, they are tasked with promoting our team through various promotional materials and Social Media activities. Obtaining sponsorship is also an extremely important part of their work.

After adopting the Agile Approach (), the department difficulties decreased significantly. However, we still encountered numerous problems. First, this year our department was seriously understaffed, with just a few people actively working. Furthermore, we had a hard time obtaining sponsors, as the strategy to send e-mails and wait for a response was not in our advantage. Finally, some of the department members were also involved in other activities that meant they had little time for robotics. This being said, we were also confronted with a lack of dedication in some periods of the season, which was diminished as the competition got closer.

Engineering Notebook

The **Engineering Notebook** is of much importance in the competition. Therefore we always try to make it our number 1 priority. We decided to divide it into 2 parts: the technical and the non-technical one, in order to make it easy for the judges to visualize all the steps to preparing for the competition. In terms of actually writing entries, the marketing department is mostly responsible for the non-technical part, which involves the following:

- Team Section
- Outreach activities
- Business Plan
- Marketing Department

As for the technical part, a member from each department (Building, Programming, Design) is tasked with writing the part of the journal that involves their contribution. The structure is the following:

- Department Overview
  - o Strategy
  - o Basic Concepts
  - o Specific training and integration for rookies
- Working sessions
- Robot Evolution
- Training rookies

Event Planning

Strategies to prepare for the events we organize

How we prepare for the events organized by ourselves:

- we brainstorm for event theme ideas

- once the theme set, we develop the event plan

    o Location

    o target audience

    o what is the event script

    o requirements: speakers, sponsors, other requirements

    o what are the preparations required

    o what is the timeline

- event organization

    o work distribution - who does what

- retrospective after the event

    o what went well/what didn't work/what to do differently

Strategies for external events selection

Our event selection criteria are:

- whenever we need and are ready to validate our robot or part of its mechanisms
- size of the event (the bigger the event, the higher the chances to test and adjust the robot and
- also the higher the number of networking opportunities)
- event's topic (if it's related to our interests)
- proximity
- reciprocity (if the organizing team already attended one of our events)

Fund-raising activities

We organized several activities to get funded out of which the most important ones are listed below:

- Visit and presentations with potential sponsors
    - Gemini Solutions
    - IMake3D
- Holiday Fairs organized in the high school
    - Christmas Fair
    - Halloween Fair ()

Halloween Fair

We consider ourselves as being festive people who like to celebrate really often, so we decided to organize a Halloween fair. All the members from our team tried to make as many delicious treats as possible. From pumpkin pie to vanilla cupcakes, everything was prepared and all the students and teachers enjoyed our initiative. We even had a photo corner so that everybody will actually get the chance to have a picture with them and their friends all dressed up. Our costumes varied, students having the choice to be a witch, a devil, a pirate, an angel and many more. Pumpkins were carved by the members from Robo Sapiens Junior, the First Lego League team, as we tried to make everything work together.

We all ended the fair being happy that, with all the funds we raised, we were having big plans to use them in order to organize the demonstrative games. Nonetheless, we also started getting excited for the next fair we were going to organize for Christmas.

-

(Social) media activities

This year, our social media posts were mostly on Instagram, as well as Facebook. They mainly consisted of pictures from the attended or organized events and several reposts from other teams' accounts. Moreover, we regularly posted stories with our activities, such as working in the workshop or going in teambuildings, in order to stay connected to the First community. Furthermore, there were various contests or requests from the other teams that we participated in. For instance, Clockworks Team, from ,,Gheorghe Sincai'' National College, asked us to send them a short story of a memory with their team or one of their members, in order to post numerous such recollections.

Interview for Vice Magazine

As we mentioned previously, at the Color Talk- Street Ark & Robotics Workshop, Costina and Gabi had to sustain an interview for VICE Romania, which you can find it fully on https://www.vice.com/ro/article/kz45vm/liceenii-care-ar-putea-salva-romania-cu-roboti

Translation:

High school students who could save Romania with robots
What do you think the new generation knows about the future?

If you are afraid that the robots will leave you jobless, your concern is unfounded. And say the creative high school students who deal with robotics around us across the country. "A robot can replace any mediocre man at his job, but he cannot take the place of a specialist," says Stefan, 17 years old. In other words, robots will force you to be better at what you do so you don't lose your position. Which sounds fair in today's world, but it's your fairy in Romania.

A story of the future. As the 50 high school students who participated in the action Colors Talk | will write Street Art & Robotics workshop in October, an event that combines art and

creativity with robotics under the theme "Ocean opportunities". Not for nothing were the students who are part of the national robotics program FIRST Tech Challenge Romania present. Their work is exhibited in the Polytechnic Robotics Hub.

I spoke with some of the young people who will change Romania, in a time when we talk about robots created at algorithm level, AI (artificial intelligence), but also those of Boston Dynamics, humanoids or pathos, who can treat and a truck. I learned from them how they relate to global warming, what robots would do to save Romania, but also if they would leave here in countries that could offer them more.

Costina Mihaela Cone, 17 ani

Global warming: *Even though it is widely publicized, no measures have yet been taken to reduce the problem. Through robotics, things could be solved to some extent, but not entirely. To save the world I think I would do more robots in several areas so that there is a balance. We must also focus on collective problems in order to evolve.*

Romanian Robot: *If I could, I would design a robot that would repair everything in everyone's home, but also one that would analyze the success rate of a project, to help develop the business. And I know that on this subject, people are afraid of robots, that they could take their jobs. The jobs that should be replaced by robots are those where the workforce is still not sufficient, such as those of installers, tailors and other similar jobs that, at the moment, are not as sought after as they should be.*

Where would you go: *If I were to specialize in this field, I would very much like to go to the United States or Denmark. Both countries consider that they have a different level of development, with robotics already being considered a normal activity in everyday life.*

Gabriel Stanciu, 16 ani

Global warming: *I don't think there is a robot to change the world, but in specific areas, it could have a big impact. For example, a drone that identifies areas, such as forests in which waste is located, to be collected and recycled or taken to an appropriate area. This brings us to the topic of global warming. It is a problem that has reached a level that can affect our future as a generation. It endangers health and jobs, such as agriculture. In this context, robots can be programmed to sort waste, collect garbage, use drones, and even perform tasks that we haven't even conceived so far.*

Romanian Robot: *For Romania, I would create a robot to plant trees, because deforestation is a critical and even more sensitive issue in our country. I would like to find an area where I am willing to learn all that is needed to be able to expand the knowledge barriers of humanity and so I will make a difference in the future of the country. But I am sure that the possibilities alone are limited. That's probably why I would stay in Romania, because the time has come for technology to develop further here.*

Robot jobs: *So far, I have worked on small circuits and mechanisms that can help me in my daily life. For example, I made an aquarium air pump and a lamp from an old CD case. But I think technology is an abstract term. Currently, it is represented by digitally programmed mechanisms, such as robots. But I truly believe that my generation can improve people's lives through technology. Robots can perform daily tasks for people with disabilities or the elderly.*

Where would you live: *For me a better place means being able to enjoy life without being hindered by poor physical conditions. The rest of the problems in society help us to grow even more, though they seem unfair.*

Tools Used

Google Drive

Google Drive is a file storage and synchronization service developed by Google. Google Drive allows users to store files on their servers, synchronize files across devices, and share files. In addition to a website, Google Drive offers apps with offline capabilities for Windows and macOS computers, and Android and iOS smartphones and tablets. Google Drive encompasses Google Docs, Google Sheets, and Google Slides, which are a part of an office suite that permits collaborative editing of documents, spreadsheets, presentations, drawings, forms, and more. Files created and edited through the office suite are saved in Google Drive.

Key attributes that Google Drive has that help us are:

- File sharing

- Real-time multi-editing

- File organization

- Version control

- Free office suite

We keep all of our team's documents and photos on Google Drive in order to access them easily across multiple devices and to keep them updated. We write our text in Google Docs and then we assemble the engineering notebook in Microsoft Word.
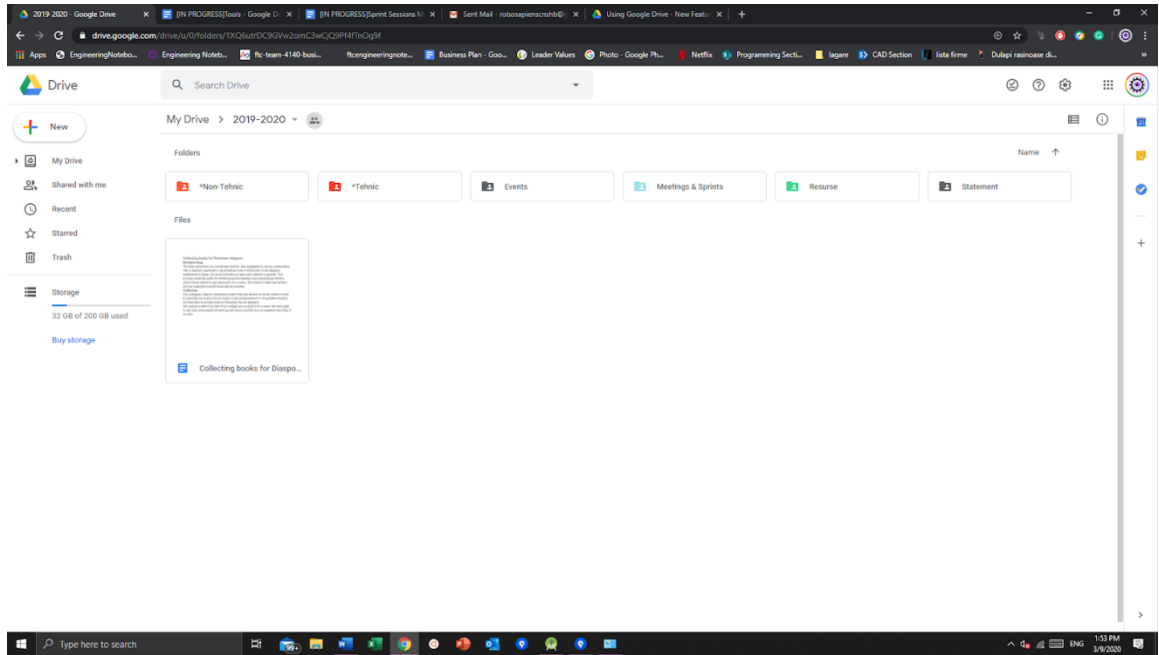
Working sessions

Since the start of the school year, we adopted the Agile Approach in order to solve our time management issues and making decisions together ()

Thus, the structure of this section is as follows: each chapter (or *sprint session*) consists of 3 sections:

- Sprint planning: a **table with planned tasks** with **a brief explanation** for the said tasks
- Working sessions: the **log of working sessions** during the said sprint session (Note that all activities mentioned in the working sessions are sub-tasks of the tasks planned for the sprint).
- Sprint retrospective: an **outline of the retrospective meeting** for that sprint

This section is dedicated only to the marketing department. For the technical parts,

Sprint 1 (21.09 – 4.10)

Sprint Planning

Department	Task	People in charge	Task status
Marketing	Events Plan	Iulia	New
Marketing	Marketing Meeting with Rookies	Ana	New
Marketing	Overview Engineering Notebook	Ana & Pala	New
General	Creating a NGO*	Coach	New

*NGO - non-governmental organization

This was our first documented and organized sprint. There were already some tasks left after the summer break, a period in which we started implementing the Agile approach ().

The planning meeting was held 2 weeks after the kickoff event. In that time, we discussed our time management, business plan, and also started the sustainability plan by recruiting rookies and discussed options for receiving sponsorship funds.

Therefore, we decided the tasks presented above represent the first priorities. The first thing we had to do was to overview our engineering notebook from our last season in order to establish a new structure. Our main purpose was to teach the rookies how to write and what headlines to follow when writing in the notebook. Moreover, another important task was to make a plan for future events after a brainstorming session. We also decided we should create an ONG* in order to manage funds easier when receiving a sponsorship. This involved our coach helping us and announcing that it will take some time until the task is done properly.

Working Sessions

Session #1

Date: 21.09.2019
Attendance: Iulia, Costina, Alex Miclea, Miruna, Dani, Gabi, Adina

Tasks:	Postponed	In Progress	Done
FTC Registration Essay			X
FTC Registration Video		X	

Along with the rest of the team, we decided that we should at least start the submission forms for FTC Romania. Iulia chose to write the essay with help from the others related to ideas, grammar correction and rephrasing sentences. This task was accomplished by the end of the day. The other part of the submission involved a video in which we had to answer some questions. Costina made a short script in order to be easier for us when filming. After a few hours, we had all of the parts on camera and all we had to do in the future days was to make it a whole as it was quite late and Alex Miclea (from the programming department) offered to help.

Session #2

Date: 25.09.2019
Attendance: Costina, Iulia, Daniel, Pala, Carina, Ana Chitic

Tasks:	Postponed	In progress	Done
Marketing meeting with rookies- planning			X
Events plan		X	
Overview of the engineering notebook		X	

The main purpose of this meeting was to have a short look at what we are going to do this season. Daniel wanted to attend in order to help us figure out our marketing department strategy. Pala, a representative from our team who participated in the FTC journey for the past three years, volunteered to give us headlines and show us how the process of writing an engineering notebook is done. Moreover, we also had in view the sustainability plan and how to create and manage an event properly. Firstly, our decisions related to the marketing meeting with the rookies were the following:
- We will present them in the first meeting the theme and more important aspects such as our events from last year, what our department is doing regularly, the importance of the engineering notebook and how to earn sponsorships
- We will create a Google form to see their interests: writing, management, editing, photography
- In the future meetings, we are going to give them small tasks such as writing a meeting or a small event we attended to

On the other hand, we talked about writing everything in Google Drive so the whole team can be updated on which tasks we are given and the status of them. Overviewing the notebook from last year, we decided that we have to make changes to the graphics and promotional materials. For event planning, we thought about hosting our own demonstrative matches with another team, but for more details, we will organize another meeting just for events. ()

Another important point was the announcement Pala made, that she and Ana will no longer be part of the team after teaching us the basics due to their full schedule in the senior year. Ana Chitic and Carina, new members, decided to be part of the rookies and start from the beginning.

Session #3

Date: 30.09.2019
Attendance: Costina, Iulia, Ana Chitic

Tasks:	Postponed	In progress	Done
Events Plan			X

After a short talk we had at the last meeting related to this year's goals in event organization and impact on society, we made some notes on four events we would like to create this year.

1. Robo Sapiens Demo

    The most important event and the one which would bring us complacency in doing was the demonstrative matches. The estimated date was in December and our goal was to have around 15 participant teams. We also discussed the location and we thought our high school would be quite suitable, so this was the first thing we had to obtain. We also found it important to have sponsors for food and promotional materials, to have an Instagram post for making it visible and also to invite as many teams as possible. As we believed we did not have enough funds to make it whole on our own, we took in consideration to make a partnership with another team.

2. Eco-Friendly - Climate Change Event

    This event was inspired by our worldwide problems and it would be a necessity to raise awareness about how important recycling and using eco-friendly materials is. The date when we would like to organize was in November. It was quite unclear about what this activity would include so we had to plan multiple meetings to make the plan more complex. ()

3. All the First Stem Ladies 2

    As the event from last year had such great success among teenagers, we decided to make a sequel to the event. This year we will do All the First STEAM Ladies as art is a new value, added to the competition's values. The date of the organization will be somewhere in February, so we will have time to organize it. The location can be the same as last year's, a classroom in our high school. The purpose of the event will be to inspire young women that they can be in any profession they want to.

4. Christmas Movie Night Event

    Willing to have an impact on society nowadays, we would also like to organize a charity event consisting of a movie night, inviting teams and also other students. We wanted to do this event last year as well but we gave up when realizing the lack of time and the priority of other events and activities.

A problem we also realized at this meeting was the fact that we didn't manage to make ourselves a proper schedule to hold these meetings to participate more members, so our solution was to also hold our meetings on Discord to solve the problems occurred during the time.

Sprint Retrospective

For this sprint, these were the **things that we were happy about** (regarding non-technical department):

- We were satisfied with the outcome of our first marketing meeting with rookies as they were also in such a large number and had shown interest in our activity.
- We were glad that we finally had a brainstorming about what events we should implement this season
- We finally started working on concrete tasks and welcomed the opportunity to try new things.

The **things that didn't go well** were:

- The communication between the marketing department and other departments, and also inside the department
- The full schedule of everybody in the department

   Details: As we were all in different years, it was quite hard for us to participate at meetings and also no member of the marketing department was present at the sprint retrospective meeting.

Department	Resolution
Marketing	Holding the meetings on Discord
Marketing	Being more present in the workshop and at important meetings.

Sprint 2 (5.10– 18.10)

Sprint Planning

Department	Task	People in charge	Task status
Marketing	Overview Engineering Notebook	Ana & Pala	Carried over from previous sprint (to do)
General	Creating an ONG*	Coach	Carried over from previous sprint (in progress)
Building	Document the strategy discussed in the first meeting	Gabi	Carried over the last sprint (in progress)

The planning for the second sprint was mainly focused on creating a longer-term backlog, hence the addition of so many post-its in the backlog section of the whiteboard (see picture below). Besides the technical tasks (), we also had a couple of stories related to what our goals for the future 2 months were. We were also announced we were going to have a meeting with some possible sponsors in 2 weeks. So, the stories we added include tasks like:

- Eco- friendly Event - Dani & Costina (estimated date: November)
- Sponsorship Presentation & Speeches

- Charitable Event - Ana Chitic & Carina (estimated date: December)

On the other hand, the tasks we carried over from the last sprint were not fully completed. Ana and Pala decided we had to make a meeting with the whole team in order to overview the engineering notebook and we all had to make time in our schedule and take a break from other tasks to complete this one. Moreover, our coach already announced us it was going to take a while until the ONG* is ready, so we decided to put it "in progress" until done.

Working Sessions

Session #1

Date: 11.10.2019
Attendance: Coach and team member`s parents

Tasks:	Postponed	In progress	Done
Meeting with parents			X

After several sprints and talks, our team decided that even parents can get involved in our development in the FTC Program. So, our coach decided to organize a meeting with all parents in order to discuss several subjects such as sponsorships, help in getting around easily for demonstrative matches and other events. They were all so supportive and we gladly created an online group chat where, during time, they will get updates related to our work, our results and our implication.

Session #2

Date: 15.10.2019
Attendance: Costina, Gabi, Iulia, Adina

Tasks:	Postponed	In progress	Done
Vice Interview		X	
Facebook Description Update			X

We had participated, a weekend before, at the Color Talk Event () and, as mentioned, we won an online interview for Vice Magazine. Costina and Gabi had to fill in the questions related to major worldwide problems like global warming and how robots can influence solving these issues. A part of them was completed at the workshop, sharing ideas and completing them together and the rest we finished them a day later. It ended up really professional. Meanwhile, we found our description from our Facebook page quite outdated. Adina and Iulia managed to update it and make it really interesting and appealing for everybody checking our online activity.

Date: 16.10.2019
Attendance: Coach, Costina, Iulia, Pala, Ana, Ana Chitic, Carina, Dani

Task	Postponed	In progress	Done
Establishing the details for the next rookie meeting			X
Sponsors Presentation		X	
Eco-Friendly Event meeting	X		
Deciding our new approach to working sessions			X

This meeting had the purpose to make some changes in the development of the department. Firstly, we started by making a list of what our department is responsible for. This includes:
- Organizing events
- Writing the non-technical engineering notebook
- Photos & Videos
- Promotional materials design
- Social Media Activity
- Sponsorships
- Presentation

The next important step in our meeting was to reflect on our meetings with rookies as we observed a lack of interest in the last few meetings. We agreed on changing the strategy by giving them either small tasks or an imaginary project that would help them understand what to do when organizing an event.

When? Wednesday, 23.10.2019, 13:30
Who? Ana & Pala
What will be the subject of the meeting? Overview of non-technical engineering notebook and the process of writing a meeting or an event.

Moreover, we came to the conclusion that we had to start researching and making notes on the following events:
1. Robotics Summer Camp - Costina
2. Kick-off - Iulia

Dani also offered to help by making a list of events we attended. Our principles while writing an event were that a person from the marketing department should work with one from any department who attended the event in order to take notes on some important headlines. Taking into consideration that we also had to organize the events and hold the rookie meetings, we decided to write one event per sprint.

Our coach announced to us at the sprint planning that we will have a meeting with some possible sponsors next week. In order to do so, we had to keep in mind the following advice:
- Speeches must be short, containing elementary information related to each department
- Presentation portfolios must include the budget, our sponsorship packages and should include a possible agreement sheet.
- A PowerPoint presentation that can be easily sent online right after the meeting
- A short movie with the evolution of the robot (from last season)
- We should decide in about two days who is going to be present at the meeting

We also postponed the eco-friendly event talk as we decided we should have a different meeting when planning an event. The people who offered to participate in this talk were Ana, Pala, Dani, Costina and our coach.

Eventually, we agreed on a new approach in the marketing department which consists in being more prompt, holding more meetings on discord, working in pairs (2 people on a task) and having weekly meetings for sharing and updates.

Session #4

Date: 17.10.2019
Attendance: Dani, Costina, Danilov, Adina, Miclea

Tasks:	Postponed	In progress	Done
Eco-Friendly Event Planning		X	

As we discussed in the marketing meeting a day before, we had a separate meeting in order to create a plan for this event. We started by taking notes about some core ideas such as what the event should include. Our main idea was to create a workshop where the participants can build a robot from recyclable materials and also include a speech with a member from an association that promotes recycling and using ecological materials and a speech from a technical trainer or a parent from such field. Last year, when we came up with this idea we contacted an ONG* which was very excited at first, but we didn't keep in touch.

Afterwards, we agreed on some of the requirements for the event to happen. We made the following list of elements:

- Control Kits for the robot
- Trainers
- Tables & Chairs
- Beverages & Snacks
- Volunteers
- Materials for the robot
- Laptops
- A theme
- Arduino Library

We also thought about how to reach as many people as we can. We decided that, when it's time we are going to make several announcements on social media, create a poster and invite several teams from the FTC program. Our expectations at that point were to make the participants bring their own recyclable materials and have around 50 participants. Our target audience would be all ages as we were seeing it as an open event. Our plan is the following:

Workshop
a. Introduction
  -   Make the purpose clear
b. General Training
c. Working pt. 1
d. Lunch break
e. Working pt. 2
f. Feedback

Sprint Retrospective

We started off the retrospective meeting with a feedback activity. We were asked to write on a post-it one thing we were proud of and, on another one, a thing we were concerned about *regarding the sprint that just ended*.

After everyone had a chance to share their thoughts, we grouped the post-its based on their main idea (see picture below). These were the **things we were proud of**:
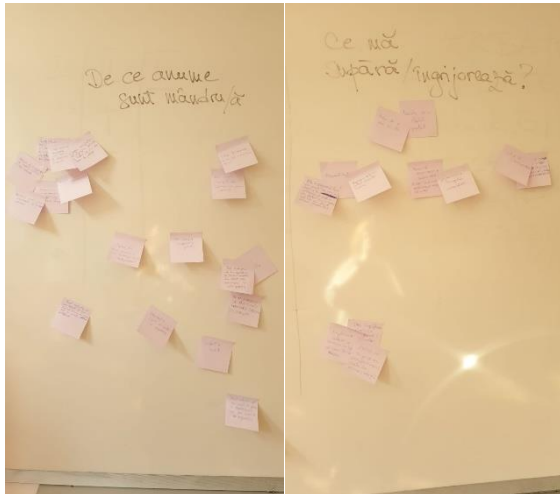
- the rookie training & overall involvement (8 post-its)
- quality of communication (2 post-its)
- finishing tasks on time (3 post-its)
- competition registration (1 post-it)
- personal achievements (1 post-it)

And these were the **things we were concerned about**:
- slow progress (3 post-its)
- inefficient communication (2 post-its)
- fear of judgment (2 post-its)
- bad time management (2 post-its)
- untidiness and litter in the workshop (2 post-its)

Keeping in mind these problems, we came up with the following resolutions:

KEEP DOING	START DOING	STOP DOING
Rookie training program	When there is a disagreement, contact mentors	Physical attendance during meetings (except for daily stand-ups)
Quality of the presentations	Supporting ideas with arguments (pros & cons)	A theoretical approach with the rookies.
Daily stand-up meetings	Use the trash can (and buy new ones)	
Discussing the problems efficiently		

Sprint 3 (19.10– 1.11)

Sprint Planning

Department	Task	People in charge	Task status
CAD	Tutorial Notebook Writing	Ada & Timy	New
Marketing	Gemini Meeting	Dani & Costina	New
General	Registration Movie	Alex Miclea	New
General	Website Prototype	Dani & Miruna	New
Building	Document the strategy discussed in the first meeting	Gabi	Carried over the last sprint (in progress)
General	Creating an ONG	Coach	Carried over from previous sprint (in progress)
Marketing	Eco-Friendly event	Costina & Dani	New
Marketing	Vice Interview	Costina & Gabi	New

This planning we made a couple of tasks not related only to events, but also to the engineering notebook. For technical departments, especially for CAD we agreed on organizing a tutorial for writing as it is necessary for them to know the structure. Moreover, documenting the strategy discussed in the first meeting is in progress. Related to marketing, we had to clearly organize the strategy for the Gemini Visit. Regarding the events, organizing the Eco-Friendly event is in progress at this moment as we made the plan last sprint (). We also added the editing of the Vice Interview () in the task list, in progress, due to the fact we still haven't sent it to the editors of the magazine.

Our team also considered having a website in order to post more frequently, so Dani and Miruna started designing a website prototype. For the registration movie, Alex Miclea was still working on it, making it more interactive and using different visual effects. Our coach also gave us some updates on the ONG* situation.

Working Sessions

Session #1

Date: 20.10.2019
Attendance: Costina, Dani, Alex Miclea

Tasks:	Postponed	In progress	Done
Gemini Presentation		X	

Due to the fact that we had to attend this sponsorship presentation, we had to prepare ourselves properly. The company that showed interest in our activity was Gemini Solutions and we started by making a plan. First, we had about one hour just for brainstorming. There, we established the most important points and what we must owe at the moment of the presentation. We had to compose some presentation portfolios in order to be easier for the representatives of the company to pay attention and follow our speeches (and also we had to create a structure for them). In this folder, we must include our estimated expenses and they should be updated. Moreover, we should have a presentation that can guide our speeches. We also had a task to decide on which day we will hold the meeting.

After this step, we started making a sketch for the speeches. The people who will attend the meeting will be our coach, Dani (our leader) and one person from each department. Dani should start by explaining our way of working, our structure and a brief summary of the role of the engineering notebook. Then, the presentation should be divided into the introduction of non-technical and technical parts. Both of them must include support to prove our point and convince them we are involved as much as we can in this project.

Session #2

Date: 21.10.2019
Attendance: Costina, Iulia, Dani

Tasks:	Postponed	In progress	Done
Eco-Friendly Event Planning		X	

Today we arranged a meeting in order to update our status on the eco-friendly event. Due to multiple problems in our communication, we made a list of problems and points of concern that we sent to Ana &Pala because they contacted the ONG* which showed interest in us last year. After this meeting, we had in mind that we had to organize a more complex plan for accomplishing our goal.

Session #3

Date: 22.10.2019
Attendance: Costina, Adina, Iulia, Dani, Alex Miclea, Timy

Tasks:	Postponed	In progress	Done
Gemini Speeches			X

First, Dani will start by explaining the way our team developed in the last few years. Afterwards, we will explain our tasks by departments and we will end by presenting our sponsorship packages and our

coach will discuss the legal part of the sponsorship request. As for the presentation draft, we would like to bring a CAD project and also the engineering notebook from last year. We also made a summary of our needs which includes batteries, different parts for the building department, a new 3D printer for CAD, new peripheral devices and funds for future events.

Session #4

Date: 24.10.2019
Attendance: Costina, Adina, Dani, Timy, Coach

Tasks:	Postponed	In progress	Done
Gemini Meeting			X
Eco- Friendly Event Planning		X	

Today was quite an important day for our team. It was our first meeting with some possible sponsors and we were a little nervous related to the whole situation but, fortunately, everything went well. To sum up our experience, we made a list of what went well, what went wrong and solutions.

What went well: We were all engaged in the discussion, expressing our opinions. Our presentation draft was impressive for the possible sponsors and we supported our ideas with strong arguments, especially related to our nearby future milestones.

What went wrong: We were a little bit disorganized and might have repeated some points in our speeches. Moreover, we didn't explain enough about the building department's needs.

Our solutions: Be more spontaneous and make a more visible point when talking about each department, short and clear.

The answer was going to be received the following week. On the same day, we also sent them a short video with the history of our robot activity in the last few years and the presentation. Moreover, we also had a discord meeting where our coach gave us an opinion on the plan for the eco-friendly event and made a few improvements in the plan (when to have the speaker, who should be the trainer) but no decision was made.

Session #5

Date: 28.10.2019
Attendance: Iulia, Adina, Dani, Alex Miclea

Tasks:	Postponed	In progress	Done
Eco-Friendly Event Planning		X	

Even though we didn't have a lot of things to update, we considered it would be more efficient if we had constant meetings regarding the organization of this event. We all thought it was a great idea and today we just created the tasks we are going to start on a short term.

Sprint 4 (02.11 – 15.11)

Sprint Planning

Department	Task	People in charge	Task status
Building	Write Technical Events in the Notebook	Danilov	New
Marketing	Notebook Summer Events	Costina & Iulia	New
General	Website Prototype	Dani & Miruna	Carried over the last sprint (to do)
General	Registration Movie	Alex Miclea	Carried over the last sprint (in progress)
General	Creating an ONG	Coach	Carried over from previous sprint (blocked)
Marketing	[Eco-Friendly Event] Mail Environ	Costina	New
Marketing	[Eco-Friendly Event] Budget & Requirements	Dani	New
Marketing	[Eco-Friendly Event] Obtaining Location	Dani & Costina	New
Marketing	[Eco-Friendly Event] Mediatization	Iulia	New

Having planned the eco-friendly event, we chose 4 of the most important tasks to do this sprint. Out of these 4 tasks, the most crucial was finding a suitable location to host the event, as well as having a list with all material requirements.

Meanwhile, as working on a website was not a priority, it was moved back into the 'To do' column.

Working Sessions

Session #1

Date: 5.11.2019
Attendance: Iulia

Tasks:	Postponed	In progress	Done

Writing Kick-Off		X	

After several talks related to this subject, Iulia started working on accumulating material about the kick-off. She made a list of important points and developed a few of them planning to finish it later.

Session #2

Date: 10.11.2019
Attendance: Costina

Tasks:	Postponed	In progress	Done
Writing Beclean Robotics Camp		X	

The next attended event which we decided to gather information about and organize our ideas was Beclean Robotics Camp. Costina took the task and made plans by days. Moreover, this camp also had an important role in our team bonding and we felt much closer afterwards.

Session #3

Date: 14.11.2019
Attendance: Costina

Tasks:	Postponed	In progress	Done
Mail to Environ ONG			X

As this was one of our main tasks from the last sprint, we mailed the ONG* who was willing to help us last year updating them with our plan. We received an answer quite fast and unfortunately, they did not have enough time to invest in our project. Considering this, we had to change the plan and our option, by now, was to delay the event as they mentioned that it would be a possibility for them to be available next year.

Sprint Retrospective

The main issue discussed during this sprint retrospective (non-technical) was about the marketing department rookies. Since the beginning of the season, after the recruitment period, there were some misunderstandings regarding who was in charge of training the rookies. This meant that the rookies were not managed for almost 2 months. Many believed that we had no interest in them anymore so they left.

This was an important issue, as the marketing department is greatly understaffed and we relied on the future support of the rookies.

We decided on 2 resolutions:

- *Make the situation clear for the remaining rookies*: explain how we got in this situation and apologize

- *Involve them through 'learn by doing'*

Sprint 5 (16.11 – 29.11)

Working Sessions

Session #1

Date: 18.11.2019
Attendance: Costina

Tasks:	Postponed	In progress	Done
Writing Beclean Robotics Camp			X

After a few days of working, Costina finally finished the document. It was well structured and we decided we will follow something similar for such events.

Session #2

Date: 20.11.2019

Attendance: Dani, Costina, Coach

Tasks:	Postponed	In progress	Done
An updated sponsorship presentation			X

Because of our necessities, we continued to look for sponsors and send them different types of proposals. After a while, we felt the need to update our presentation and, along with our coach, we made a few changes by adding a few more details such as the motto, how many past members continued to follow technical courses and some photos.

Session #3

Date: 24.11.2019

Attendance: All members

Tasks:	Postponed	In progress	Done
Location for Robo Sapiens Demonstrative Matches			x

After participating at Qube Demonstrative Matches, we realized we had to prepare ourselves properly for our own. We decided we should start by finding a suitable location. During the past week, our mentor had several talks with our headmaster as our first option was the gym room in our high school. We made the decision that we will hold it on 14th December Unfortunately, the space was unavailable that

day. Considering this, our mentor recommended to hold it at the School nr 71 which was close and easy to reach by any team. In the next days, we will check it out and decide whether it is large enough and suitable for the event.

Session #4

Date: 26.11. 2019
Attendance: Alexandra, Adina, Gabi

Tasks:	Postponed	In Progress	Completed
• Starting the engineering book		X	

Since we did not have any changes to make to the robot, we thought it was a good time to start writing the engineering book, beginning with the section about rookies.

Session #5

Date: 28.11.2019
Attendance: Iulia

Tasks:	Postponed	In progress	Done
Writing Kick-Off meeting			x

Iulia also finished her document during this sprint. We didn't start any other task because we started to focus on our relationship with the rookies and the meetings with them ()

Session #6

Date: 29.11.2019
Attendance: Costina

Tasks:	Postponed	In progress	Done
Documenting Quantum demonstrative matches			X

After finishing some of the summer events, we considered it would be useful to start to write about events we participated in recently.

Sprint Retrospective

1. **Feedback**
   a. **Positive things**
      • Rookie integration

- 3 consecutive days attendance
- Deciding to host our own demonstrative competition
- Learned from mistakes

b. **Things that didn't go well**
- We did not respect our last sprint resolution (we did not organize rookie meetings)
- Our schedules did not match
- Marketing department is understaffed (only 2 people working)
- Deficient attitude towards new ideas
- Poor communication
- Destructive attitudes (useless conflicts, not supporting ideas with arguments, passive-aggressive attitudes, etc)

2. **Actions**

a. **Coordination & Communication**
- Writing down what we have to do
- Use Whatsapp for updates regarding tasks and decisions
- Avoid passing information from one person to another (announce on groups or to multiple people)
- Keeping only one Whatsapp group for the building department

Sprint 6 (30.11 – 20.12)

Working Sessions

Session #1

Date: 30.11.2019
Attendance: Matei, Iulia, Costina

Tasks:	Postponed	In progress	Done
Poster Demonstrative Matches			X

We started the tasks related to the demonstrative matches by creating a poster that can promote us on social media. Matei was guided by us that day and the poster came out really impressive and we started posting on Instagram and Facebook.

Session #2

Date: 02.12.2019
Attendance: Iulia, Alex Enache

Tasks:	Postponed	In progress	Done
Meeting with Qube			x

As it was the first demonstrative matches organized by us, we believed it would be a great idea to ask for advice from a team who already went through this type of experience. We contacted Qube team in order to help us organize our ideas. After a meeting with them, we asked for practice fields and they happily offered to give us what we need, a part from Qube and another part from Ignite, as it was also a team representing the same high school.

Session #3

Date: 03.12.2019
Attendance: All team

Tasks:	Postponed	In progress	Done
Sharing the roles for the event			x
Schedule for the event			x
List of promotional materials			x
Sending invitations for the event			x

Acknowledging the fact that we had to prepare ourselves pretty fast for the event, we did a lot of tasks that day. Dani created a form which was completed by all team and we decided what everybody should do on the day of the event. The schedule was updated and used in designs by Dani and Gabi. Moreover, Adina created a list of promotional materials which we needed for the event to be easier for us when looking for sponsors. Moreover, we also sent messages containing a Google form where the teams should sign up and a short text with the details.

Session #4

Date: 05.12.2019
Attendance: Gabi

Tasks:	Postponed	In progress	Done
Design for promotional materials			x

After creating the list, Gabi did all of the designs for the event including presentation folders, stickers and badges.

Session #5

Date: 06.12.2019
Attendance: Costina, Iulia

Tasks:	Postponed	In progress	Done

Gaining Sponsors			X

After sending a couple of mails, two sponsors answered us, a printing company and a pastry shop willing to help us. We signed the contracts and sent them the lists. We were so satisfied with the result.

Session #6

Date: 07.12.2019
Attendance: Costina, Adina

Tasks:	Postponed	In progress	Done
List of participants		X	

We waited a couple of days for the teams to answer our invitations and due to the fact that we had only one week left until the event, we decided to compose a list of teams which showed interest in participating. We considered this task as being in process because we might update it later.

Session #7

Date: 12.12.2019
Attendance: Adina, Gabi

Tasks:	Postponed	In progress	Done
List of participants			x
Diplomas			x

There were just two days until the event so we were in process of preparing our last details. We finished the list and created the diploma design. The future days were going to be full of preparing the space in order to be suitable for the demonstrative matches. (see more details at page..)

Sprint Retrospective

After the successful hosting of our demonstrative competition, these were the things we learned:
- Event announcement should be done earlier (more than 2 weeks)
- Event location should be set up at least 5 days before the actual event
- Borrowing required assets (official field, elements, etc) at least 2 weeks before - if required assets are not available, do not host event
    - The logical sequence of hosting an event should be:
        - Get location
        - Invite teams
        - Obtain sponsors
        - Obtain Fields
        - Host event

Some other resolutions were about participating in other demonstrative competitions: communication protocol, creating a calendar, etc.

After briefly discussing these facts, we had a fast brainstorming session to see what happened well and what did not. These were the results:

What went well	What went wrong
• Demo Hosting • Social-Networking platform accounts are updated and functional • The communication procedure in the workshop • We managed to solve the problems, even if we did not manage time well	• We could have done more things • Communication is still lacking • Building team was not as efficient as expected • Time management issues • Not checking what we send to printing centres

Sprint 7 (21.12 – 17.01)

Sprint Planning

Department	Task	People in charge	Task status
Building	Document Robot from before Quantum Demo	Gabi	Carried Over The Last Sprint (in progress)
General	Upgrade & Clean Google Drive	Adi	New
Marketing	Notebook Summer Events	Costina & Iulia	Carried Over The Last Sprint (to do)
Marketing	Thank sponsors (mail)	Costina	New
Programming	Write working sessions (up until current sprint)	Alex Miclea	New
Marketing	Mail possible sponsors	Iulia	New
Marketing	Eco-Friendly Event Plan	Costina & Dani	New

For this sprint we planned a few non-technical tasks. However, the planning for the technical part was much more rigorous (see at page…).

First, for this sprint we had to thank the event sponsors: Simigeria Luca and Tipografia Everest. Some of us decided that it was time to work on the technical notebook. We also thought of retrying to host the eco-friendly event. For this we had to make a clear plan.

Working Sessions

Session #1

Date: 22.12.2019
Attendance: Iulia

Tasks:	Postponed	In progress	Done
Mail possible sponsors		x	

Iulia managed to send emails to different possible sponsors just on time as we tried to reach as many companies as we could in a short period of time.

Session #2

Date: 03.01.2020

Attendance: Costina

Tasks:	Postponed	In progress	Done
Thank sponsors			x

We were really grateful for the support we received for the demo so we thanked all our sponsors, updating Gemini with the work and effort we are putting in this project.

Session #3

Date: 06.01.2020
Attendance: All team

Tasks:	Postponed	In progress	Done
Engineering Notebook Structure			x

During the Christmas break, we considered an important step while writing the engineering notebook to have a clear structure for both technical and non-technical notebook.

We all had a meeting on Discord as most of us were in different places enjoying their leisure time. We came to the current structure and we were all proud of it so we kept it until the end. We made a few changes to the one from last year (we divided the outreach events into different types so it can be easier to follow, we explained more detailed the whole process of working and added more tables).

Session #4

Date: 08.01.2020
Attendance: Costina

Tasks:	Postponed	In progress	Done
Eco-friendly Event Updated Plan			X

As this event was delayed for multiple months, we decided it would be an idea to update the plan in order to improve the concept. The first step would be to choose a location and check the availability of it. Moreover, we should contact companies related to this theme and a trainer for the technical workshop. Another important step would be to obtain suitable materials for creating a robot in the conditions mentioned in the initial plan (). The final part would be to look for sponsors for things like promotional materials or food.

Sprint Retrospective

During this sprint, the 2 main problems we encountered were the lack of efficient communication over the winter break and falling behind the schedule (read more in the technical section on).

Issue	Proposed Solutions	
	Do	Don't
Inefficient person to person communication*	When making a decision or when you need to convey information to someone, announce it to the whole group as well (keep other team members updated)	Transmit the information through other people
Harsh punishments for making a mistake	When someone makes a mistake, approach it constructively, with indulgence, try to explain rationally what was wrong & fix the problem together.	Fight over already-made mistakes Punish someone verbally for making a mistake
Little to no focus	When working on a task, ignore other stimuli as much as you can. Kindly ask any jammers to wait until you have finished your task	Interrupt someone working just to talk

Sprint 8 (18.01 - 31.01)

Sprint Planning

Department	Task	People in charge	Task status
Marketing	Mail possible sponsors	Iulia	Carried Over Previous Sprint (in progress)
Marketing	Document Robo-Sapiens Demo	Dani & Iulia	New
Marketing	Document charitable event	Alexandra Zaman	New
Marketing	Document Christmas Fair	Leea	New
Marketing	Document Costinesti Summer Camp	Matei	New
Programming	Reorganize working sessions in sprints	Alex Miclea	New
Programming	Write strategies	Alex Miclea	New
Programming	Write code explanations	Alex Postu	New
Building	Document Robot from before Quantum Demo	Gabi	Carried Over The Last Sprint (in progress)

For this sprint, we decided to start documenting as many events as we could in order to finish the Outreach section first. For the technical notebook, the programming team decided to reorganize the working sessions they documented to better fit this year's agile plan. Moreover, they had to write an explanatory section for the concepts used and for this year's strategy.

Meanwhile, Iulia continued contacting possible sponsors hoping to find someone who accepts our offers.

Working Sessions

Session #1

Date: 21.01.2020
Attendance: Costina, Iulia, Dani

Tasks:	Postponed	In progress	Done
Documenting Robo Sapiens Demo		x	
Documenting Color Talk event & Vice Interview			x

We realized we had to hurry up a little when documenting events so we can start as soon as possible to document the sprints.

Session #2

Date: 22.01.2020
Attendance: Iulia, Costina, Tuny, Alexandra, Denisa

Tasks:	Postponed	In progress	Done
Sending mails to possible sponsors			x
Planning Future Events		x	
Research summer events for rookies			x

This day offered us the perfect occasion to talk and accomplish more tasks during one working session. Firstly, we finished sending emails to nearly 30 different companies. We also started brainstorming related to future events, adding tasks in the backlog to keep track of all ideas (we added tasks like location for All the Steam Ladies 2, contacting speakers). Moreover, as we had some time left Iulia and Costina started helping the rookies in order to gather information for writing the events.

Session #3

Date: 23.01.2020
Attendance: Costina, Iulia

| Tasks:	Postponed	In progress	Done
Documenting Robo Sapiens Demo		x	
Documenting Sprint 1		x	

We considered we had most of the events written, except a few of them which we agreed on handing them over to the rookies as they were very interested in learning how to document different types of activities.

Session #4

Date: 28.01.2020
Attendance: Iulia

Tasks:	Postponed	In progress	Done
Documenting Robo Sapiens Demo		x	

This task was going to take a while because of all the details we had to add while writing. It is better to take our time when completing a task than rushing our work and not be satisfied of it.

Date: 29.01.2020
Attendance: Iulia, Alexandra

Tasks:	Postponed	In progress	Done
Documenting Charitable Event		x	

Even though we had our own tasks, we have found time to help our rookies and introduce them to elementary tips when documenting events. Iulia helped Alexandra gather information related to the charitable event so that in the next week she will make the notes turn into a coherent text.

Sprint Retrospective

During this retrospective, we assessed the degree of completion of the engineering notebook. We approximated that we had finished:

- 25% marketing (non-technical)
- 100% programming (technical)
- 80% building (technical)
- 5% CAD (technical)

So we decided to focus more on writing the notebook for the Marketing and CAD departments. For the marketing part, the outreach section was almost complete, alongside the FLL section.

A more technical-detailed description of this meeting can be found on page …

Sprint 9 (1.02 – 14.02)

Sprint Planning

Department	Task	People in charge	Task status
Programming	Write strategies	Alex Miclea	Carried Over Previous Sprint (in progress)
Marketing	Document Christmas Fair	Leea	Carried Over Previous Sprint (to do)
Marketing	Document Costinesti Summer Camp	Matei	Carried Over Previous Sprint (in progress)
Marketing	Document Robo-Sapiens Demo	Dani & Iulia	Carried Over Previous Sprint (in progress)
Building	Document Robot from before	Gabi	Carried Over The Last Sprint (in

	Quantum Demo		progress)
Marketing	Document charitable event	Alexandra Zaman	Carried Over Previous Sprint (in progress)
Marketing	Document Neurobotix Event	Alexandra Zaman	New
Marketing	List for promotional materials	Iulia	New
General	Design promotional materials	Gabi	New
General	Poster for the book donation event	Gabi	New
Marketing	Write Sprint 1 marketing	Costina	In progress

For this sprint we had to start designing promotional materials and to make a list of the necessary assets, in order to send it to possible sponsors. Costina took the task to start writing about non-technical sprints for the working sessions section.

A lot of tasks were carried over from the previous sprint, most of them related to outreach. These tasks needed to be continued in order to finish the outreach section.

Working Sessions

Session #1

Date: 03.02.2020
Attendance: Costina, Iulia

Tasks:	Postponed	In progress	Done
Documenting Sprint 1		x	
Grammar correction of past			x

Sprint 1 was still in progress by then. The rookies were sending us more and more documents so Iulia started correcting the mistakes, explaining the problems that occurred in order to improve the quality of our texts.

Session #2

Date: 10.02.2020
Attendance: Costina, Iulia, Dani, Coach

Tasks:	Postponed	In progress	Done
Documenting Robo Sapiens Demo			x
Documenting Sprint 1			x

Tasks:	Postponed	In progress	Done
Documenting Sprint 2		x	
List of possible speakers for All the Steam Ladies 2		x	

After a while, we finally finished a couple of the tasks we planned to achieve during the past sprints. Iulia and Dani completed the demo and Costina finished Sprint 1 and started Sprint 2. Another important aspect was to create a list of possible speakers for our upcoming event. We sent invitations to some speakers from the last edition and our coach offered to come and to invite a few more female speakers. We became really excited and started planning ahead more details.

Session #3

Date: 11.02.2020
Attendance: All team

Tasks:	Postponed	In progress	Done
List of volunteers and official team			x
Documenting Summer Marketing Department Meetings		x	

For the engineering notebook, we must create the team section. Due to this, we arranged a meeting where all the team was present so we can make a decision together related to who will be in the official team and which rookies will accompany us as volunteers. During the past season, many of us showed interest and passion in our project. We came to the conclusion quickly and were satisfied with the result. Meanwhile, Iulia started documenting summer meetings as they had an important role in our development as a department.

Session #4

Date: 12.02.2020
Attendance: Costina, Iulia

Tasks	Postponed	In progress	Done
List of promotional materials for the competition			x
Documenting Sprint 2		x	

One of the main tasks that had to be accomplished this sprint was the list of promotional materials. We discussed and agreed on more objects such as stickers, roll-up, magnets and many more. We were hoping to obtain a sponsorship for at least a part of them. Meanwhile, Costina continued to write Sprint 2.

Sprint Retrospective

The first problem discussed in this retrospective was about the **lack of focus and efficient work**. We deduced that this problem was generated by other members of the team, who had nothing to do, that were distracting the people who were working.

Proposed solutions:

- *Leave the workshop if you have nothing to do*
- *Keep eachother responsible*
- *Stop chattering in the workshop*

The marketing department had much more work to do than they can handle and **needed other departments' help**.

We needed to start working on **interviews** and to add the **evolution of the robot** in the technical part of the notebook.

Another issue that we discovered was the lack of videos with the robot. We agreed on filming the robot during programming sessions.

Sprint 10 (15.02 – 21.02)

Sprint Planning

Dep artment	Task	People in charge	Task status
Marketing	Write Sprint 2 marketing	Costina	In progress
General	Poster for the book donation event	Gabi	Carried Over Previous Sprint (to do)
Marketing	Business Plan Section	Iulia & Costina	New
Marketing	Team Section	Iulia	New
Marketing	'All The Steam Ladies' location	Costina	New
Marketing	'All The Steam Ladies' Contact speakers	Costina & Coach	In progress
General	Prepare interviews	Coach	New
Marketing	Document Parklake event	Alexandra Zaman	New
General	Design promotional materials *& uniforms*	Gabi	Blocked

For this sprint, we took on some important and time-consuming tasks, such as the business plan and the team section. In order to write these parts, we had to study last year's notebook so we keep a coherent idea throughout the years.

Besides this, we also started tasks related to organizing the 'All the stem ladies' event (read more on page …). We had to receive approval from our headmaster to host it in 'The change hub' and contact some speakers in order to host the event.

The interviews were also an important aspect that we had to take into consideration when we planned these tasks for this sprint. We arranged a meeting with our English teacher to help us with ideas for the speech.

Working Sessions

Session #1

Date: 17.02.2020
Attendance: Costina, Gabi

Tasks:	Postponed	In progress	Done
Documenting Sprint 2		x	
T-shirt design		x	

By now, we still had several problems to solve. Costina was still writing sprint 2, willing to finish it as soon as possible. In the same day, Gabi tried to create a design for our *uniforms* taking in consideration as many opinions and preferences as possible. We also realized we encountered several difficulties related to our lack of people working on design and promotional materials.

Session #2

Date: 19.02.2020
Attendance: Costina

Tasks:	Postponed	In progress	Done
Documenting Sprint 2			x

After she finished gathering all the information, Costina finished sprint 2.

Session #3

Date: 20.02.2020
Attendance: Costina, Alexandra, Coach

Tasks:	Postponed	In progress	Done
Documenting Sprint 3		x	
Documenting Parklake Event			x
Contact Speakers for All the Steam Ladies 2			x

Before the retrospective, the marketing department still had some tasks which should have been completed. Regarding the engineering notebook, Costina started documenting sprint 3 by creating the table for planning and Alexandra started and also finished the Parklake Event as she gathered all the information in the last few days. In addition, we had just two more weeks until All the First Steam Ladies 2 so our coach helped us in finding 2 more speakers, people who showed interest in our project. Although we consider this task as "Done", we still talked about that daily hoping we can reach out to more people interested in STEAM activities.

Sprint Retrospective

During this sprint, we encountered mainly technical issues. They are better explained on page …. The completion of the non-technical tasks went mainly as expected.

Sprint 11 (22.02 – 28.02)

Working Sessions

Session #1

Date: 24.02.2020
Attendance: All team

Tasks:	Postponed	In progress	Done
Preparing Interview for competition		x	
Team Section		x	

As we were quite pressured by time and we found a free day, we decided to have a meeting in order to prepare for the interview. We analysed our key elements, our improvement and some milestones we reached in the past season. The task was not finished, but we had a start. Meanwhile, Iulia started creating the team section of our notebook.

Session #2

Date: 25.02.2020
Attendance: Costina, Iulia

Tasks:	Postponed	In progress	Done
Documenting Sprint 3		x	
Team Section		x	

Today, we focused mainly on updating and completing our tasks. We left a few details to be added in the further days.

Session #3

Date: 26.02.2020
Attendance: Costina, Iulia, Gabi

Tasks:	Postponed	In progress	Done
Documenting Sprint 3			x
Team Section		x	
Poster for the book donation event			x

Costina completed Sprint 3 and, besides that, decided with Iulia to split the team section in two in order to finish more quickly. Meanwhile, Gabi started creating the design for the book donation event so that we could promote it on social media and in our high school.

Session #4

Date**:** 27.02.2020
Attendance**:** Iulia, Costina, Daniel, Tuny

Deptartment	Tasks:	Postponed	In Progress	Completed
Marketing	Work on writing about sprints 5, 6 & 7			X
	Write Team Section		X	

As Daniel began writing about the sprints 5, 6 and 7, Iulia and Costina resumed work on the Team Section of the Non-Technical notebook. The only part of the team section left to be done was the team members' descriptions.

Sprint 12 (29.02 – 6.03)

Working Sessions

Session #1

Date: 02.03.2020
Attendance: Iulia, Costina, Gabi

Tasks:	Postponed	In progress	Done
Document the meetings with rookies		x	
Sponsorship mails		x	
All the Steam Ladies 2 Poster Design			x
Contact speakers for event			x

A situation which we face really often when we are organising an event is when we have a few more days left and we have to simultaneously do multiple tasks related or not to the event. We considered this day as really productive as we managed to write in the notebook, send mails and create a poster at the same time. Gabi also announced to us about a new speaker he contacted for our event and we were so glad and looking forward to meeting her. Moreover, we considered the team section as "done" due to only having to add some descriptions of our volunteers.

Session #2

Date: 03.03.2020
Attendance: Costina, Iulia

Tasks:	Postponed	In progress	Done
Documenting Meetings with Rookies		x	
Updating our social media websites			x

As often as possible we find it really important to update our social media websites in order to attract more and more people's interest. Our team was quite active and involved in various activities from demonstrative matches to creating our own events by which we spread the FIRST spirit in our society. As for the engineering notebook, Iulia took care to document all our ideas.

Session #3

Date: 04.03.2020
Attendance: Costina, Iulia

Tasks:	Postponed	In progress	Done
Documenting Meetings with Rookies		x	
Sending mails to possible sponsors			x

We kindly received a positive response from a printing center, 2mdigital, who showed interest in a further collaboration. This answer made us more aware of the situation as we needed to hurry up a little with all of the designs for the promotional materials. Meanwhile, Iulia was still writing on rookies` sessions,

Session #4

Date: 05.03.2020

Attendance: Iulia, Costina, Daniel, Danilov

Dept.:	Tasks:	Postponed	In Progress	Completed
Marketing	Work on writing the framework of sprints 9, 10			x
	Write on rookies' sessions			x
	Write the working sessions for sprint 4, 5			x
Building	Write working sessions		x	

We accomplished several tasks that day and we were really glad about that. Our engineering notebook became a priority and we had to solve as many things as possible in a short matter of time. Daniel offered to help and added the framework for sprints 9&10 so Costina can write the sprints faster. The results were observed quickly as on the same day she finished writing both sprints 4&5. Iulia also finished her task and Danilov was writing the working sessions for the technical notebook.

Training and Integrating Rookies

This year we decided that if we were to continue our legacy we had to garner as many rookies as possible. This being said, as mentioned in the sustainability plan, we chose to hold presentations in every class in our high school (exception being the seniors as they do not have the time to be involved in the team).

We were pleasantly surprised to see that nearly 40 people wished to be part of the marketing department. Unfortunately, this meant that a lot of them had to go. In spite of this fact, it meant that the ones that remained were willing to dedicate time and energy into the development of this project.

Moreover, after we implemented the Agile Approach, we decided that maybe it was time we changed the way we accepted and integrated rookies in the team (see sustainability plan at page IV-28).

Training Session #1 – 27.09.2019 – The Introductory Talk

For the first session we organized a general meeting with all the possible recruits in order to present them the general activities of the department. We talked about writing the journal, organizing events, promoting the team and obtaining sponsors. Moreover, we presented them with the FTC values and this years' theme, ''Skystone''.

After a general introduction, we talked about how the department was to be split into 4 sub-departments: events, journal, editing and photography. The rookies then completed a google form that checked-in with their interests and abilities that would help us decide which sub-department they would work in. We also established together the next meeting, which was to be on Thursday.

We hoped that this way of dealing with the newbies would offer them the sense of direction that we felt they lacked in the last years and therefore make them more productive and involved in the activities of the team.

Expected outcome	Actual outcome	What did we learn
We expected that all the rookies would be present at the meeting and interested in this activity.	Just half of them came to the meeting, the ones that were really interested.	Always make sure that most of the people can come to the meeting when establishing it.

Training Session #2 - 03.10.2019

After last weeks' introductory talk, we decided it was time to talk with the newbies about organizing events. We presented them with the general steps of an event:

- Brainstorming the idea
- Finding a location
- Obtaining sponsors
- Promoting the event
- Logistics

After we decided to change the former ways, we accepted newbies, we figured it was time we gave them a task. This involved creating a ''Pseudo-Event'' by sticking to the already explained plan, meaning they just had to imagine all the steps to actually organizing an event.

We were surprised to see that after just one week nearly half the possible department members did not show up to the meeting, some because of other activities some because of lack of time. We figured it was in our best interest that the ones that did not intend to be involved would leave on their own.

Expected outcome	Actual outcome	What did we learn
The rookies would learn about the concept of organising an event.	They were actually involved in the discussion and really excited about the idea.	We should slightly improve our approach regarding the freshmen.

Training Session #3 - 23.10.2019

Learning from the last sessions' mistakes, we announced the meeting a week before and we sent them daily reminders in order to make sure the rookies knew to come. Most of them told us they couldn't make it to the meeting and some even notified us that they couldn't be involved in the robotics team anymore. This means that the number of the newbies reduced considerably over an extremely short period of time

However, the ones that came had a full training on writing the non-technical notebook and documenting events or meetings. As they were the most qualified for this, being in the team for over 2 years, Ana and Pala were tasked with running the rookies' meeting.

Expected outcome	Actual outcome	What did we learn
Learning at least the minimum about writing the non-technical notebook.	They were familiarized with the concept but they were unprepared to accomplish an actual task.	Managing the rookies might be a challenge for the marketing department.

Training Session #4 - 20.11.2019

Having taken a pause from training sessions, we realized our approach to integrating freshmen was not beneficial at all to our team. Almost all of the people became disinterested in the activity and announced to us that they would no longer be involved. This was also due to the fact that in the passing month we did not pay attention to the rookies as we also had some problems in the department itself.

In the light of the above, we decided to implement the method ''Learn by doing''. This meant that instead of giving the freshmen purely theoretical lessons, we would have a more practical approach to training them. They would be given tasks to complete on their own, with the knowledge they have acquired up to that moment. After finishing the tasks, we would discuss and try to explain anything they could improve. If they needed any assistance with their work, we would gladly help them overcome the obstacles.

This being said, we had a meeting with the remaining freshmen in which we apologised for our indifference and explained to them the situation. They were really understanding and ready to be again involved in our activities. Moreover, we decided that we would have meetings every Wednesday, as they still needed our guidance.

Expected outcome	Actual outcome	What did we learn
All the remaining freshmen would come and they would still want to be part of the team.	Only some of the freshmen came to the meeting.	We should not expect them to have the same schedule as we do.

Training Session #5 - 27.11.2019

This was the first meeting when we implemented the new approach. We firstly presented the freshmen the events we meant to organize in the near future. As said above, we just integrated them directly in our future plans. This meant that after the short presentation, each had to choose the task they were most interested in. Some examples include creating a poster for the demo, one for the Christmas charity event and even writing a meeting.

Expected outcome	Actual outcome	What did we learn
We would update the freshmen regarding the teams' activities and they would learn something new about the team.	They were excited about the tasks and we managed to tell them everything they needed to know about the upcoming events.	Communication is key and the new approach is working.

Training session #6 - 02.12.2019

At this point, the meeting only consisted of checking the freshmen's tasks and giving feedback. They had done nearly everything right and so we just checked in with them and gave them improvement advice. Moreover, we discussed the tasks for the next week.

Expected outcome	Actual outcome	What did we learn
We would discuss the previous tasks with the freshmen and give them feedback.	This meeting, we managed to do everything we set out to.	''Learn by doing" is considerably more efficient than the previous strategy.

Training session #7 - 09.12.2019

During this meeting we approached various subjects regarding the freshmen. After talking about the previous tasks, we talked about the upcoming Demo, which was organized by us (). The freshmen were invited to be volunteers at the event and also help with the preparations. Moreover, we discussed the prospect of obtaining sponsors, for both future events and team necessities.

At this point, many of the freshmen that entered the team decided to leave, only the most dedicated ones remaining. We figured the rookies had no need for training anymore. This meant we would no longer have official meetings but they would be welcomed to get involved in the activities of the team and maybe even become an official member, if they put in enough effort.

Expected outcome	Actual outcome	What did we learn
We would welcome numerous rookies into the team.	Only a few remained, but they were the most dedicated ones.	Inclusion and showing appreciation are very important in generating new members.

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