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Process report
Group 6

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Information and Communication Technology Engineering
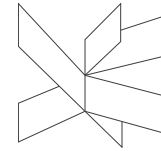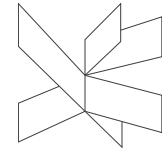
1st semester

December 2017

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1 Group Description

1.1 Cultural background

Our group consists of five persons: two Slovaks: Michaela and Matej, two Poles: Daniela and Michał and one Spaniard: Remedios. We started as a four-member True Slav Group and increased in number in the end of November by being joined by Reme and becoming an Almost True Slav Group. Even though it may seem as if Poland and Slovakia are very similar due to the fact that they are in a short distance from each other, it turns out that Poland and Spain are closer in the cultural aspect (Hofstede Insights, 2017). It is shown on the figure 1:
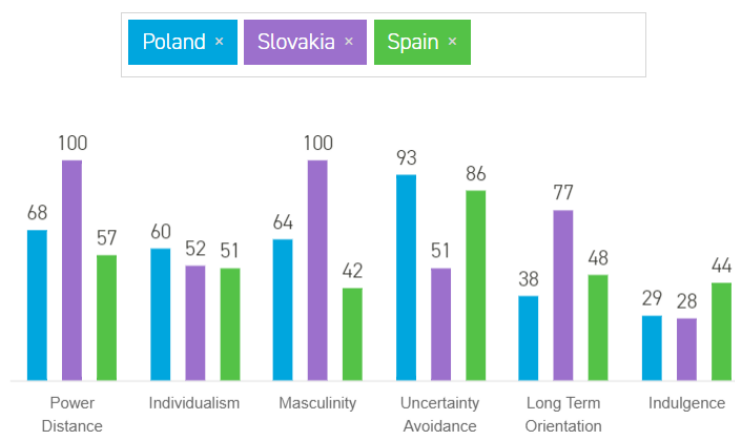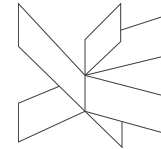

Figure 1 - Country comparison

1.2 Belbin roles

What make our group well-cooperating and well-balanced are our Belbin roles. Having taken the Team Role Inventory Test (Studynet 2017), we compared the results with our experience, basing on assignment work in class, the work on the first stadium on the Semester Project and the team roles descriptions (Belbin, 2012). What we found out is as follows (Table 1):
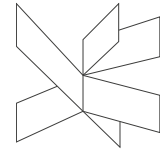
Member/ Belbin roles	The Team Role Inventory Test	The reality
Daniela	Shaper, plant	Shaper, team worker, plant
Michaela	Plant, everything else balanced	Plant, everything else balanced
Remedios	Team worker, resource investigator	Team worker, resource investigator
Matej	Team worker, complete finisher, implementer	Team worker, complete finisher, monitor evaluator
Michał	Coordinator, resource investigator, complete finisher	Coordinator, complete finisher, specialist (in case of IT)

Table 1 - Belbin roles

As the table shows, we are a well-balanced group, containing almost every possible team role and without many repetitions. Knowing our Belbin roles helped us to understand our roles in the group and some of our behaviours. To take an example, knowing that shapers and coordinators usually argue provided us the reason of the arguments between Michał and Daniela.

The importance of being well-balanced is that everyone had an unique function they were executing and we didn't lack in any, i.e. no one had to perform a role not suiting him/her.

Michał, because he is a coordinator and specialist, was the one coordinating the work: distributing tasks, the one with whom the way of implementing was consulted and the one who helped when anyone had a problem. He was also keen on gaining new knowledge and using unconventional and more advanced ways of solving tasks and overcoming difficulties. Together with Matej he is also a complete finisher, what could have been noticed by how the boys paid attention to details, searched and fixed bugs with determination and were eager to double-check everything one thousand times before hand ins. Matej being a monitor evaluator had those practices even stronger

and needed time while making his mind up but his decisions and ideas were always thoughtful.

A remarkable characteristic was also the fact that three members: Matej, Remedios and Daniela are team workers. They were more keen on talking while working and the social aspects (e.x. bonding together, spending time after working), whereas Michał and Michaela seemed a bit annoyed by it and may have preferred to work alone in silence without being disturbed. However the team workers were also working on resolving problems by encouraging to talk about them. Remedios is also a resource investigator, what was very noticeable. She is an example of a classic Spanish enthusiastic extravert. She was the one always around people, suggesting dinners after work, knowing on what stages other groups are and using her contact with people from other semesters. As Michaela's top role was plant, she preferred to work alone. She was also the artistic soul in our group and took care of all the visual aspects. On the other hand Daniela being a plant externalized it in a different way. She would challenge most of Michał's ideas, because she had her own thought about how to do particular tasks. It was escalated by the fact that they were a coordinator and a shaper. However they always eventually came to agreement and chose the option with better arguments, so the disagreements were constructive. What else could be seen of a shaper in Daniela was her pushing herself and others and suggesting to work as much and as productively as possible. It was the case of another dispute, as half of the group wanted to start work the latest at 10 and the other half (still before Remedios joined) opted for the earliest at 13. It was resolved by having half the group joining later.
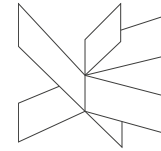
2 Project Initiation

2.1 Risk assessments

Having stated the Belbin roles, we entered the initiation part of the project, containing creating risk assessments, formulating a group contract and writing the project description. The risk assessments are presented in the table below (Table 2):

RISK	PROBABILITY	IMPACT	EFFECT	RISK REDUCTION ACTIONS	RESPONSE
Group member's illness	Medium	Medium	Time	Divide group work in small tasks	Redistribute group work
Technical breakdown	Medium	Medium	Time, completion of key tasks	Work with reliable technical equipment, Backup important files	Replace with alternative equipment
Group member's sabotage	Low	Medium	Time, concord among group members	Team-buildings	Redistribute group work
Unrealistic planning and scheduling	High	High	Time, full project completion	Detailed pre-analysis of time schedule	Postpone deadline

Table 2 - Risk assessment

The reason we made them, was to first of all prevent them from occurring and secondly to be prepared and know how to handle the situation, in the event that any of them occurred. However, other risks came across, to take an example getting a new member. Fortunately it didn't cause any troubles and just made our group stronger. More of the risks we came across are described further in the document.

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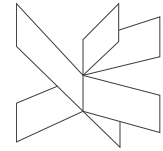
2.2 Group contract

The next task we focused at was formulating the group contract (see appendix 1). It was important to state the ground rules and prevent procedural conflicts. It also helped us to realize what we should do to stay motivated and how to create a friendly work environment. (Developed further in the document)
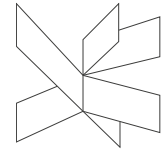
3   Project Description

The last part was writing the project description (see appendix 2). It was the first 'real' project assignment, i.e. it was the first assignment truly concerning the subject of the project. This was the moment to start discovering our working methods and finding out what works for us the best. From the very beginning we were attaching a great importance to group work. What worked out very well for us was to gather together and brainstorm ideas for the background description, as well as creating the general structure of the text. However, we had to have one person writing it and another taking care of the technical parts and layout. The final point was having it checked by everyone and sharing our opinions on each part. Having received the feedback, we had everyone together correcting the content of the document and one person cutting the background description. Writing the project description did not only teach us how to write a good one in the future (we need to focus on narrowing the information while stepping into a new part), but also it enabled us to start establishing our working methods.
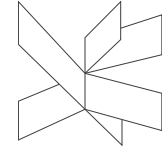
4 Project Execution

## 4.1 Establishing the working methods, motivation and resolving conflicts

Following the initiation phase was the project execution period. This was when we established our final working methods. Basing on what we've learned in the previous stage, they were determined as follows:

1) Gather ideas and formulate the main goals and overall structure together,
2) Divide the work for groups consisting of 1-3 persons,
3) Having everything checked by everyone, i.e. leaving feedback and discussing about individual parts.

Even though the work was divided, we were still meeting together and working at one place. It was one of the undertaken actions to keep us motivated. In order to be productive, staying motivated is required. Beneficial to having a friendly environment, we were meeting together in one of our apartments, putting on music that everyone would enjoy and bringing snacks. We also paid attention to creating and maintaining good relationships with each other. Examples of undertaken actions concerning this point were obeying the rules determined in the group contract, cooking together during our meetings and making parties/ dinners together beyond our working hours. However, the most important factor was talking about our problems before they turned into conflicts. Conflicts and serious disagreements are ones of the most jeopardizing risks, about which we have forgotten. Nevertheless not having it in our risk assessment, we were taking up risk reduction actions, i.e. being honest with each other and talking about problems. As a result, all of our conflicts were constructive and became resolved only by talking about them.

4.2 Technical tools

In the project execution phase we were also introduced to technical tools helpful in working in groups. We were using Trello in due to organize work, know what needs to be done and what have already been done. Another tool was Git, which not only has eased working at the same time and making the system consistent, but also was the solution for our 'technical breakdown' risk. We went for Google docs while working and checking text documents, with the same reason as using Git.
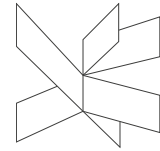
4.3 Daily log

Our daily log was as follows:

→ Project description: 25.09. -12.10. + 26.10. -31.10. + 1.12.

→ Requirements: 12.10.-23.12

→ Use case model: 12.10.-16.12

→ Activity diagrams: 16.11.-23.12 + 13.12

→ Sequence diagram: 16.12.

→ Class diagrams: 23.11.-25.12

→ Implementing the model: 30.11.-5.12.

→ Implementing GUI: 30.11.-8.12.

→ Implementing controller (connecting the model and GUI): 10.12. – 15.12.

→ Testing: 10.12-17.12.

→ Process report: 6.12.-16.12.

→ Project report: 28.11. + 7.12. + 16.12-19.12.

→ User manual: 17.12-18.12

→ Meetings with supervisors: 7.12. (two meetings, feedback on implementation in java and tips for reports), later questions regarding the reports via email

4.4 List of tasks and responsibilities

The list of tasks and responsibilities was stated as follows:

→ Project description:
  o gathering ideas, creating general structure: everyone
  o background description: Daniela
  o rest: Michał

→ Requirements: everyone

→ Use case model and activity diagrams: everyone

→ Sequence diagram: Daniela

→ Class diagrams:
  o Model: Daniela
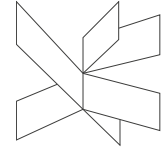
- o GUI: Michaela
- o Whole system: Michał
- → Implementing the model: Matej and Daniela with Michał's help
- → Implementing GUI: Michaela and Michał
- → Implementing controller: Michał
- → Process report: Daniela and Remedios
- → Project report:
    - o requirements: Matej
    - o analysis: Matej
    - o design: Michał
    - o implementation: Michał
    - o test: Daniela and Michał
    - o result and discussion: Matej
    - o conclusion: Daniela
    - o project future: Daniela
    - o abstract: Daniela
    - o correcting: Daniela and Michał
- → User manual: Remedios
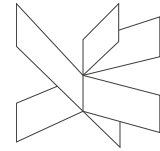
5   Personal Reflections

5.1   Michał

For me, first semester project was a completely new experience. I've been working on many group projects before, however none of them was as demanding for me as SEP1. At the beginning I felt quite confident about how our work will proceed, but at some point, I lost track of it. During last holidays I've been working in a IT company on a project of much bigger scope, and this experience helped me a lot during SEP1, especially with work methodology, analysis and design. I had a greater knowledge, therefore the rest of the group accepted me as a coordinator and specialist, which covered with my Belbin roles. I was the one who was distributing tasks during implementation part, and every decision made in code was consulted with me. I felt a bit under pressure, and responsible for performance of our system. At some point I've even felt a bit overwhelmed by my responsibilities, especially when Remedios joined our group and we were in the middle of implementation process. We had our work divided between developing model and GUI and I had to introduce her to our project, show her our work methodology (Trello, Git) and assign her to tasks adjusted to her skills. At the same time, I was coordinating others work, which resulted in that I couldn't focus on my own tasks, which led to unequal work speed in different parts, and unbalanced task distribution, which caused some small arguments about work assignment. Moreover, I was demanding from my team mates and encouraging them to learn and use more advanced programming technics and code discipline. At the beginning they were not very likely to use things beyond basics, but at the end they were convinced to advantages of this approach. Furthermore, they haven't kicked me out of the team, so I can be even more demanding during the next project. Another thing was that some of the members were looking up to me, because of my experience and placed me higher than them. My point of view was different and I was trying to negate this by bringing equality in making decisions and also assigning them to responsible task, to show them how much they can do. Last thing is work methodology which should

be improved. We were using Git extensively and it helped us a lot, however we should plan more precisely in Trello and use it much more. In conclusion, I want to say, that this project improved my team work and communication skills and helped me develop my team role.

5.2 Remedios

In this semester project not only have I learnt new concepts about programming, but also I have improved my skills on working in a group.

I started the semester project with a group where the relationships between the members were not consistent to work in a full time work as this project requires. During this period I learnt how to speak to introvert people and I realized the importance of having a good relationship with the group you are working with.

In November, my project group could not handle the difficulties and the amount of work that we had to do, so we decided to split the group, which was a hard decision at the beginning but the best option for both of us. After this, I had to find a new group, so I decided to ask the group with more confidence I had, if I could join them, group number 6. They accepted me, and I started to learn from all of them, from new methods in JAVA to how to deal with GUI.

With the new group, we spent a lot of time together such as whole days working, discussing and cooking. I had the chance to get to know them better and I felt free to ask any kind of question.

If I had to change something I would say that we should split the work in another way, there were some times when I finished my part and I could not do anything else because everybody had a function to do. That made me felt a bit useless. It is true that I do not have a lot of knowledge in programming, but I learn fast so maybe I could take more part in the implementation.

To sum up, I think that the most important thing to work in groups is without doubt the attitude between the members and personally. I think that was our base to spend that much hours working together and to finish the project.

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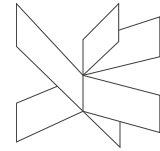
5.3 Michaela

This was my first experience with international group work. In my opinion, we were a well-organized group. Every one of us had a specific role. We were separating our assignments and every group member took responsibility for his/her own part. In this way we could put more effort to specific parts. This approach is better for me, however it has some negative aspects. One of them is that I am not improving in other aspects. In semester project I focused on GUI. As a plant, I could use more of my creativity and with Michał's help I was able to do a big part of it. I can say that thanks Michał we are better and we are trying to make more complex things, which are demanding. Therefore I can say that work with experienced people isn't always easy. In conclusion I want to say that I wouldn't make big changes in our group. We were able to complete assignments and solve problems. In next project I would suggest that we should discuss more about what we are doing and have bigger overview of the whole project. Furthermore, I would like to be helpful in other parts of project and put more interest in the implementation. Moreover, I would like to continue with work separately, because lately we were disturbing ourselves in group work, and if we want to work together we should stay more focused on assignment.

5.4 Matej

Choosing future co-workers can be a very big risk that can play an important role in semester project, because you cannot know what you can expect from strange persons. I and Michał got to know each other during introduction days and we decided to work together in semester project, therefore we needed to find other two persons. As Michał and Daniela were mates from secondary school and I with Miska had become friends before semester started, we betted on security and not on risk in case of choosing right persons to our group. I insisted a lot on this selection, since I am a professional chess player who is always thinking forehead. Finally, Daniela and Miska
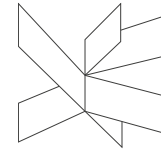
joined our group. My intuition that girls have those personal traits that we were missing turned out to be correct after a few days, when we found out our Belbin roles. That was the moment when I started to feel confident about our group. There was only one role missing – contact with the outside. I noticed it when we accepted Reme in our group. After her joining our group we became an even more balanced group. However, there is a reason why semester groups should consist of 3-4 students. I found it difficult to arrange meetings in a 5 member group. Moreover when we increased in number we were not as productive as we used to be. As for knowledge I gained from this project work, I have to confess that this experience was something new for me as the education in my country is not really based on practice and work in group. I found out that this is something that fits me better than individual work. In this project I considered myself as a team worker as I was always on the side of the group which preferred working together. In most cases, I couldn't concentrate at my work, when we were working separately, because of plenty of other responsibilities. Therefore, group work helped me to concentrate and do only tasks related to the project. However, I found also difficulties in project work. I had a habit to do every task to perfectly detailed extent, but as in this project we divided work to each member and so I hadn't control on everything. The result was that I had to suppress my perfectionism in order to not spend valuable time on every detail. Regarding to social climate in our group I was more than satisfied as we were frank with each other and as we did some soirees to make our relationships stronger. I figured out that we avoided social loafing in our group. Every member took this project seriously and made every effort to do the best and to motivate the others that came out as very important issue in this project group. To sum up, the knowledge I gained from this project group work is undeniable. I found out my strengths as well as my weaknesses. I am able to deal with almost any kind of problem that might occur. For my future group work I would definitely divide and organize the given tasks in a more efficient way.
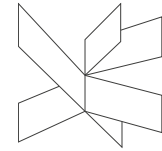
5.5 Daniela

During working on this project I gained not only knowledge regarding programming and analysing and designing a system, but also concerning group work. I realized that for me the best option is to be at one place with other people while working, because it makes it easier for me to start and stay motivated. On the other side, being with people means sometimes being disturbed a lot and having too much talk going on. That's why for future notice I would prefer to either agree that while meetings we try to stay focused for most of the time (with some short breaks of course and some relaxing talks to keep a good atmosphere) or to meet in smaller groups. However I believe that deciding about everything in a group is a really good idea. This way the system is from the beginning to the end consistent and everyone knows how it will look like and how it will be done. Not only deciding with other people is beneficial, but also dividing work for smaller groups. Thinking together helps in solving difficult problems and coming up with the best ideas for solving tasks. Nevertheless, I am an active learner and if I don't either type or dictate, I become lost in the code quickly. In my case the best option would be to do the thinking part with someone and then code alone. Another advice would be to know something on every field of the project. Due to the fact, that I wasn't confident in GUI, I couldn't help in that area. It was also a point on which we have spent too much time, so in the future, for bigger parts like this was, it would be better to either assign more people or not a specialist, who can't focus on his work, because of helping other people with their tasks. Moreover it could be nice to state in the group contract a meeting hour for the project period to avoid conflicts in this matter later. I found out that the best time schedule for me is working in the morning, then having a one or two hour long break with relaxing, doing some sports, not working and then continuing in the afternoon till the evening. In my opinion meeting after 12 is a bit of wasting time. What I would like to keep is being organized and knowing exactly who does what. It helps to be motivated and builds a group-awareness. In this case I would also like to use more Trello during the following project. It also would have helped while being away. However, I had a feeling that some people stopped working after we went home (for different reasons). So for next semester I think a better idea would be to stay longer in Denmark. What I really loved was that we were not only a
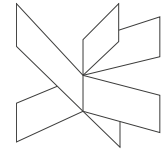
semester project group, but we became very good friends as well. Personal relations and a good atmosphere are some of the key values in being productive and motivated. I also liked that everyone was welcome to express their opinion/ idea. This lead only to constructive conflicts, which resolved in having a better system. Furthermore having Michał in our group was a great help as well. We could always ask him when in doubt and he always offered a helping hand, no matter how much annoying we were. Being in such a group helped me also to understand the Belbin roles better and discover my own role in the group, as well as becoming aware of the fact that having a well-balanced group is a blessing.

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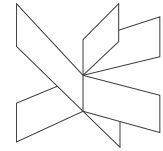
6 Conclusions

Bearing in mind personal reflections of each group member, we performed very good as a group. Most of us appreciated the atmosphere and the built relations. However, there were some enumerated aspects in which we could have performed better. Basing on them we have created a list of advices for the next semester project:

→ Divide and organise work in a more efficient way (we could talk about each part longer, spend more time analysing it and stating how big it is and how time consuming, we should also remember not to assign our specialist to the biggest part)

→ Everyone should have an overview of the whole project (we should discuss more about who is doing what and how)

→ The work should be divided and we should either work separately on it (or in smaller groups) or stay focused

→ Be more organised, use more Trello

→ State the meeting hour for the semester project period in the group contract, come to a collaboration, not a compromise

→ Stay longer during the semester project period in Denmark (or have it stated in the contract that it is still study period and everyone has to work daily)
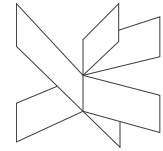
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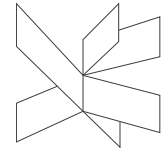
Appendices

Appendix 1: Group Contract

Appendix 2: Project Description