**Process Report SEP4**

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# 1 Introduction

This papper is meant to inform both the team and the reader about how the planned activities worked out and how the collaboration and workflow went in our group for this semester.

For this project, the topic for this assignment was given by the school and for the first time due to the complexity had us work in a group of 10 people.

The group itself was split into 3 smaller divisions, each sub-group focusing on a branch of the given assignment.

The chosen working method for this project was SCRUM since it was the ideal way of managing the team in an agile way.

The planning was implemented up until the design stage of the project, where at that stage each subgroup had to work independently from that point on having the freedom to make decisions by themselves.

However, communication with the other two groups had to pe kept at all time since the 3 groups had to merge together at the end to produce a working system.

The entire SEP group’s activities were organized into Sprints. The Sprints where established to take place each week on a Thursday starting from 8:20 AM and were mandatory to attend since they provide crucial information about the stage of the project and how the individual tasks where assigned.

The scheduled meetings where given an estimated time of around 8 hours sometimes lasting less due to group members having to leave early or lasting longer due to falling behind schedule.

Each of the Sprints had their own set of requirements and goals which had to be completed before the next Sprint started since not completing them would have consequences on our workflow.

To better organize ourselves in the give time period, we decided to split and group our tasks into a timeline in form of a Gantt Chart, having been useful and efficient in the past semesters.

The chart worked as a guideline for the group and contained the starting date and point of the project and concluded with the end date and point.

A journal or logbook was made, and it contained a recap of what happened during the working days for this assignment.

Towards the end of the project, we encountered difficulties regarding the project’s workflow due to some group members not doing their job and sabotaging the rest of the teams.

This occurrence forced us to seek help from the project’s supervisors which was given and after certain changes where made, the project continued onwards.

The scheduled meetings went well in the beginning of the project but started to deteriorate as we advance further on.

Workflow was kept at a constant pace in the beginning of the report but started to diminish upon reaching the middle of our project.

# 2 Group Description

Our group was made up initially of 10 members, two of them did not show up for the scheduled meetings, so they have not been mentioned on the cover of this report or in this chapter.

In this chapter the group members will be described based on their subgroup.

## 2.1 Embedded engineering

Alexandru Dima Mircea

Liviu Lesan

Ionut Boitan

## 2.2 Database engineering

Alexandru Ciornea

Alexandru Mihai Serb

Raul Pologea

## 2.3 Android development

Alexandru Vieru

Alexandru has a previous education in Civil Engineering and has worked in the field of construction for 3 years. During this time, he has gained experience on how to meet deadlines and how to organize a team to reach certain set goals.

After this period, he has moved to Denmark and finished an education in IT Network and Electronics Technology at Business Academy Arhus. During this time, he has gained experience and knowledge on how to write reports in the IT field.

Currently he is enrolled in the ICT education at VIA University to pursue a degree in software development.

He is considered to have high standards when it comes to working for a project and considers himself to be a good team player.

Hard work, determination and never give up once you reach obstacles are his creed.

Rares Dumitru Bunea

# 3 Project Initiation

This chapter will focus on discussing the topic that has been give to this project team from our school. The given assignment focuses on 3 major aspects.

Retrieve sensor data from a room which is in our school.

Send this data to a storage unit using the network provided by our supervisors.

Retrieve the data and make it so that it can be available for a give user that uses an android application.

The group was formed by our supervisors and was not free of choice and the group members where merged from multiple ICT classes.

Our planning for this project went well, since we implemented an agile method called SCRUM for the give assignment. This helped us to break down the time allocated in multiple sprints which were held weekly and each of them had a set of assigned mandatory tasks which had to be completed before the next sprint started.

This gave us a sense of purpose and most where motivated to complete the given tasks to reach the next steps for this project.

Although this sounds perfect in theory most times things do not go as well as the are planned to. Many times, we struggled with completing certain tasks which proved to be more difficult to solve than expected.

Some of these issues where solved at the end while others where not able to complete on time due to a certain team not doing what they promised and signed up to do.

Most of the tasks where accomplished thanks to a strict and well organized regiment which included a time schedule and also a risk assessment document which was more to inform the people participating in this project about the given tasks and their set completion time and also about the risks involved if they do not put the required work into them.

A group contract was formed in which we all agreed with the written set of rules and the consequences that will occur if the rules will be broken.

Having a logbook helped us keep track of what happened during the sprint meetings and retrospective and helped us keep track on which task we were currently working on.

A Burndown Chart has also been created to help the teams to better understand what the estimated time for certain processes is and what they need to do for everything to go as planned.

As mentioned before, this works fine in theory but in practice it’s a different story.

While the estimated time had plausible values, the actual time spend on certain tasks took longer than expected thus resulting in the group falling behind schedule.

# 4 Project Description

The problem statement for this project was created based on the case we received from the school. Our costumer required 3 tasks which where critical to accomplish.

First task was to configure a device that would get CO2,humidity and temperature readings from a room inside our school.

The second step was to store these readings into a database which resided on a server on one of the school’s networks.

Lastly, we were asked to create an android application with which users could connect to the database and retrieve the readings which were stored.

Once all the given tasks where clear, we moved forward and created a customer description to better understand what their actual needs and expectations are for this project.

In the delimitation chapter of our problem statement we chose the methodology and the aspects that were most important and relevant for this project and discarded those that were deemed not relevant.

Another key element that was implemented and mentioned before in this document, was our Risk Assessment, where we allocated a grade of importance for the given tasks. This gave us a strong understanding on which of them where considered critical and which were considered less important.

This helped us to better understand the level of involvement for this assignment and practice caution not to break any of the set rules.

# 5 Project Execution

In this part of the report we will discuss how the execution part went and what methods we used to respect the given deadline.

The agile method called SCRUM was used for managing this project since it gave flexibility and the possibility of turning back and reviewing a certain step in the report if needed at any point.

By using this method, we started by analyzing the user stories for our customer and proceeded in building use cases.

The use cases where followed up by use case descriptions which helped us establish our client’s requirements. Meanwhile the requirements where prioritized based on their grade of importance into two categories of functional and non-functional requirements.

After this step, activity diagrams where created which show the user interaction with the system and what exceptions occur in certain situations. Test cases where also created to illustrate a more detailed user interaction while using the login system.

A domain model has also been made to show the client how the entire system functions as a whole and the relations between each major component.

In the design phase of our system we decide to split up and focus on our individual part for the given system. We created sequence diagrams, conceptual and class diagrams to illustrate on how the needed code should be created.

Bellow resides an example of our Burndown Chart which shows our progress for the given project.

# 6 Personal Reflections

# 7 Supervision

Our supervisors were helpful. We went to them for advice on how to design our project and help us better understand the connections between classes and how the code should be implemented. However, we wished that at certain points we could have gotten more help since many times we struggled with our coding and could not get any support.

# 8 Conclusions

Throughout the project period, we encountered many challenges. Some tasks were easy to complete while others proved to be more difficult, however with the help of each other and our supervisors, we were able to overcome most of.

Thanks to the agile method used and the use of different tools, the group managed to organize and plan each activity accordingly and thus save time and hoped to diminish stress levels.

Many hours have been spent for this report and at times this became exhausting but at the same time, this improved our skills in our line of work.

Tension arose between us at certain moments, but where stopped in time since they proved prove to be toxic for the continuation of the project.

SCRUM proved to be useful for our planning and made our lives much easier by implementing this as a work method.

Database design and implementation was not finished, and this set us back a long ways and caused stress and frustration due to some group members not wanting to collaborate with the rest of the team, deciding to segregate themselves for not good reason.

Overall all these factors contributed in producing an outcome and made the rest of us improve in certain aspects of our education.