

## **Process report sep2**

### **Students**

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Dziugas Austys 280144

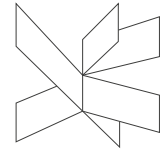
Ronald Johnson 279987

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### **Supervisor**

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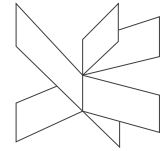
**ICT ENGINEERING**  
**SECOND SEMESTER 2019**



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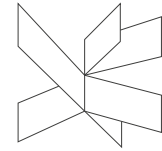
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## 1 Introduction

The current document 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 project, there was no mandatory given topic, but instead, we had the possibility of choosing the methodology, we want to use. The chosen working methodology for this project was SCRUM since it was the ideal way of managing the team in an agile way. The group's activities for this assignment were organized in sprints. There was a total of 5 sprints for the given project and each of them was held weekly one for each sprint. Our group scheduled the weekly sprints to take part every Friday at 10.00 AM either on Discord or at school. The meetings were scheduled to last around 8 hours per meeting. Each sprint had its own sets of requirements all having a grade of importance and a workload estimate. Some tasks took more time to complete than originally estimated and at some point, we fell behind of schedule because of this. A time schedule in form of a Gantt chart was made for this project and this helped in keeping track of the given tasks and helped in organizing our group work. At a certain point in the project, we stumbled with certain tasks and had difficulties in advancing further. As a result, we find our way to complete the project. The workflow went smoothly in most cases since we had a well-organized team prior to starting the work. Each member did his tasks and did not hesitate to ask for help when problems started appearing.



## 2 Group Description

**Our group is made of 4 members, Balkis, Dziugas, Przemyslaw and Ronald**

### **Balkis Ibrahim**

I am 22 years old from Syria, I came to Denmark 3 years ago. I like being here studying at Via, and I have the pleasure to develop a project with my colleagues.

I had a passion for programming and computers. I like to try new things and be a part of every part of the project. As my Belbin role is a specialist, I truly get irritated when the time is being filled with nonsense or otherwise being wasted.

### **Przemyslaw Regulski**

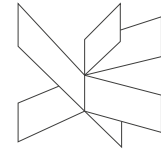
I'm 22 years old from Poland. I came to Denmark 2 years ago and firstly studied at different university but after one year changed it to VIA. I love coding and software development but I have no patience for documentation so those project are very challenging for me. I like to work alone on my set of tasks during the project and help others with their tasks.

### **Ronald Johnson**

I am 21 years old from New Zealand, I came to Denmark to study as I wanted to experience studying in Europe. I chose software engineering as I like the combination of IT and problem solving, which are key elements in most of my hobbies. I enjoy getting tasks done but according to my own schedule and sometimes find it difficult to work according to others' schedules.

### **Dziugas Austys**

I'm 21 years old from Lithuania. I came to Denmark a year ago to study and to expand my possibilities after finishing education. IT related activities were always my interest and I love getting involved in those big software development projects.



### 3 Project Initiation

In this chapter we will discuss on how the topic for this project was received by our group. The topic for the current project was chosen from a list of available cases given to us by the school. Our topic of Employees management system has been chosen since it posed a challenge being very similar to a real-world topic and we would gain a significant amount of knowledge by completing this task. This would not only test our skills gained from our first semester but also from the second semester and would reflect what we have learned so far.

The group was formed free of choice and not imposed by our supervisors. All of us decided to work together since some of us collaborated with each other in the previous semester and knew of each other's personality and working ethics.

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.

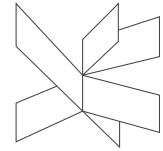
The project was organized in such a way that each sprint would be considered a milestone, given that all the required tasks in that sprint would be completed before the next one started. However, since this happened in real world and not in theory that was not always the case for our situation. Sometimes we fell behind schedule due to certain tasks being more complicated than others and could not always follow the planned schedule.

These issues fortunately have been resolved and we were able to get back on track by allocating more time to catch up with tasks that we fell behind on and were able to get back on track.

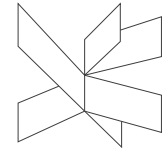
This has been accomplished since we used several project planning tools which helped the group in organizing and keeping track of the whole project.

These include the use of Gantt chart which has been used to monitor the activities and the sprints allocated for this assignment. Based on the kept log book, we were able to document how each sprint went and what has been accomplished during that meeting. Estimated hours have been given for each tasks of the respected sprint and at the end actual hours could be subtracted for each task.

This helped in the creation and implementation of a burndown chart which helped us in keeping track of our progress and kept the group informed if it was falling behind or was ahead with certain tasks.



Another tool used for this assignment was in the form of a risk assessment table which served as a reminder of what risks this project would pose and what would happen if some rules would be broken.



## 4 Project Execution

In this chapter we will discuss how the execution for this project went in our group and what methods were used to meet the 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. Since we defined all the task relevant to this project, we were able to divide them into sprints with each sprint being one week long. While using the Unified process methodology we followed the 4 steps, inception, elaboration, construction and testing. We separated the work between us everyone was still knowing what the other people were doing in order to understand the code as best as possible.

In the inception face, we discussed and developed user stories that were made for this project managed all the requirements and scenarios.

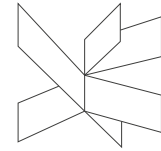
In the elaboration face we spent time creating all our relevant diagrams such as Activity, class, sequence and use case diagrams. All of this helped us visualize the concept and gives us a better understanding of how the system should respond and act.

In the construction face, we started coding our system on the base we created in the elaboration face. Considering all the previously made diagrams for understanding the needed methods.

In the testing face, we tested our application in such detail as we deemed necessary. Just to see if everything works as intended and if any exceptions happened correct them.

There where, at points, moments where we hit a wall and didn't know how to fix a problem and had to seek help from others. Other times we just debated the topic and discussed it between our own.

As for assistance materials, we used mostly online materials, tutorials and instructive videos all of which helped us reach the desired end-point of our project.



## 4.1 Version Control

GitHub has been used for version control. As we are a group of 4 members so all 4 are the contributors for push and pull requests. For more information repository is provided.

[https://github.com/Balqies/SEP2\\_RE](https://github.com/Balqies/SEP2_RE)

## 4.2 Scrum

During the development of the system an agile framework has been used which is SCRUM. Roles were assigned to our group members so that each one of us will know what his task during the Scrum is and how he should prepare for the next meeting.

Our roles were:

### **Product owner:**

The whole group members were presenting the product owner of our system. The purpose was to create a vision of what he wishes to build and convey that vision to the scrum team.

### **Scrum master:** Balkis

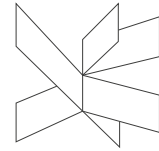
Balkis was the Scrum master in our group. her purpose was to maintain a good and calm environment. Also, she was the one who planned out the Scrum meetings. During the meetings she was the one to set up who is responsible for certain tasks. There were some obstacles that our team encountered but not for a long time because Balkis was trying hard to find a solution for the problem.

### **Development team:** Balkis, Ronald, Dziugas, Przemyslaw

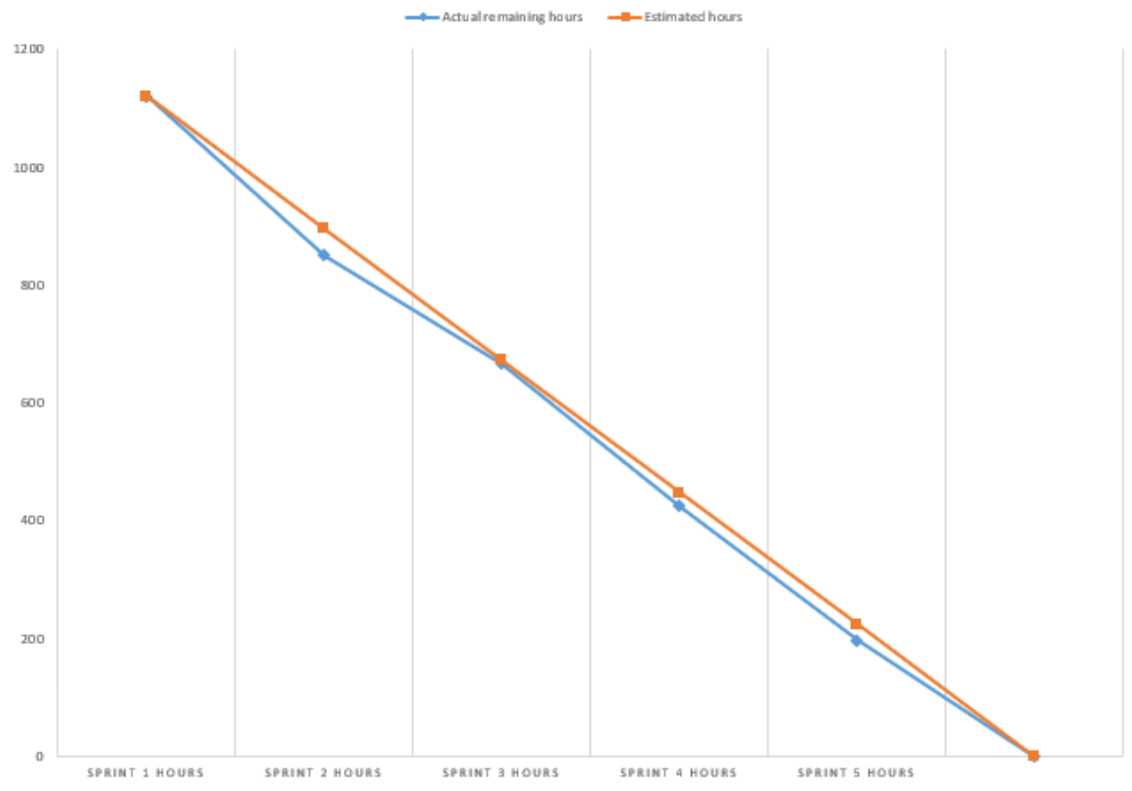
They work on creating and improving the system. The main goal of the development team was to implement the tasks which can be found in the sprints also to deliver the requested and committed product increments. During this project, our development team worked hard in order to achieve the set-up goals.

## 4.3 Burndown chart Diagram

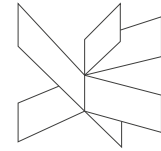




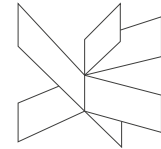
### BURNDOWN CHART



From the diagram above we can clearly see that at some point we were falling back especially in the second sprint but we as a group did our best to face the problem and meeting the deadline of the project.



Sprint ID	User Story	Priority
2	As an admin, I want to add employees to the system so that all the employees will have access to the system.	High
2	As an admin, I want to delete employees from the system so that all employees can no longer access the system.	High
2	As an admin, I want to edit employee's information in the system, so that all employee's data can be modified.	High
3	As an admin, I want to be able to assign shifts to employees, so that employees can view their work plan.	High
3	As an admin, I want to be able to view employee's data, so that I have access to pertinent information regarding employees.	High
3	As an admin, I edit and remove shifts from employees work plan, so that employees can view their work plan.	High
4	As a user, I want to be able to view my work schedule so that the schedule can be adhered to.	High
4	As a user, I want to be able to modify my data, so that I can update my data with any future changes.	Medium
4	As a user, I want to be able to specify whether I want to work or not on a specific date so that admins can assign my shifts accordingly.	Medium
5	As a user, I want to be able to denote my time of arrival and departure from work, so that my working hours can be recorded.	Low
5	As a user, I want to be able to check my work-related statistics, so that I can calculate my income.	Low

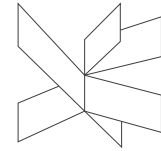


## 4.4 Sprint backlog

### First sprint

★	Sprint 1	5 days	Wed 7/10/19	Tue 7/16/19
★	Project description	5 days	Wed 7/10/19	Tue 7/16/19
★	Risk assesment	2 days	Wed 7/10/19	Thu 7/11/19
★	User stories	1 day	Wed 7/10/19	Wed 7/10/19
★	Requirements	1 day	Wed 7/10/19	Wed 7/10/19
★	Use cases	2 days	Wed 7/10/19	Thu 7/11/19
★	Use case description	2 days	Thu 7/11/19	Fri 7/12/19
★	Scenarious	1 day	Thu 7/11/19	Thu 7/11/19
★	Class diagrams	1 day	Mon 7/15/19	Mon 7/15/19
★	Conceptual diagram	1 day	Mon 7/15/19	Mon 7/15/19
★	Activity diagrams	1 day	Tue 7/16/19	Tue 7/16/19
★	Sequence diagrams	1 day	Tue 7/16/19	Tue 7/16/19

Based on the unified process technic the first sprint was under the inception face were the first version of the analysis and design were made. The first sprint helped the group member to get a full overview of how the system might be developed and what problem might be put on the road, so they are ready to reflect on that.

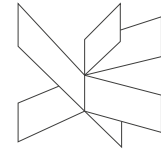


Sprint 2	5 days	Wed 7/17/19	Tue 7/23/19
Review activity diagrams	1 day	Wed 7/17/19	Wed 7/17/19
Start process report	1 day	Wed 7/17/19	Wed 7/17/19
Modeling database	1 day	Thu 7/18/19	Thu 7/18/19
add,remove, edite employees imp	5 days	Wed 7/17/19	Tue 7/23/19
GUI design and testing	5 days	Wed 7/17/19	Tue 7/23/19
Sprint 3	5 days	Wed 7/24/19	Tue 7/30/19
Project report	5 days	Wed 7/24/19	Tue 7/30/19
assign, edit, remove shift + view user data imp	5 days	Wed 7/24/19	Tue 7/30/19
GUI design and testing	5 days	Wed 7/24/19	Tue 7/30/19
Sprint 4	5 days	Wed 7/31/19	Tue 8/6/19
GUI design and testing	5 days	Wed 7/31/19	Tue 8/6/19
Project report	5 days	Wed 7/31/19	Tue 8/6/19
Testing code	5 days	Wed 7/31/19	Tue 8/6/19
Testing GUI	1 day	Mon 8/5/19	Mon 8/5/19
view schedule, modify data, and specify work days imp	5 days	Wed 7/31/19	Tue 8/6/19
Sprint 5	5 days	Wed 8/7/19	Tue 8/13/19
check in, check out, check work statistic imp	5 days	Thu 8/8/19	Wed 8/14/19
Review project report	5 days	Wed 8/7/19	Tue 8/13/19
Review code and GUI	5 days	Wed 8/7/19	Tue 8/13/19

Second, third, fourth, and fifth sprints

The implementation started from the second sprint until the last sprint, during this period some adjustment has been made regarding the analysis and the design.

All the related documentation has been written along with implementation and testing.



## 5 Personal Reflections

### **Balkis Ibrahim:**

During this project, I've realized that I like to work more with some people rather than others. This is mainly since some people contribute more than others on some subjects. But through hard work and perseverance, we manage to meet all our deadlines and end up with a good grade to reflect our determination.

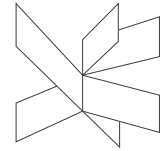
All my team is made from people I haven't worked with in the past and I thought that could turn out to be a problem for such an important project, but as a month passed it turned out that we all work well together. There is some conflict of how to do certain things in our project but that's just because everyone wants what's better for the group. But thanks to all the arguing we used more time than we should have, but that time wasn't wasted. Thanks to that we have a solid base on which to build our project and not worry about having made mistakes at the beginning of our project.

The hardest part probably was to get everyone together on when everyone is abroad, and we do not have school.

after all those challenges I am happy that we were able to make it and finish on time although I wish we could finish a bit earlier so I can enjoy my holiday.

### **Przemyslaw Regulski:**

Throughout the development of the project I realized that following SCRUM helps a lot with sticking to deadlines and knowing which parts of the project are causing most problems. I've learned that even though development process began almost immediately after group forming we still were pretty tight on time at the end, before that I vastly underestimated the time required for creating a project of this size with so many people. Our group had a pretty tough beginning where we were having issues with communication but as time passed our communication was improving and everyone was working on meeting the project goals. As a group we've managed to overcome our issues without too much infighting and at the end of the project I'm thankful that we will not walk away hating each other. The biggest challenge of this project was working throughout holidays. Most of the members of the group at some point were back in their home countries where despite promises their productivity including mine were drastically reduced. We



also had only month and a half for creating this project as opposed to over 4 months when doing the project during semester. I've realized that it is much better to put more work the first time and operate on much less tight schedule.

### **Ronald Johnson:**

Throughout this project I have greatly expanded my knowledge of project development. The primary areas of development have been in regards to GUI in the form of javafx and the MVC design pattern.

Before this project I had a terrible impression of the MVC pattern as I was of the impression that there was a needless amount of files and complexity but have since seen that this is simplicity in disguise. Utilising this new knowledge enabled me to more easily develop.

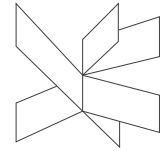
Touching upon my reflections on the process as a whole, I believe that despite the added difficulties of working during the holidays with each member unable to meet in person our group worked well together.

A possible area of improvement for myself would be communicating with my team members. Occasionally I would change something on my end and forget to tell them resulting in the change not being reflected in the rest of the project.

### **Dziugas Austys**

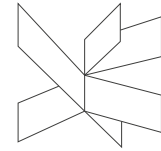
At the beginning of the project I realized that I still lack a lot of knowledge in terms of group work and project work itself. I felt that I could have had contributed more, but through out this project period I changed my perspective on this task. I learned a lot not only about programming or documentation, but also about group work. we managed to meet all the deadlines and come up with the final product.

The team was almost the same, we had one new member. Although this time the team worked in a more dedicated way, we also had an actual leader with more experience about projects. It helped us to periodize work and manage time. These two things were the biggest problems in our previous semester project. At the beginning, the work was not going as smooth as it should had, but in the time being with a lot of struggle and arguing the team started to work as intended.



The most problematic part in this semester project was meeting and discussions because of the summer time and most of us were abroad.

After this period, I am happy because I know how the good project should look like. It was challenging, but I feel that I know way more than I knew before this semester project.



## 6 Supervision

This project is done without any supervisors.

## 7 Conclusions

Through the course of this project we encountered challenges that put all our abilities to the test. 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 them and see our semester project done within the given period.

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

Having our activities ordered and split helped in creating a good collaboration and a solid organizational backbone for our group.

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

Tension arose between us at certain moments, but a full-on conflict never developed since all of us were fully aware that this aspect would prove to be toxic for the continuation of the project.

SCRUM was completely new to some of us but even, so it proved to be useful for our planning and made our lives much easier by implementing this as a management method.

The new design patterns learned this semester helped in producing a much more superior software than the one done in the previous semester since they were much more advanced than the one, we knew before.

Database design and implementation also was a new topic to us and sometimes caused discomfort but overall helped us understand how our software would work in a real-world situation.

Overall all these factors contributed in producing a satisfying outcome and make us further improve in certain aspects of our craft.



