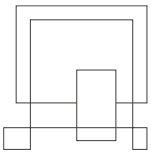


Project Description

Philip Philev
293735
Levente Nagy
293115
Tiberiu Marian
293090
Roberto-Adrian Fat
293099

Supervisors
Mona Wendel Andersen
Steffen Vissing Andresen

Software Technology Engineering

1th semester

2019

Version: 20.October, 2019

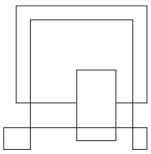
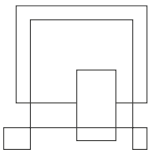


Table of content



Background Description

VIA University College is an educational institution in Central Denmark, offering more than 40 degree programs in various disciplines and featuring more than 20.000 annual participants, making it the largest institution for further education in Northern Europe. (About VIA, 2019)

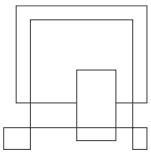
As one can expect from a large educational institution, scheduling exams for different semesters and locations involving thousands of students can be a challenging task. This responsibility falls on secretaries throughout the various VIA campuses, each frequently handling thousands of students (2500 students only in the Horsens Campus) (De Gule Sider, 2019)

In its current form the exam scheduling in VIA is carried out by using Excel spreadsheets, resulting in manual processing of large amounts of information. This is a laborious task for humans and is often susceptible to errors that can result in scheduling conflicts and incorrect input of data.

Furthermore, the generated spreadsheets are static entities, that is, new files need to be generated every time corrections and changes are applied. This results in a major inconvenience for end-users, such as students and teachers, trying to stay informed on their exam schedules.

Some software solutions are present offering the ability to schedule people and resources online, among other specific product functionality. Admittedly, this is useful for corporate environments where employees and management personnel are required to synchronize their workload or accept external business appointments. Nevertheless, these scheduling systems are expensive, often charging several dollars monthly per user (a staggering sum for a university), require time and resources for integration in pre-existing internal systems, and most importantly they are not tailored based on the criteria set by the educational institution. (Best Scheduling Software | 2019 Reviews of the Most Popular Tools & Systems, 2019) (Exam Scheduler- Scientia | Graphical Scheduling Solution, 2019)

VIA University College secretaries and end-users, including students and teachers, would benefit greatly from a system capable of handling large amounts of information whilst also displaying it in a user-friendly and interactive manner. This will reduce workload and offer substantial benefits for everybody involved.



Problem Statement

A custom exam scheduling software can be created in order to meet the requirements set by VIA University College while reducing the workload of manual processing by secretaries

Main problem

Manual scheduling is a tedious process if hundreds of people are involved and it is generally prone to human errors when trying to resolve place and time conflicts.

To extend the definition of the main problem, a set of questions must be addressed:

1. What number of users is the system going to handle?
2. What information is necessary for such system to exist?
3. How is information going to be processed by the system?
4. How can conflicts be avoided or reduced?
5. How is the system going to handle different exam types?
6. How is information going to be displayed to end-users?
7. How are the customer-based criteria going to be handled?

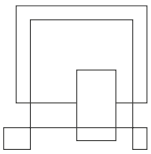
Definition of purpose

The purpose is to help secretaries manage the semester examinations' locations and times, while reducing workload and providing the possibility to address and resolve conflicts based on a set of predefined institution criteria.

Delimitation

In this section a set of project delimitations is addressed.

1. Only one campus location is going to be taken in consideration.
2. Not all students for the Horsens campus will be included, that is, the project will focus only on Software Engineering students from the first 4 semesters.
3. Conflict checker will be limited by technical knowledge.
4. Everyone will be able to access a read only website of the current schedule, without the need of a login.



Methodology

For the duration of this project, the specific methodology to be used is the waterfall model. Waterfall is a popular methodology used commonly in engineering design and development focusing on linear sequential processing.

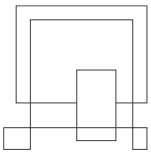
Each activity is strictly based on the previous one and the next stage is unreachable unless the previous one is reviewed and approved. This method has both advantages and disadvantages based on its rigid structure.

Biggest advantages are the disciplined approach offered to problem solving, due to the strict deadlines for stage completion, or when design changes can result in bigger expenses.

Notable disadvantages are the limitation in addressing changes without redoing the entire process, as well as slower product development due to pending review and approval of each step. [5]

The implications of using the waterfall method in the current project are closely related to the advantages and disadvantages of the model itself. A relevant example is how the structure of the Project Description is developed. Each chapter proceeds the previous one, that is, chapter Delimitations cannot be completed before the Problem Definition, which itself cannot be completed without the Background Description etc.

This process is to be further extended to the preceding chapters of the report as well as the prototype development process.



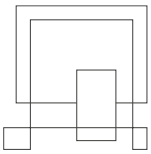
Time schedule

Expected total time for this project is 550h.

Deadline is 20th of December 2019.

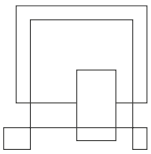
By definition, the work on the report is going to be conducted based on the waterfall method, which implies that for each development stage, the report is going to cover the corresponding part sequentially.

Development stage	*Start date*	*End date*
project description	18/09/2019	04/10/2019
analysis	23/10/2019	13/11/2019
design	20/11/2019	27/11/2019
implementation	27/11/2019	16/12/2019
test	17/12/2019	20/12/2019
Report writing	1/10/2019	20/12/2019



Risk assessment

Risks	Likelihood Scale: 1-5 5 = high risk	Severity Scale: 1-5 5 = high risk	Product of likelihood and severity	Risk mitigation e.g. Preventive & Responsive actions	Identifiers	Responsible
Badly generated test databases	3	2	3	Start in little and check the database manually.	Inexplicable conflicts while testing.	Levente Nagy
The software being unable the handle the load	1	5	3	Making an optimized software or optimizing afterwards.	The software being slow.	Tiberiu Marian
Possible vulnerabilities	2	5	3	Minimizing the complexity and the input fields in the read only webpage.	We do not have the ability to professionally test this.	Philip Philev
Conflict checker not working perfectly	3	5	4	Testing with a smaller database first.	Not showing certain conflicts or showing invalid conflicts.	Levente Nagy
Disagreement in the group environment	2	4	3	Collective discussion on how to reach consensus.	Unwillingness to cooperate on the agreed ideas.	Roberto Fat



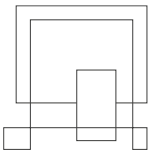
Sources of Information

Capterra.com. 2019. *Best Scheduling Software | 2019 Reviews Of The Most Popular Tools & Systems*. [online] Available at: <https://www.capterra.com/scheduling-software/> [Accessed 20 December 2019].

Dgs.via.dk. 2019. *De Gule Sider*. [online] Available at: <https://dgs.via.dk/> [Accessed 20 December 2019].

En.via.dk. 2019. *About VIA*. [online] Available at: <https://en.via.dk/about-via> [Accessed 20 December 2019].

scientia. 2019. *Exam Scheduler- Scientia | Graphical Scheduling Solution*. [online] Available at: <https://www.scientia.com/product/exam-scheduler/> [Accessed 20 December 2019].



Group Contract

Group Name (optional): **Group 4** Date: **20.11.2019**

These are the terms of group conduct and cooperation that we agree on as a team.

Participation: We agree to....

Have the required attendance for each course.

Actively participate in each project work session we have scheduled

Be individually responsible for learning the presented information in the courses throughout the semester

Communication: We agree to...

Openly discuss ideas and suggestions regarding the further progression of the SEP Project without judgement

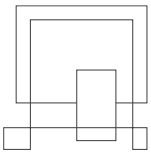
Inform other members when circumstances arise preventing one from attending a meeting or a class

Maintain a friendly environment where each of the group members feels valued and heard

Meetings: We agree to....

Meet at least once a week to discuss how to proceed with the SEP Project

Collectively attend the supervisor meetings when one is scheduled



Strictly attend Wednesday SEP sessions in order to expand our understanding on the requirements for SEP in VIA

Conduct: We agree to....

Treat other group members with the respect that they deserve

Behave in a way that does not bother other group members

Conflict: We agree to....

Collectively discuss conflicts between group members where members not participating in the conflict serve as mediators

To bring the issue to a supervisor if the conflict cannot be solved within the group

Consequences: We agree to....

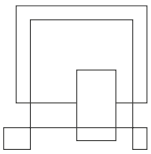
Reprimand group members that continuously violate terms of the group contract

The consequence depends of the frequency of the violation

Deadlines: We agree to....

Always be done with an assignment a day before its due date

Finalize the content of the SEP Project at least a week before the submission date leaving room for corrections and discussions



Other Issues:

Group members are responsible for their own learning as long as it doesn’t interfere with the ability to participate in the SEP Project