**Exam scheduling system for software engineering student exams**

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# Background Description

The Software Engineering first semester Coordinator has issued a problem in VIA University College, that there is no system for scheduling exams for the semesters 1 through 7. For each exam period a schedule is made by the secretaries and made available on StudieNet.via.dk for the teachers and students.

According to the customer, the current system has multiple issues.

First, exam room overlapping is one of the major problems occurring every exam period, therefore causing a lot of stress on examiners and students alike. Examiners need to find a new empty room for their exam and the students need to be informed of the made changes. On the other hand, the exam that was currently taking place in the overlapping room may be interrupted and this may cause anxiety on the students.

Second, if a teacher or external examiner is assigned to multiple rooms at the same time they need to postpone their exams and take up only one of them. This process may take a lot of time – the examiner needs to inform the students and secretaries of the changes and he/she also needs to get to the exam room in time for the exam.

At the same time, students may have the same problem as the aforementioned, but in their case, if there is no way to postpone one of the exams, for example if both exams are in written form, they will automatically fail one of them in order to go to the other.

Third, the equipment in every room on the campus may vary, depending on the usual usage of said room. For example, an oral exam may take place in a room with no projector and/or no available connection types for the projector. This makes the examiners or students take time to find a room or cables from other rooms to be able to start their exam.

Every other problem considered is as follows – the schedule is preliminary, which means it can be updated at all times, sometimes without the knowledge of the students and examiners, the janitors, who assemble the rooms, may need to do it the night before, because the rooms may be very far away from each other, which causes extra work and unnecessary walking, students may feel uncomfortable in unfamiliar rooms, causing them to be nervous or to be anxious, which reflects poorly on their performance.

Available software for schedule creation currently is a wide range of spreadsheet editors, such as *Microsoft* *Excel*, *Libre* *Calc*, *Google* *Sheets*. But the current software doesn’t fit the specific needs for scheduling exams, because of the lack of a validation system for entry errors. The end schedule, which is shared with the teachers and students as a pdf isn’t easily over viewable and that’s mostly a limitation of what can be done with just using a table to show a large schedule.

# 2. Problem Statement

The main problem is the current method of scheduling examinations being slow-paced, unintuitive for the users and the cause for many misunderstandings.

In order to solve this problem these questions are to be answered in the process:

* How do we prevent overlapping data in the schedule?
* In what way do we make the schedule accessible to the students and teachers?
* In what way will the students and teachers be notified of changes in the schedule?
* What can be done to make the system more intuitive to the secretaries?
* What option can be included to make the rooms easier to assemble for the janitors?
* In what way is it possible to know which classroom is the most comfortable for a certain class?

# Definition of Purpose

The purpose is to help the secretary that is responsible for making the exam schedule, by creating a software which is easy to use and reduce the time to schedule the exams by a proper specified algorithm.

# Delimitation

Due to the scope of the project, some problems won’t be solved:

* Classroom specific equipment list.
* A system for choosing a preferred classroom for each class.
* The system will cover written and oral exams.

# Methodology

For the project we will use the waterfall method. According to *oxagile.com* the waterfall method is a linear sequential approach. The project is divided into six phases – requirements, analysis, design, coding, testing, operations. Work on the following phase begins only when the phase before has been completed.

# Time Schedule

The expected time investment for the project is approximately 500 hours. And there are multiple milestones to be achieved during the project.

# Risk Assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Risks | Likelihood Scale: 1-5,  5 = high risk. | Severity Scale 1-5,  5 = high severity | Product of likelihood and severity | Risk mitigation e. g.  Preventive & Responsive actions | Identifiers | Responsible person |
| Difficulty understanding Java terminology | 5 | 5 | 25 | Reading the Java Student book and using internet resources. | Errors in code, software malfunction | Eva Nikolaeva |
| Not being able to contact the coordinator | 2 | 2 | 4 | Message via email and/or social media | Inconclusive information | Sabina Elena Baghiu |
| Not being able to follow the waterfall method | 3 | 3 | 9 | Often have meetings to assure proper workflow. | Working on further steps in the development of the system before the previous ones have been completed. | Márton Penték |
| Not being able to access information needed | 4 | 4 | 16 | Internet resources and frequent team meetings | Not being able to continue working on the project properly | Miladin Asenov |

# Sources

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