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# Online Gradebook System

## Project Description

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## Supervisors:

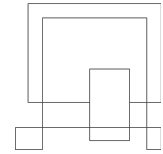
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**Software Technology Engineering**

**3rd Semester**

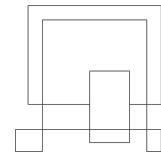
**September 2020**



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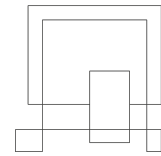
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## Background Description

A very popular solution for grading students in a lot of educational institutions is still the outdated practice of physical gradebooks. There, a teacher gives students grades and lists their absences in a catalogue, writing them down by hand. This approach has several drawbacks ([Network Support, 2019](#)) with their origin in human error, unnecessary time consumption and security issues. Writing things down by hand means that in order for the information to be distributed, it has to be re-written several times - from teacher to student or from teacher to administration. That always comes with the risk of human error, which is hard to rectify once written on paper, especially in regards to imperative information such as student grading. But perhaps most importantly, physical grading severely limits the students' access to the said information regarding their grades and attendance.

An alternative to the traditional grading practice is the online catalogue system. Several higher educational institutions, especially universities and colleges, already use such grading solutions to more easily manage the hundreds or even thousands of students enrolled in a course. It gets rid of the superfluous and tedious task of having to re-write everything in order to distribute the information farther. It also takes care of the security issues because only the allowed personnel can make changes to the grades. And finally it gives easy access to students and parents to view the respective information about their academic success online.

Online course-board programs like Blackboard ([Blackboard, 2020](#)) and Moodle ([Moodle, 2020](#)) can be extremely useful in the spread of data and the assortment of tasks in enormous courses like those offered as a major aspect of the core curriculum. In any case, the mechanized evaluating abilities of these projects are commonly limited to question banks with clearly defined right and wrong answers. More advanced



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computer-assisted grading systems have been developed for the assessment and grading of more subjective assignments such as essays ([Sagrader, 2020](#)) , business case studies ([Czaplewski A.J. 2009](#)) , and student software programs ([Jones. E. L. 2001](#)) . Nonetheless, completely computerized frameworks are as yet restricted to applications with all around characterized rules and destinations.

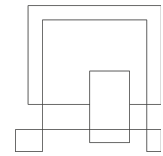
In conclusion, following the aforementioned statements, more and more educational institutions are transitioning to an online solution for grading, as the traditional means of the cataloguing activities through physical gradebooks prove to be time-consuming and inefficient.

## **Problem Statement**

Schools all over the world still use pen and paper to store the grades assigned to students. Schools want an online gradebook system that is easy to use and allows students and their parents to see their grades at any time.

Questions to be answered are the following:

- What type of client-server connection should the system use?
- What information should the system know about the students?
- How to immediately update the grade list of a student after a new grade gets assigned to the student in question?
- How to make the system maintainable?



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## Definition of purpose

The purpose is to create an online gradebook system for schools that require a new method of monitoring the most important information about the activity of students' and teachers' work, which slowly will replace the old paper gradebooks in order to allow teachers, students and their parents to access it at anytime, anywhere without any necessary physical presence at the school, especially in the current times when most classes are held online due to the Global Covid-19 Pandemic.

## Delimitation

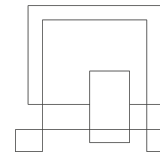
- The system cannot host online examinations and tests.
- The students cannot upload assignments to the system.

## Methodology

For this project, we will use multiple software development processes. One of them is the agile method SCRUM. The SCRUM method will allow us to work in a fast and efficient manner where everybody is focused on the task at hand ([Schwaber, 2017](#)).

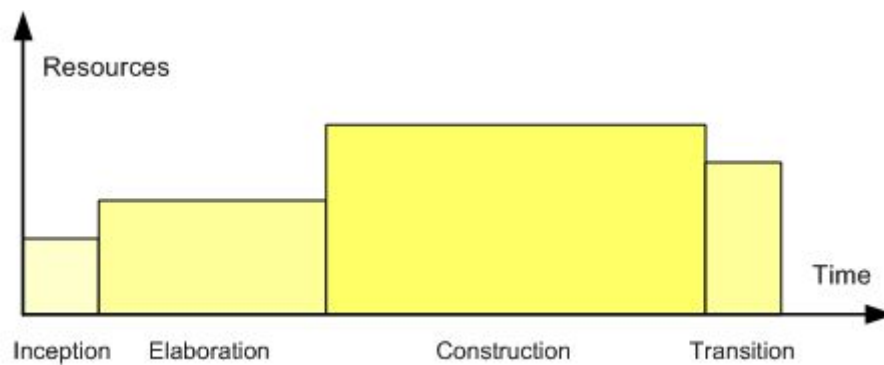
\*Starting scrum roles in our team:

- Mircea Dobre: Product Owner
- Pavel Balan: Scrum Master
- Sandut Chilati: Development Team



We will be making 8 sprints of a length of a week(7 days) each.

In this project we will also use the Unified Process(UP) framework which will allow our team to split the project into 4 phases making the development process easier.

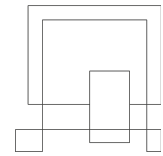


(GFLewis, English Wikipedia, 2006)

## Time schedule

The dates are subject to change due to unexpected events which may occur.

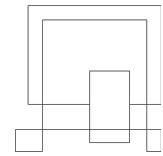
Week	Pre-project planning	Week	Inception	Week	Elaboration	Week	Construction	Week	Transition
37	Group, proposal	43	Scrum team, product backlog	45	Sprint 2	47	Sprint 4	51	Sprint 8
38	Proposal acceptance	44	Sprint 1	46	Sprint 3	48	Sprint 5		




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39	Project description					49	Sprint 6		
40	Project description feedback					50	Sprint 7		
41	Project description acceptance								

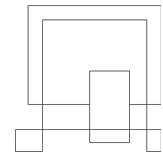
Expected workload per ECTS per student	28 hours
ECTS per student	10 points
Expected workload per SEP3 per student	280 hours
Group members	3 members
Total expected workload per team	840 hours
Estimate cost per hour	~225 dkk
Total estimated cost in dkk	~189.000 dkk
Total estimated cost in euro	~25.400 euro



## Risk assessment

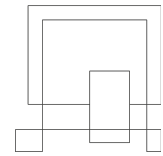
Risks	Likelihood Scale: 1-5 5 = high risk	Severity Scale: 1-5 5 = high risk	Product of likelihood and severity	Risk mitigation e.g. Preventive- & Responsive actions	Identifiers	Responsible
Not meeting the deadline	3	4	12	Stop wasting time playing video games, making a working product first then making it pretty.	High level of steam playtime, meaningless features being implemented, Cyberpunk 2077 launching soon	The whole team
One of the members getting COVID infected	2	5	10	Don't leave for the holidays, wash hands, mask	Covid symptoms, partying a lot, travelling	The whole team
Loss of files and notes	4	3	12	Saving everything on cloud storage solutions/GIT	Leaving laptop unattended, too many GIT commits	Pavel Balan
Not attending group meetings	4	3	12	Discussing the team meeting timeframe in advance to make sure every member can attend	Not responding to messages	Sandut Chilat





## Sources of Information

1. *k12teacherstaffdevelopment.com*. [online] Available at: <https://k12teacherstaffdevelopment.com/tlb/online-vs-hard-copy-grading-debooks-pros-and-cons/> [Accessed 21 Sep. 2020].
2. *Blackboard.com*. [online] Available at: <http://www.blackboard.com> [Accessed 21 Sep. 2020].
3. *Moodle.org*. [online] Available at: <http://moodle.org> [Accessed 21 Sep. 2020].
4. *SAGrader*. [online] Available at: <https://www.sagrader.com> [Accessed 21 Sep. 2020].
5. Czaplewski, A. J. (2009) Computer-Assisted Grading Rubrics: Automating the Process of Providing Comments and Student Feedback, *Marketing Education Review*, 19[book].
6. Jones, E. L. (2001) Grading Student Programs – A Software Testing Approach, *Journal of Computing Sciences in Colleges*, 16[book]



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## Appendices

### Group Contract

**Group 6**

Date **10.09.2020**

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

**Participation:** We agree to....

Divide the responsibilities efficiently

Be open to new ideas

Let the team know in advance if one of the members has to miss a team meeting

Honor meeting time frames

**Communication:** We agree to...

Try to keep swearing to a minimum

Possess a good comprehension and ability of communication in the English language

Focus on solving problems, not blaming people

Respect each other

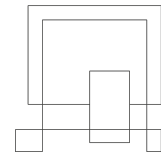
Respect constructive criticism

Respond to messages in a timely manner

**Meetings:** We agree to....

Meet at least twice a week

Be present for every meeting even if sick



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Not be late for meetings

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**Conduct:** We agree to....

Be calm and rational

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Respect each other and the conditions of the contract

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**Conflict:** We agree to....

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Not argue over meaningless things

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Not to escalate conflicts

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Separate team members in conflict with each other

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**Deadlines:** We agree to....

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Respect time schedule

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Respect all project deadlines

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**Other Issues:**

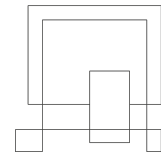
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Solve together any problems that appear inside the group

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Help each team member solve problems even if they are not university-related

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Group member's name	Student number	Signature
Mircea-Ionut Dobre	293117	<i>Mircea Ionut Dobre</i>
Pavel Balan	293129	<i>Pavel Balan</i>
Sandut Chilat	293086	<i>Sandu Chilat</i>