BUSINESS ACADEMY SOUTHWEST

2.semester exam project.

D21

Project start: Monday 17/5 2021 9.00

Project end and hand-In: Thursday 17/6 2021 at 12.00

Group sizes: 3 to 5

Teachers:

Tommy Haugaard

Frank Ø. Hansen

Nils Pontoppidan

Karsten Skov

Exam project description

This document presents the project for the examination at the Computer Science Study,2 semester at the Business Academy South West, in the spring 2021. First, the overall scope for the project is stated, including general requirements for the report and how the report will be used at the following examination. After this, the concrete project assignment is then formulated. The document is written for the students as well as the external examiner.

Purpose

The purpose of the project is that you, through the use of terminologies, techniques and tools studied in the 1st and the 2nd semester at the Computer Science Study will experience the coherence in topics and improve your understanding of the syllabus. As a concrete goal you must document this by working out a report and a running application of the developed IT-system.

Report Requirements

You can assume that the reader of the report has an in-depth knowledge of the terminologies, techniques and tools presented throughout the first two semesters at the Computer Science Study.
It will be highly weighted that the report has a good layout, is understandable and complete, according to the needs of the reader. Regarding the content of the report it will be highly weighted that you are arguing precisely for important decisions about the models, structures, limitations etc.
The report should be readable both at a superior and a detailed level. This requires that the report contains an introduction, including a problem definition and a conclusion. It should make sense to the reader reading just these two parts of the report. The introduction must state which limitations you have set for your project.

The size of the report is *minimum 20 pages and maximum 40 pages per group*, not counting front page, table of contents, reference list, and appendices for the report. The maximum size is not a goal but should be an upper limit. It will be fine if you are able to make a good report with fewer pages. One page is 2400 characters including spaces and footnotes.
The report must contain part of your source code in a readable form. The part of source code to include in the report must cover your solution(s) in a vertical sense. It means that the included source code must be examples from all layers. Further the examples must be selected such it is possible to follow the implementation from the upper layer (GUI for instance), passing the application layer with controllers, and ending at the data access layer.
Remember also to include the business entities (aka domain entities) used.

Teachers role

You may, during the project, consider your teachers as consultants by whom you can get professional assistance. In other words – you are responsible for taking contact when you need guidance on Zoom, the teachers will email a link to the zoom meeting. You might present problems (in writing would be nice), which you want to discuss, but report drafts send in for corrections are not allowed. In addition, the teachers will be able to recommend alternative literature.
It is important that you are observing Moodle every day, as Moodle will be used to post supplementary project materials.

The teachers will be available for a Zoom meeting (the link from the week 20 schedule)
Tommy: Tuesday and Thursday: 12.00 - 13.30 PM

Frank: Tuesday and Thursday 9.00 – 11.00 AM

Nils: Thursday and Friday 8.30 -9.00 AM

Karsten: Monday and Wednesday 9.00 – 10.00 AM

Procedure for the oral exam.

From Curriculum:
First Year Examination – Examination in the compulsory educational element Programming, Systems Development, Technology and Business Understanding

The examination
This examination is an external, oral group exam and is based on a written group project.
Grading is according to the 7-point grading scale.
Groups are to consist of 2 – 4 students; any exception to this requirement is to be approved by the head of department.
The examination represents 60 ECTS.
One combined grade for the written report and the oral presentation is given.
The project is presented by the project group in the oral exam, the duration of which is max. 30 minutes. This is followed by an individual examination, lasting 30 minutes including grade evaluation, of each member of the group.

Formal requirements for the written project report
The following components should be included:
Front page with title of the report
Table of contents
Introduction, including main issues, problem statement and approaches

Conclusion (Remember to ensure correlation between the introduction and the conclusion. It should in principle be possible to understand the conclusion without having to read other sections than the introduction).
Discussion, putting the findings into perspective
Bibliography (including all sources referred to in the report)
Appendices (including only those documents that are central to the report)
The project must be minimum 20 standard pages and a maximum of 40 standard pages.
A standard page is defined as 2400 characters, including spaces and footnotes, but excluding the front page, table of contents, bibliography and appendices. Appendices are not included in the grading evaluation.
Assessment criteria
The evaluation criteria for the examination are the learning objectives for the compulsory educational element Programming, Systems Development, Technology and Business understanding offered during the 1st and 2nd semester
Learning objectives can be seen in the national section of the Curriculum.

Timing
The examination is held at the end of the 2nd semester. Further information regarding date and place as well as submission of the written group report can be found on EASV LMS.
The exam must be passed before the end of the first year of study if the student is to be allowed to continue in the program.
The head of department can grant the individual student exemption from the specified deadlines for passing the examination if this is justified by illness, maternity leave or exceptional circumstances.

Language
English/Danish
The project must be handed-in not later than **Thursday 17/6 2021 at 12.00** at Wiseflow with the report attached as a .pdf file and the project as an open Github link.
More details on the exam will be published at the end of May in the Exam Info document.

Author idea generation tool/ Story line tool.

Many authors begin new work by collecting small notes, which are written on Post-its or event-cards. On each event-card, individual words are noted, just so that the author can remember the given event. The notes on the event-cards are saved and will eventually be used later in a story.

When the author gets a basic idea for a story, the author will lead in his pile of notes and find the notes of events that fit the story. The author will lay the events in extension of each other like a tile walk and give the direction of the story. Pulling in a new event can give a changed direction of the story. A pile of post-it or event-cards can be used for multiple ideas, as many writers take multiple approaches to a novel.

When the author begin to write a novel, he or she will pick up the event cards and draw them up on a timeline, see figure 1.

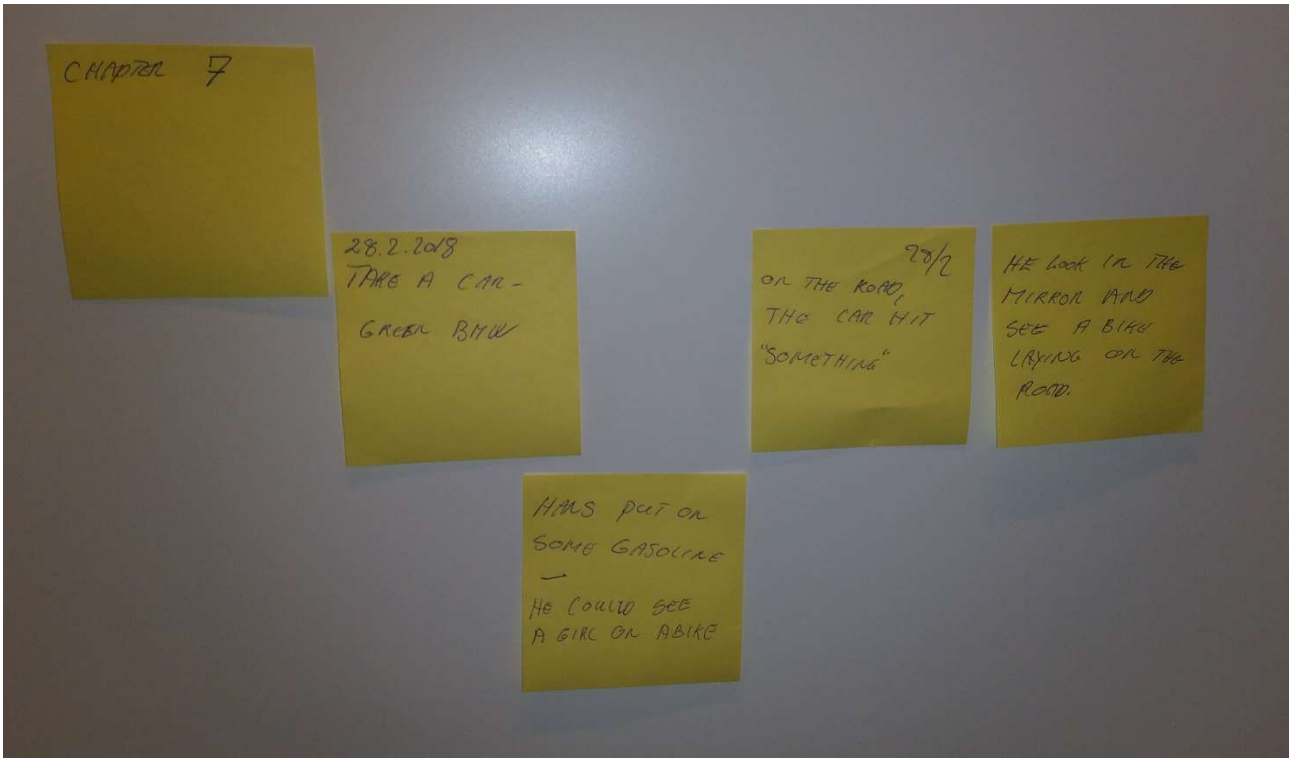

Figure 1. Events cards

There are several levels of event cards so that one event card can be under another card. This means that there can be a hierarchy in each chapter. The user must be able to set once all the event cards are placed. The program should offer a number of options. 1. save the story for later editing 2. print the events chronologically 3. Export to a text with all events chronologically and in level.

```
CHAPTER 7
28.02.2018 Take a car - green BMW
        Hans put on some gasoline - he could see a girl on a bike
28/2 On the road, the car hit "something"
He look in the mirror and see a bike laying on the road
```

Figure 2. Example of exported text.

In some cases, authors work together, in others it is a single-user project. This means that the solution must be able to run as a multi-user system with a central database and as a single user without the use of a central database. Construct a layered architecture, with separation of concerns. Use JavaFX for GUIs and when relevant use appropriate design patterns. *Demonstrate how databinding can be applied in at least one scene.*

Programming:

Construct a layered architecture, with separation of concerns. Use JavaFX for GUIs and when relevant use appropriate design patterns.

Include in the report:

- The architectural diagram showing packages.
- Code snippets of interesting pieces of code including text explaining the design pattern used (if relevant).
- Database creation scripts and code for the stored procedures etc. (these can be placed in the appendix).
- Test code and a short explanation of the principles used when writing the test code.
- Design Class Diagram(s) - just place an excerpt in the report.
- Sequence diagrams demonstrating the order of actions on the finished code.
- An overall discussion of the design patterns used in this project.
- A ***working*** link to your GIT repository – after the project is handed-in no group members can change the code. It is also a good idea to place a short explanation of how you have been using version control and management of code.

System development:

Use Unified process as method and add the artifacts to the report

In your answer, the following should de included:

- List of Use-cases, domain model, Class diagram, SSD.
- Time estimation and reflections on the estimated values.
- Pictures of the throw away prototype, documentation of the usability inspection and recommendations of improvements.

Technology and Business:

How could a Business Model for this software product look like? **In your answer the following should be included**:

- The Business Model Canvas.
- Examples of similar software that might be a competitor.
- An answer to what value the product creates for the user.