

## Interdisciplinary Project

**Project start:** Wednesday 3<sup>rd</sup> of May at 12.30.

**Project upload:** on Fronter: Friday 19<sup>th</sup> of May at 12.00

**Show-off Presentations:** for the class: Friday 19<sup>th</sup> of May at 13.00. 5 minutes per group.

**Official Presentation for teachers and feedback from teachers:** Wednesday 24<sup>th</sup> of May. Starting at 8.30. This is your chance to show the teachers that you covered all the requirements of the assignment, and have balanced your work effort in a professional and effective way. All teachers will be present. Individual group times are coming later.

All presentations take place in the normal classroom.

## Assignment

The central theme will be a booking/reservation system that includes a database/datamodel, front-/backend programming and a user experience optimized interface.

Regarding the case choose one of the following options for the project:

- a) A system for ordering chinese fast food
- b) A reservation system for a youth hostel
- c) A booking system for a cult movie cinema
- d) Your own project/idea that resembles the three options mentioned above regarding complexity. The project/idea has to be approved by one of the lecturers.**

Below you will see a list of requirements for the product and the report from each of the subjects.

## Interface Design

Design a website that provides customers with a fitting user experience. Document your work by answering the following questions in the report.

- Explain what User Experience is, in the context of Interface Design. Use the articles from lecture 1, 3, 10 and 11 in Interface design.
- Explain how you have worked with user experience in your project, by addressing these two sub-questions.
  - **Why this experience?** What experience do you want users to have, and why do you believe this experience is the right one? You can use Allan Coopers Goal Directed Design process as a guide to answer this question. The question is related to the topic User Research.
  - **How do you make an experience?** Describe what you designed, and document how the designed interactions adds qualities to the meta-experience. Answering this questions might include considerations concerning:
    - Aesthetic interaction qualities.
    - Priority of content and communication strategy.
    - Animations or elements that show feedback, signifiers, mapping.

- Navigation patterns that fit the use situation and platform.
- Use of Metaphors or Idioms.

## Databases

You must make a database to contain the data needed for the chosen project. Your logical model must contain at least 4 classes/entity-types and at most 6 classes/entity-types.

The report must contain the following parts:

- A logical model made as a class diagram in UML or an E/R diagram (the database diagram from SQL Server can't be used as logical model).
- A table design reflecting the logical model including constraints – the script for the create tables and the insert of some test data must be copied into the appendix.
- Examples of at least three relevant SELECT-queries (including what the query is doing). In the queries there must be examples on
  - o Join with at least 3 tables
  - o Left join
  - o Group by having
  - o Nested query/subquery
- An example of a relevant stored procedure with parameter(s) - (including what it is doing)
- An example of a relevant non-trivial view (including what the it is doing)
- An example of a relevant trigger (including what the it is doing)
- An explanation of how concurrency control could be done in one of the functionalities. You don't have to do the full programming of the concurrency control, but it must be explained how it could be done.

## Frontend

### Design part:

Analyze the *design situation* and document your *design process*. Dedicate part of your report to explain what mood and what style you believe will work for the site and its users (this might fit in when you describe user experience). Then explain how your chosen layout supports this mood and style.

- Make a style guide for the new site. The style guide must be an easy to read guide that clearly explain the *why, how and when* of your chosen composition, each color and the different fonts.

### Technical part:

Implement your design following your style guide. How will you implement your design, so that it is easy maintainable?

- Your site should be designed to work on more than one device.
- Your design should not be dictated by Bootstrap, so you are not allowed to use Bootstrap.

When you hand-in your solution, it should be clear which part is the frontend part and which part is the backend part. Write in your report which part of your solution you consider being part of the frontend solution.

## Backend

You must construct an ASP.NET MVC website to act as the backend. You should use the MVC components such as Views and Controllers etc. You should get the dynamic content (bookings etc) for the website from the database. It should be possible to create new dynamic content (bookings etc) from the website. It could be a good idea to put the database on Azure and also to publish the final project to a live url using Azure.

In addition to constructing the ASP.NET MVC website, you must document how it is constructed.

In the report, you must explain how you have applied the following to the solution:

- Entity Framework (and Linq) or other ways of interacting with the database
- Server and client side validation
- Strongly Typed Views and Partial Views.
- Ajax, if you are using it (so this is optional)

You can include small code examples from your project in the report to illustrate these concepts.

The report must also include:

- An overview of the classes used in the solution presented as an UML diagram – you must include all classes.
- An overview and brief explanation of the various controllers you have created.

## Formal requirements

**Report size:** Task report must contain five pages per group member + five pages. (A group of four members will hand in 25 pages in total. 25 pages is absolute maximum).

You must have an introduction in your report, where you describe the system you have chosen to implement (of the options listed) and what functionality you have implemented in your solution.

Also in the report:

- Remember to use correct references for literature.
- Remember to write your names on the report.
- Remember to add page numbers to the report.
- Remember to make a list of content and a list of literature that you have used.

**Evaluation:** Oral feedback based on your report and the group presentation.

**Hand-in:** Hand-in on Fronter. The report and the website must be uploaded to Fronter as a zip file. The report should be a single file.

**Groups:** Each group will have 3-4 members. The teachers organize the groups and a list of group members is available on Fronter.

**The project MUST be passed in order to go to the exam.**