

# Master module 1&2: Project portfolio

## Om kurset

uddannelse	Computer Science
sted	Teorirum 08.2
Undervisningsprog	English
Kursus starter	01-02-2017
Kursus slutter	31-08-2017

The project portfolio will be divided into three smaller subprojects with problems and challenges related to issues covered in three corresponding sections of the Responsive Applications, Web services and Databases (RAWDATA) course. The project portfolio is defined by a set of specific requirements with the intention to develop competence and skills in specific theoretical and practical areas. The goal is that the student, based on knowledge of relevant theory, will obtain skills to the development of responsive applications in a distributed environment, and the approach is, during the project portfolio, to develop a modern complex distributed web application. The contents of the three sections are outlined below.

### Section 1: Databases

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In this section we will design the data used in the project. We will use a large data set in order to be able to create an environment with real life problems with respect to normalization, optimization and complexity. This section of the project will form the data model of the application developed in the project.

### Section 2: Data communication and Network with focus on Web Services

This section is about the backend of the application, the web service interface to the data. By use of solid design principles, the backend is created within the .NET framework and with C# as programming language. We will focus on how to create intuitive and maintainable Restful interfaces to the underlying data model with good support for the frontend developers.

### Section 3: Development of responsive applications

The main goal in this section is to create the frontend of the application by use of modern web development strategies. The foundation is HTML5, CSS3 and JavaScript, and the aim is responsive single-page applications that uses popular tools and frameworks currently used to form the mobile/web applications we use every day.

By completing the project portfolio the student should:

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- Obtain competences to design and create distributed multi-layered applications.
- Obtain competences to design, implement, use and integrate databases in an application context.
- Obtain skills to use the SQL language to express queries, manipulate data and to optimize query processing by use of indexing.

- Obtain competences to develop data models and design databases involving good design principles including conceptual modelling and normalization.
- Obtain skills to design and create interfaces to databases by use of views and stored procedures.
- Obtain competences to develop maintainable, testable, scalable and extendable software, following solid design principles.
- Obtain skills to use the .NET platform and the C# language to create Restful web services to expose data stored in database bases.
- Obtain competences to develop modern single-page responsive web applications based on HTML5, CSS3 and JavaScript.
- Obtain skills to apply state of the art frameworks to develop single-page responsive web-frontends in distributed environments.

#### forudsætninger

The recommended prerequisites are: Some experience with (object-oriented) programming, for example obtained by completing the Introduction to Programming. Basic knowledge about methods in Software Engineering, as can be obtained from for instance the course Modelling and Knowledge Management. Basic knowledge about algorithms. This RAWDATA project portfolio is closely linked to the Responsive Applications, Web services and Databases (RAWDATA) course, thus it is strongly recommended to attend this course in parallel with doing the project.

#### Kursusdage

See the RAWDATA course

Group examination.

Internal examiner and 7 step scale.

#### Eksamensform

The lenght of the group examination including grading:

- 1 student = 30 min.
- 2 students = 60 min.
- 3 students = 75 min.
- 4 students = 90 min.
- 5 students = 105 min.
- 6 students = 120 min.

Project description and group members must be submitted via STADS Online Service no later than Friday 24th February.

#### **Written project portfolio:**

#### Eksamenstidspunkt

Tuesday at 12.00, June 6, 2017 at [Digital Eksamen](#)

#### **Oral examination:**

June 19 (Monday) or June 20 (Tuesday), 2017

You will be informed of details such as exact time and location later

#### Vurdering

The excellent performance: The student demonstrates

- solid knowledge, insight and overview of the subject area;
- demonstrates solid description, competent application, and critical reflection with respect to the command and application of theories and methods;
- demonstrates certainty, conceptual accuracy, and independent and clear organization with respect to structuring and communication.

The good performance: The student demonstrates

- knowledge of and insight into the subject area;
- demonstrates clear description and relatively competent application with respect to the command and application of theories and methods;
- demonstrates clear presentation and organization with respect to structuring and communication.

The performance meeting the minimum requirements: The student demonstrates

- sufficient however limited knowledge of the subject area;
- demonstrates a sufficient account of command and application of theories and methods;
- demonstrates a sufficient, but uncertain presentation with regard to structuring and communication.

Group examination.

Internal examiner and 7 step scale.

The length of the group examination including grading:

Reksamensform

- 1 student = 30 min.
- 2 students = 60 min.
- 3 students = 75 min.
- 4 students = 90 min.
- 5 students = 105 min.
- 6 students = 120 min.

reksamenstidspunkt August 2017.

kursusform                      Supervision meetings in plenum for all students and in groups with supervisor.

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STADS                      kandidat 1. modul

stamdata                      belastning : 15 ECTS

aktivitetskode : U40124

prøveform : Projekt

bedømmelse : 7-trinsskala

censur : Intern censur