IV1201 Design of Global Applications 7.5 credits

Arkitektur och design av globala applikationer

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for IV1201 valid from Autumn 2008

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

- Good knowledge of object-oriented programming.
- Good knowledge of object-oriented design of non-distributed programs.
- Basic knowledge of programming the framework (Java EE or .NET) that will be studied during the course.
- Basic knowledge of processes for software development.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After the course you shall be able to implement a given requirement specification in code that follows architecture and design best practices for Java EE or .NET. The archtectural areas that are studied are security, transactions and persistence (below are examples in theese areas). Your archtitecture and design shall be implemented in code of production quality.

You shall also be able to critically and systematically evaluate different architectures. Note that this is a practic course that focuses not only on creating an architecture but also on implementing it in code.

Thus after completing the course:

- You shall be able to apply important design principles of applications using Java EE or .NET, such as low coupling, high cohesion and encapsulation.
- You shall be able to apply implement security (for example authorization and authentication) in applications using Java EE or .NET. The implementation shall follow common best practices.
- You shall be able to implement transactions (for example isolation and demarcation) in applications using Java EE or .NET. The implementation shall follow common best practices.
- You shall be able to implement persistence in applications using Java EE or .NET. The implementation shall follow common best practices.
- You shall be able to document the architecture in a way that makes it easy to follow for other developers.

Course contents

This is a practic course. Its focus is on implementing a good architecture in code. The course covers solutions satisfying common non-functional requirements and other common architectural issues in distributed systems. The student chooses to study implementations with .NET or Java EE (not both).

The following areas are covered:

- flexible and robust design
- security
- transactions
- persistence
- performance
- packaging
- error handling
- documenting the architecture

The following areas are not covered:

- the deployment view of the architecture, that is network topology, hardware, operating systems, choice of application server and so on.
- software development processes.
- Requirement specifications.

The course does not cover theories for choosing between different architectures for more or less all kinds of system. Instead it presents a few common solutions to a specific problem. The problem that is covered is to create an architecture for a system based on business logic and data. The main focus is on systems with web based user interfaces. The presented solutions require .NET or Java EE.

Since only basic knowledge of Java EE/.NET is required to participate the course also covers theese technologies.

Examination

- TEN1 - Examination, 1.5 credits, grading scale: P, F
- LAB1 - Assignments, 6.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

The course has two subcourses:

- LAB1 (6,0 credits)
- TEN1 (1,5 credits)

The grades are A-F in LAB1 and P/F in TEN1. Grades A-D in LAB1 are only given if the labs are reported on the scheduled seminars during the course. The grade criteria for both LAB1 and TEN1 can be found in the course information.

The final grade is the grade of LAB1. Both subcourses must be passed (grade E) before a final grade is given.

Ethical approach

- All members of a group are responsible for the group's work.

- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.