

T-76.3601 Introduction to Software Engineering Exam, 27.5.2011

Instructions:

- Write your name, student number, degree program and signature in the reserved space below
- Write your name and student number at the bottom of each sheet
- Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page.
- You can answer in English, Finnish or Swedish.

Ohjeita:

- Kirjoita nimesi, opiskelijanumerosi, koulutusohjelmasi sekä allekirjoituksesi alla olevaan tilaan
- Kirjoita nimesi ja opiskelijanumerosi jokaisen paperin alareunaan
- Vastaa kysymyksiin koepaperissa varattuun tilaan. Jos tarvitset lisätilaa, kirjoita paperin takapuolelle.
- Voit vastata englanniksi, suomeksi tai ruotsiksi.

Instruktioner:

- Skriv ditt namn, student nummer, utbildningsprogram samt underskrift i det reserverade utrymmet nedan
- Skriv ditt namn och studentnummer nere på varje ark
- Besvara frågorna i utrymmet på provpappren. Om du behöver mera utrymme kan du skriva på arkets baksida.
- Du kan svara på engelska, svenska eller finska

Question	Multiple choice	Explain terms	Essay 1	Essay 2	Essay 3	Total
Max points	6	6	6	6	6	30

Name/Nimi/Namn: _____

Student number/Opiskelijanumero/Studentnummer: _____

Degree program/Koulutusohjelma/Utbildningsprogram: _____

Signature/Allekirjoitus/Underskrift: _____

Part 1 - Multiple choice questions – 6p

1 point is given for each correct answer.

-½ (minus half) point is given for each incorrect answer.

You do not have to answer to all questions.

Question	Your choice				
	A	B	C	D	E
1. If a Software has presented problems during the Validation of the final product					
2. The following question is about UML diagram types. Which of the following describes State diagrams ?					
3. What's the difference between re-engineering and refactoring?					
4. Which of the following is NOT a MAJOR source of architectural complexity in software development?					
5. Which of the following statements about Service-Oriented Architecture(SOA) is wrong?					
6. What do you have to do in order to get copyright for your software that you developed independently?					

1. If a Software has presented problems during the **Validation** of the final product, which stage of the development probably went wrong? obs: No problems in **Verification** were found.

- A) Modeling
- B) Design and Implementation
- C) Requirements Engineering Process
- D) Marketing
- E) Software Evolution

2. The following question is about UML diagram types. Which of the following describes **State diagrams**?

- A) Shows the activities involved in a process or in data processing
- B) Shows interactions between actors and the system and between system components.
- C) Shows the interactions between a system and its environment.
- D) Shows the object classes in the system and the associations between these classes.
- E) Shows how the system reacts to internal and external events.

3. What's the difference between re-engineering and refactoring?

- A) Re-engineering is constant maintenance of a system. Refactoring occurs only if dramatic change is needed.
- B) Refactoring means constant modifying of the system because of changing needs. Re-engineering aims to create a new system from the scratch.
- C) Constant refactoring aims to keep the system easily maintainable in the future. Re-engineering focuses on restructuring the system to create a new better system.

4. Which of the following is NOT a MAJOR source of architectural complexity in software development?

- A) Size
- B) Important quality requirement
- C) Legislation
- D) Tough domain requirements
- E) Variability

5. Which of the following statements about Service-Oriented Architecture(SOA) is wrong?

- A) Each service produces different and complete task. The services do not interact with each other.
- B) The application uses well defined interfaces to interact with the services. The inner workings of a service are not relevant.
- C) In SOA applications are composed from a set of services.
- D) Reuse is an important factor when designing a service. As such services are most often designed stateless.
- E)None of the above are wrong.

6. What do you have to do in order to get copyright for your software that you developed independently?

- A) Nothing, copyright is an automatic right.
- B) Apply for it in a copyright office.
- C) Apply for it in a patent office.
- D) You can't get copyright for you work.

Part 2 Explain terms – 6p

1point for each

1. Software engineering

2. Risk Management

3. Software Reengineering

4. Pair programming

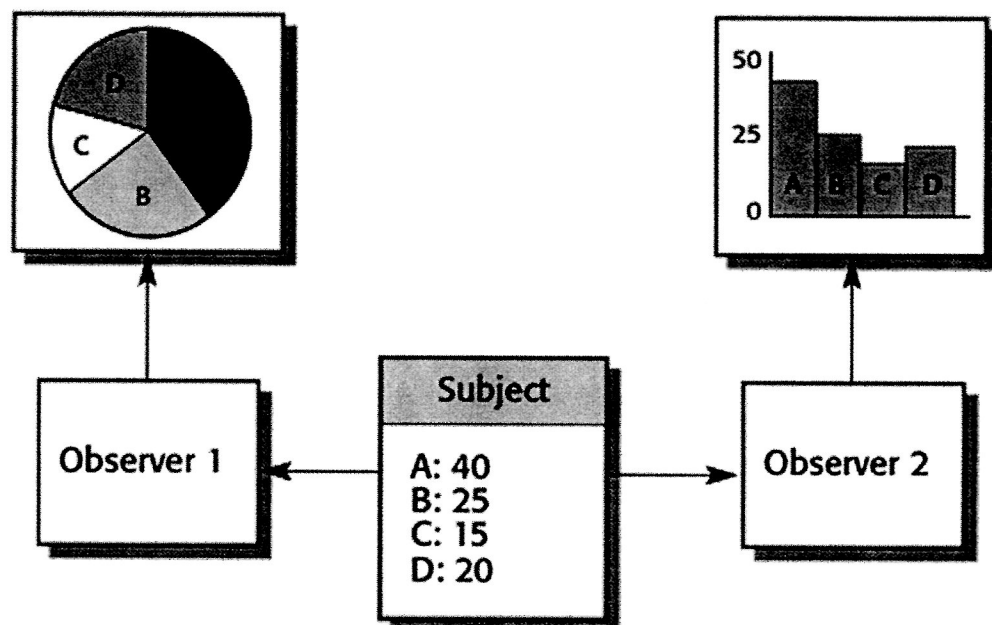
5. Non-functional requirements

6. Architectural views

Part 3 Essays

Essay question 1)

Design patterns. What are they and how can they be useful? How does the figure below relate to design patterns?



Essay question 2

There is a text in *emphasizes* below. What is it a part of? Are items on the right seen as useless? Is each statement implemented in Extreme Programming, describe how?

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Staff turnover	Project	Experienced staff will leave the project before it is finished.
Management change	Project	There will be a change of organizational management with different priorities.
Hardware unavailability	Project	Hardware that is essential for the project will not be delivered on schedule.
Requirements change	Project and product	There will be a larger number of changes to the requirements than anticipated.
Specification delays	Project and product	Specifications of essential interfaces are not available on schedule.
Size underestimate	Project and product	The size of the system has been underestimated.
CASE tool underperformance	Product	CASE tools, which support the project, do not perform as anticipated.
Technology change	Business	The underlying technology on which the system is built is superseded by new technology.
Product competition	Business	A competitive product is marketed before the system is completed.