HÖGSKOLAN VÄST

Written Re-Exam

SEP400 and PVT200

Software Engineering 15 hp (PVT200 7,5 HP)
Exam theory - 4 - hp - U/3/4/5 individual written exam

Date	2024-01-19
Time	8:30 to 12:30
Examiner	Annabella Loconsole
Teachers	Annabella Loconsole, Thomas Lundqvist, Darwen Al-Taeshi
Visit	Yes
Telefon	070 1039816
Help tools	no
Number of exercises	7
Number of pages	3
Max points	Klicka här för att ange text.
Grades interval	Grade 3 18<= X<=23 Grade 4 24<= X<=29 Grade 5 30<= X<=35
Results published	latest 2024-02-09

Good luck!

Exam instructions:

- The exam can be written in Swedish or in English.
- Books or similar are not allowed, only pencils and erasers
- If the question is unclear, choose an interpretation, indicate it and answer the question according to your interpretation.
- Start each question on a new page.
- The answer sheets must be arranged in numerical order.
- You will not be awarded points if the answer is difficult to understand due to unclear handwriting.
- Justify all your answers to the questions.

1. Points: 2+2+1

a. Describe the process of planning a software development project and the activities involved when planning a project.
b. Identify four potential risks in a software development project.
c. Risks can be categorized based on probability and impact. Discuss how this can guide prioritization and mitigation efforts.

2. Points: 1+1+2+2

a. Explain the concept of software process.
b. Identify and discuss activities that are shared across all development processes.
c. Compare and contrast the waterfall model with the incremental model, highlighting their advantages and disadvantages.
d. Describe the core principles of Agile software development.

3. Points: 2+2+1+2

a. Explain the importance of requirements engineering in the software development life cycle.
b. Discuss the challenges associated with gathering and managing requirements.
c. Can you describe the difference between functional requirements and quality requirements?
d. Explain the importance of identifying and engaging stakeholders in the software development process. Why is it crucial to involve stakeholders from the early stages of a project?

4. Poäng: 2+1

a. What is illustrated in a UML sequence diagram?
b. List 4 fundamental questions that should be addressed in architectural design.

5. Poäng: 2+1+2

a. Briefly summarize the test-driven development process
b. What is scenario testing?
c. What tests should be included in object class testing?

6. Points: 4

You recently became responsible for building a heart rate monitor to be used in hospital intensive care units. The device should have a touch screen to be able to see current heart rate and program warning levels. In case of low heart rate, the device should be able to alert the nurses.
Explain what procedures, techniques, and tools you would like to introduce or use to succeed in creating a dependable system. What aspects of dependability are most important?
You are also concerned about security issues. How can you make sure your device will have good security?"

7. Points: 1+2+2

a. Discuss the benefits of embracing software evolution as a natural part of the software development life cycle.
b. Identify and briefly explain three external factors that may influence the need for software evolution in a system.
c. How can technological advancements contribute to the necessity of software evolution?