

School of Computing and Information Technology

CSIT314
Software Development Methodologies
Singapore Institute of Management

Deferred/Supplementary Examination Paper
Session 2 2022

Exam duration	2 hours + 15 minutes for scanning and uploading answers
Weighting	50 % of the subject assessment
Marks available	50 marks
Directions to students	<p>Clearly mark the question numbers. Answer each question on a new page.</p> <p>This paper includes 3 questions.</p> <p>Submit your work in one single file (PDF or Word) to the Final Exam submission site provided on Moodle.</p> <p>To draw diagrams, you can use any tool of your choice (or draw by hand and take pictures – make sure the pictures are all clear). However, you need to insert the diagrams back into the submission file.</p> <p>Submission must be made by the exam end time. Late submission is not accepted. The submission site will automatically be closed after the exam end time.</p> <p>The exam must be completed independently. You must do it on your own and must not discuss, communicate, collude or share you work with any individual or group.</p> <p>When you submit, you acknowledge it is your own work. Plagiarism and other academic misconduct may result in a Fail grade and will be subject to university Academic Misconduct Procedures</p>

Question 1

(20 marks)

Assume that you are asked to design and develop a system that supports software developers in performing software testing.

- Design a set of 10 user stories that are **specifically** to this application. Note that your user stories must reflect the functionalities that are **unique** this kind of application. *Generic user stories for normal software applications (e.g. log in, log out, create or edit account, registration, change password, etc.) will receive 0 mark.*
- Design a UML component diagram for this system. Your component diagram must support the above user stories. *Generic component diagrams will receive 0 mark.*
- Give 3 examples of changes that can be introduced to this system once it has been developed. Each change should represent each type of software maintenance discussed in the subject.

*Your discussion must be **specific** to this case study. Generic answers copied from the lecture slides or other sources will be given 0 mark.*

Question 2

(15 marks)

Assume that a software company is following Rational Unified Process in developing the above software system in Question 1.

Discuss how the company can demonstrate that it meets all the process areas specifically set out for Capability Maturity Model Integration (CMMI) Level 3.

*Your answer must be **specific** to this case study. Generic answers copied from the lecture slides or other sources will be given 0 mark.*

Question 3

(15 marks)

Assume that you are asked to develop a software system for real estate (i.e. selling and purchasing houses and properties).

Propose (and explain your reasons) a functionality of this software that can be developed using the data-driven approach discussed in the subject.

What data should be collected and how to collect them to develop this functionality? What features should be extracted from the collected data and why?

What are the ethical considerations **specific** to this functionality? Discuss how you would address them during the development and operation of the system.

*Your discussion must be **specific** to this case study. Generic answers copied from the lecture slides or any other sources will be given 0 mark.*

End of Examination