

5009CEM Software Development

Module Title Software Development	Ind/Group Individual (Working in a Group)	Module Marks Project 50 Portfolio 25	Module Code 5009CEM
Coursework Title CW Software Development Project			Hand Out Date: 11 April 2023
Lecturer Shahriman Mohd Said			Due Date: 4 July 2023, by 11.59pm
Submission Arrangement Online via Canvas File Types: Link to Repository, Portfolio in Word Document and Canvas submission			
Learning Outcomes Project LO4 - Select, evaluate and use tools and techniques to successfully manage a large scale software project, including configuration management and version control. LO5 - Use a range of appropriate tools to contribute to the development of a solution to a real-world problem. LO6 - Understand and develop success criteria for response to client needs, and develop systematic client communication and care Portfolio LO2 - Understand, demonstrate and critically evaluate how Agile Methodologies can be used to inform definition of users' requirements LO3 - Scope, design, implement and critically evaluate one example of large-scale software quality criteria LO7 - Identify and engage with relevant social, professional, legal and ethical issues on a practical software development project.			

Task

Your task is to build an application for a real company. You will work in group which will be assigned to you randomly, because in real life, you can't choose who you work with, plus I still receive complain even when you choose your own group. The random selection will be done in class.

Do take note that even though this is group project, marks will be given solely on **individual contributions**.

Meeting with the company will be arranged at the start of the semester.

Take note of **the learning outcomes and how it relates to your project**.

Select, evaluate and use tools and techniques to successfully manage a large scale software project, including configuration management and version control.	Include, but not limited to GitHub repository, branching, pull request, merge pull request. User Story mapping and Kanban Board.
Use a range of appropriate tools to contribute to the development of a solution to a real-world problem.	Include, but not limited to Android Studio IDE. Database. Frameworks such as React, Laravel or MVC.
Select, evaluate and apply standards, tools and techniques for assuring software quality.	Include, but not limited test cases, use of Linter, and software like Selenium or Appium.

Project Title

Apartment Management System (AMS)

Apartment Management System (AMS) is a new system implemented in Sparrow Apartment to help computerised certain tasks that have previously been done manually. The first task is tracking visitors entering and leaving the apartment. When a visitor reaches the gate, the guard will record the visitor's particulars like name, car plate number, reason for visit and time in. When the visitor leaves, the exit time will also be captured. At the end of a month, a comprehensive report to track the entry/exit will be generated by the apartment manager.

The second task is to improve record keeping between the apartment team and its residents, via the AMS portal. The apartment manager will create resident account for all residents in the apartment. Once the resident account has been created, the resident will log in and enter the apartment resident's particular like name, vehicle number, e-mail and phone number. In case of emergency, the apartment manager can search for the information via the system. Once a resident obtain an account, he or she can participate in forums available in the AMS system. There are two types of forums, Management forum (if you want to discuss some issues with the management) and Resident forum (if you want to discuss some issues with other residents).

There are multiple bills that the residents need to pay and the AMS system will help keep track of payment records. Two types of bill are monthly maintenance fees and sinking fund. A resident has to log in using his account and choose which bill he wants to pay, then has an option of paying via credit card or PayPal. The apartment manager can generate payment records and send reminders to residents who defaulted. At the end

of the month, the AMS system will send the payment records to a separate Apartment Accounting System. At the end of the month, the system administrator can generate the report on the frequency of help required by company and transfer the record into an external backup drive.

Submission

Project

You are required to demonstrate the outcome of your tasks. The demonstration is face to face. Questions will be asked during the demonstration. You are also required to show the testing here. Failure to attend the presentation will affect your marks.

You are also required to submit the GitHub link where you did the work. Branches, commits, pull request and merge pull request will be checked, so a single upload of the working code will give you less marks.

Submission is via **Canvas**

Portfolio

The Portfolio component is a portfolio demonstrating agile processes (ie. regular SCRUM meetings, evidence of sprint planning, sprint review and sprint retrospective).

Submission is via **Canvas**

Marking rubrics for Project (10 Credits)

	0%	20%	40%	60%	80%	100%
Version Control 25% LO 4	No access given to the repository or code in demo does not match that in repository	Repository publicly visible or limited commits over a short timeframe or not attempt to implement feature branching.	Evidence of regular commits but incorrect implementation of a feature branching model.	Regular commits made with some code added to feature branches but some commits made to the master branch.	Fully correct feature branching with only first commit and merges made to the master branch.	Regular commits using the summary/why/what with branch names linked to issue tracker using pull requests.
Functionality 25% LO 5	No demo or not the correct topic.	A failed attempt to build a working solution based on the assigned topic or solution has security issues. The features attempted must be explained clearly.	4 features fully implemented and demonstrated.	8 features fully implemented and demonstrated.	12 features fully implemented and demonstrated.	12 features plus exception handling and proper comments have been fully implemented and demonstrated.
Code Quality 25% LO 6	Linters fail to run or linter rules changed or code structure differs from the supplied code.	Linters rules changed or linter overrides added to files or duplicate files in different directories.	Code is readable but contains linting errors and warnings or inconsistent organisation of the code or	Code contains linting warnings but no errors. All logic in the modules and file/directory names reflect	Code contains no linting errors or warnings and clean code with descriptive comments.	No linting errors or warnings. Clear and complete auto docs generated and available.

			directory/file names.	purpose.		
Test-Driven Development 25% LO 6	No Test Sets prepared.	Test Sets contains generic description without any clear test values and does not cover all functionalities.	Test Sets contains test values but doesn't cover some areas for all functionalities. Manual testing done.	Test Sets contain test values which cover most area for all functionalities. Some automated testing (1 to 2) is done using software like Selenium or Appium. You are free to use any software.	Test Sets contain test values which cover some areas for all functionalities. Some automated testing (3 to 5) is done using software like Selenium or Appium. You are free to use any software.	Test Sets contain test values which cover most areas for all functionalities. Some automated testing (> 5) done using software like Selenium or Appium. You are free to use any software.

Marking rubrics for Portfolio (5 credits)					
	Marks Below 40%	Marks in the range 40–49%	Marks in the range 50–59%	Marks in the range 60–69%	Marks 70% and above
Understanding and critical thinking (30 marks)	Fails to identify, summarise, or explain the main problem or question. (OR) Represents the issues Inaccurately or inappropriately.	Identifies main issues but does not summarise or explain them clearly or sufficiently	Successfully identifies and summarises the main issues, but does not explain why/how they are problems or create questions	Clearly identifies and summarises main issues and successfully explains why/how they are problems or questions; but does not identify embedded or implicit issues, addressing their relationships to each other	Clearly identifies and summarises main issues and successfully explains why/how they are problems or questions; and identifies embedded or implicit issues, addressing their relationships to each other
Research Skills (30 marks)	Less than 12 marks The use of resources including course presentations or workbooks is mostly unsatisfactory or lacking in imagination. The derivative elements clearly outweigh the more individual ones	Between 12 and 14.9 marks. Generally satisfactory use of resources, including course presentations and workbooks. But there are also a number of examples of mis – or poorly directed use of resources. The derivative elements clearly outweigh the more individual ones	Between 15 and 17.9 marks Relevant resources well used, but there may be a few miscalculations. Some indication of an academic voice may be present, but a good deal of this is clearly derivative	Between 18 and 20.9 marks Very competent use of relevant resources Distinctive ideas are present. Your work will make generalised reference to some appropriate additional sources.	21 marks and higher Imaginative and assured use of relevant resources. Strong and characterful ideas are evident. Clear signs of a distinctive academic voice are present. Your work will draw on several appropriately chosen sources

	Marks Below 40%	Marks in the range 40–49%	Marks in the range 50–59%	Marks in the range 60–69%	Marks 70% and above
Communication skills (20 marks)	<p>There is little evidence of an organised approach to your work</p> <p>The structure of the material presented does not support a clear understanding of the content. Your work will demonstrate a low level of understanding in the use of written English to persuade and articulate. Your work will contain numerous grammatical and spelling inaccuracies. Your work will be unclear, perhaps rambling and unconvincing</p>	<p>Your work will show evidence of preparation and thought. The structure of your work will be adequate, though at times may lack organisation and thought.</p> <p>Adequate use of written English to persuade and articulate. Your work will contain numerous grammatical and spelling inaccuracies. Your work will be unclear, perhaps lacking in detail and confidence</p>	<p>The structure of your work will be generally of a good standard but will demonstrate little more than a basic level of understanding as to how structure can support understanding.</p> <p>A commitment to using written English to persuade and articulate. Your work will contain some grammatical and spelling inaccuracies. Your work will be reasonably clear, detailed, convincing and succinct</p>	<p>You will show evidence of an organised approach to the structure of the content of your work and in the flow and display of materials and supporting information. Convincing use of written English to persuade and articulate.</p> <p>Your work will contain few grammatical and spelling inaccuracies. Your work will be clear, detailed, convincing and succinct</p>	<p>The work displays a consistently clear and coherent structure, designed to fully support any viewer of the information in their complete understanding of the contents.</p> <p>Consistently clear, demonstrating a confident use of written English to persuade and articulate.</p> <p>Your work will contain minimal grammatical and spelling inaccuracies. Your work will be very clear, detailed, convincing and succinct</p>
Knowledge (20 marks)	<p>The analysis presented lacks character, definition and potential for development.</p>	<p>Analysis has been produced but tends to be lacking in strong character.</p>	<p>Some aspects show good definition, others may lack clarity of intent. The outline is generally convincing, though there may be</p>	<p>A convincing analysis is produced, though there may be some feeling that the material's potential is not fully realized.</p>	<p>Very convincing analysis – the material is used to its full potential.</p>

			misgivings about one or more aspects		
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