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| **MIT Award smal(bw)** | **Faculty of Business and Information Technology**  **Software Engineering** |
| **Assessment** | **Group project (Version 2)** |
| **Due Date:** | **Refer to Canvas** |
| **Assessment  Weighting:** | **This assessment contributes 40% towards the course total.** |
| **Student ID(s):** |  |
| **Student Name(s):** |  |
| **Student E-mail(s):** |  |
| **Statement of Original Authorship**  ***I/We* hereby confirm that this assignment is my/our own work. In addition, the assignment has not previously been submitted for assessment, either in whole or in part, by either myself or any other student at either Manukau Institute of Technology or at any other tertiary institution. To the best of my knowledge and belief, the assignment contains no material which has been previously published or written by another person except where due reference has been made. All unpublished sources of information have been acknowledged. I/We make this statement in full knowledge of an understanding that, should it be found false, I/We will, in most circumstances, receive zero marks for this assignment and may face disciplinary action.**   |  |  | | --- | --- | | **Signed by students:** |  | | **Date:** |  | |  |  | | |

**Learning objective(s)**

This assessment is designed towards assessing learning objectives:

* LO2: Demonstrate, evaluate, and apply different software architecture and design patterns
* LO3: Demonstrate and evaluate different software quality attributes
* LO4: Collect and interpret software metrics

**Resource(s)**

You can refer to the lecturer slides, given exercises, and the literature to complete this assessment.

**Team Project**

In this project, in a group of 4-5 students, you are required to study a published software and study its architectural style/pattern, collect and analyse its metrics, and discuss the most related software quality attributes of the software. The software can be any type of software (web, mobile, desktop, integrated, etc.) even a software that you implemented before. However, the software must be complicated enough in terms of architectural complexity. Since collecting and measuring software metrics are also required, it is recommended that you select an open source software, or a software that the source code is available.

Each team needs to identify a project leader. The project leader is responsible for coordinating the project and monitor the progress and deliverables of the project. Moreover, the project leader must coordinate with other project leaders to ensure that each team works on a different software. **Failure to do so will result in 30% penalty on the overall mark**. To put it differently, if more than one team select to analyse the same case study, the given mark will be reduced by 30%.

*Project leaders also need to confirm the case studies with the lecturer before commencing the project.*

At the end of the project, the team is expected to present the project and submit a report explaining the followings:

1. Introducing the software. Use “use cases” and “use case diagram(s)” to explain the software functionalities.
2. Extract the class diagram of the system. You can also use package, component, or model diagrams to better present the structure of the system in case the number of classes are too many. More information about these UML diagrams are [here](http://www.uml-diagrams.org/).
3. Identifying the architectural components and connectors of the software
4. Identifying the architectural style or pattern applied in the software. If enough information is not available to identify the above, you can rely on your judgment and knowledge to identify the style or pattern in which the software was implemented.
5. Explain the reason that particular style/pattern was applied.
6. Present the high level architectural configuration of the software according to the chosen style/pattern. Ensure the proposed architecture is consistent with the UML diagrams provided in steps 1 and 2.
7. Study, evaluate, and analyse what software quality attributes were mostly considered in the software, and the rationale explaining the reason(s).
8. Collect and analyse at least three different software metrics related to the project.
9. The project leader requires to add a section explaining the role of each team member, and whether each member was successful in fulfilling the role.
10. The team members need to add a section explaining whether the project leader successfully managed the project.
11. Each team member needs to add a self-reflection section explaining what was good, what went wrong, the challenges faced during the project, and what they have learnt.

**Assessment conditions**

* Team assignment
* Open book
* No time limits (*please refer to the due date*)

**Marking Scheme and weightage**

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| **Introducing the software (UML Diagrams)** | **6 Mark** |
| **Software Architecture (Components, Connectors, and Configuration)** | **5 Mark** |
| **Software Quality attributes and Analysis** | **4 Mark** |
| **Software Metrics and Analysis** | **5 Mark** |
| **Self-Reflections** | **5 Mark** |
| **Overall report quality** | **5 Mark** |
| **Presentation** | **10 Mark** |

The presentation mark breakdown is:

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| --- | --- |
| Speaker maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.), and is properly dressed. | 2 Mark |
| Speaker uses a clear, audible voice. | 2 Mark |
| Visual aids are well prepared, informative, effective, and not distracting. | 2 Mark |
| Length of presentation properly fits the assigned time frame. | 1 Mark |
| Information was well communicated and good language skills and pronunciation are used. | 3 Mark |

**Assessment matrix**

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|  | **LO2** | **LO3** | **LO4** |
| **Introducing the Software** | √ | √ | √ |
| **Software Architecture** | √ | X | X |
| **Software Quality attributes** | X | √ | X |
| **Software Metrics** | X | X | √ |
| **Overall report quality** | √ | √ | √ |
| **Presentation** | √ | √ | √ |

**Submission**

You are required to submit the report via Canvas by the due date.Moreover, you are also required to present your project. Please note that your submission will be marked only if you **present** your project.

**Failure to present the project and/or submit the report means zero mark for this assessment.**

Each team member must participate equally in the presentation. The project leader is responsible to coordinate this.

A presentation schedule will be provided and you are expected to present on time. Please contact me if you need to reschedule your presentation providing that you have a genuine excuse.

**Late submission**

If you do not submit your report by the due date, I may allow you to hand it in up to 5-days late. In this case a penalty of **5% per day** will be deducted from your mark.

**Feedback**

Please submit your feedback through Canvas.