|  |
| --- |
| **D:\fcuc-logo.png** |
| **FACULTY OF ENGINEERING & COMPUTING** |

|  |  |  |
| --- | --- | --- |
| **Programme** | : | Bachelor of Software Engineering (Hons) |
| **Academic Year** | : | 2019 |
| **Module** | : | Object Oriented Analysis and Design |
| **Module Code** | : | CISY3012 |
| **Module Leader** | : | Kwan Lee |
| **Assignment Type** | : | Report |
| **Intake/Group** | : | Intake/Group |
| **Distribution Date** | : | Wednesday, 16 October 2019 |
| **Submission Date** | : | Thursday, 14 November 2019 4:55 PM |

|  |  |  |
| --- | --- | --- |
| **Student Name** | **Student ID** | **Class Code** |
|  |  |  |

|  |
| --- |
| **Assignment Feedback Form** |
| Object Oriented Analysis and Design |

|  |  |  |
| --- | --- | --- |
| Criteria | Marks | Comments |
| Construct the design steps | / 30 |  |
| Design the Diagram | / 60 |  |
| Format Report | / 10 |  |
|  | Total | ( / 100) \* 20 = |

Marks:

|  |  |
| --- | --- |
| **General Comments:** | |
|  | |
| **Assessor’s Signature**: | **Date:** |
| **Name: Kwan Lee** | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Section: Documentation**  **/100** | | **Excellent** | **Good** | **Satisfactory** | **Marginal** | **Poor** | **Comments** |
| **(Out of 30)** | Construct the design steps |  |  |  |  |  |  |
| **(Out of 60)** | Design the Diagram |  |  |  |  |  |  |
| **(Out of 10)** | Format Report |  |  |  |  |  |  |

|  |
| --- |
| **General Instructions** |
| Use the following format for the preparation of the *assignment submission*.   * Paper size : A4 * Margins: left = 1.5”, right, top and bottom = 1” * Font size : 12 , Times New Roman/Arial * Line spacing : 1.5 * Text alignment : Full Justify * Number all pages sequentially * Number all Figures and Tables sequentially and refer them in the text * Binding: **staple at top left corner** of assignment submission * Reference format: Harvard or IEEE |

|  |
| --- |
| **WARNING** |
| * + Assignments submitted after the due date will be considered late.   + Assignments submitted not later than two weeks after the due date will be marked, but the marks will be capped to a maximum of 10%.   + Assignments submitted later than two weeks will be marked, but carry zero mark.   + First City University College takes allegations of plagiarism very seriously. Submissions involving plagiarism will be marked, but given zero mark. Plagiarism is the attempt to pass off the work of another as your own. Information taken from the work of others should be acknowledged by reference to obviate the charge of copying.   + Collusion is an academic irregularity within the First City University College assessment regulations. Any student found colluding in the production of any assessment will be subject to an investigation with the imposition of any penalty deemed appropriate. Students must ensure they are familiar with the definition of collusion. |

1. **Assignment**

This is an individual assignment and it contributes **20%** of the assessment.

In this assignment, you are required to prepare UML design notation diagram: sequence and activity design based on the given case study:

1. Restaurant Management System

This assignment consists of **TWO (2)** tasks as listed below:

***Task 1 – Construct the Design Steps***

From the case study given, construct the design steps for sequence and activity diagram.

Following are the steps:

1. Sequence

**Sequence Diagram Step**

1. Decide on the context of the interaction: system, subsystem, use case or operation
2. Identify the structural elements (classes or objects) necessary to carry out the functionality of the use case or operation
3. Consider the alternative scenarios that may be required

**Instance sequence diagram steps**

1. Lay out the objects from left to right
2. Starting with the message that starts the interaction, lay out the messages down the page from top to bottom. show the properties of the messages necessary to explain the semantics of the interaction
3. Add the focus of control if it is necessary to visualize nesting or the point in time where an activation is taking place
4. Add timing constraints if necessary
5. Attach annotations to the diagram if required, for example pre- and post-conditions
6. Activity

**Activity Diagram for Business Modelling Steps**

1. Identify business actors and business use cases
2. identifying key scenarios of business use cases, using primary and alternative paths
3. Combining the scenarios to produce comprehensive workflows described using activity diagrams
4. Where significant object behaviours is triggered by a workflow, adding object flows to the diagram
5. Where appropriate, mapping activities to business areas and recoding this using swimlanes
6. Refining complicated high level activities in a similar fashion

**Activity Diagram for Use Case Modelling Steps**

1. Identifying key scenarios of system use cases, using primary and alternative paths
2. combining the scenarios to produce comprehensive workflows describe using activity diagrams
3. where significant object behaviour is triggered by a workflow, adding object flows to the diagram
4. where workflow cross technology boundaries, using swimlanes to map the activities
5. refining complicated high level activities in a similar fashion

***Task 2 – Design the Diagram***

Upon completion on Task 1, design the sequence and activity diagram.

S***ubmission Requirements***

1. Submit a soft copy and a hard copy of your report, following the general instructions described above.
2. Submit a copy of TurnItIn report.

Details of TurnItIn

Class Id : 22698908

Enrollment Key: 1234

1. Submit a copy of your works into GitHub repository.
2. Minimum number of report pages is 7, and maximum number of report pages is 40 pages (excluding the front cover, table of content pages and appendix).

# Case Study

A restaurant management system (RMS) is a type of point-of-sale POS) software specifically designed for restaurants, bars, food tracks and others in the food service industry. Unlike a POS system, and RMS encompasses all back-end needs, such as inventory to staff management. The project aims to create a system for a restaurant that allows the customers to place their order by choosing items from the displayed menu and wait till the food is ready.

List of the system features:

|  |  |
| --- | --- |
| Stakeholder | Features |
| Manager | * Add, delete, edit menu: item, price, promotion (member and non-member) |
| Customers | * Open/renew membership account * Add food/beverages items * Generate bill * Make payment - cash / credit / e-wallet * Reserve/cancel table |

# Learning Outcomes

|  |  |
| --- | --- |
| **Learning Outcomes** | **Assessment Question** |
| 1. Explain the UML design notation and apply it to describe a design | Task 1, 2 |
| 1. Analyse, design and develop an object oriented system taking into account requirements derived from the problem specification | - |
| 1. Produce a detailed rationale for design decisions made and for choosing some methods/tools/techniques rather than others for a given problem | - |
| 1. Critically evaluate and/or perform software development /testing the product in terms of its design and final functionality and critically evaluate the process used to build the product | - |

# Assessment Marking Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Area of concern** | **Excellent** | **Good** | **Satisfactory** | **Marginal** | **Poor** |
| Construct the design steps (30%) | Excellent quality of the design steps explanation. | Well quality of the design steps explanation. | Average quality of the design steps explanation. | Fairly quality of the design steps explanation. | Low quality of the design steps explanation. |
| Design the Diagram (60%) | UML class diagram, overall is clear and complete  Uses UML notation overall are correct | UML class diagram, is clear and complete  Uses UML notation are correct | UML class diagram, average clear and complete  Uses UML notation are somehow correct | UML class diagram, somehow clear and missing some class  Uses UML notation some is incorrect | UML class diagram, is not clear and complete  Uses UML notation are wrong |
| Format Report (10%) | Closely adheres to all formatting requirements.  Clear and concise. Good grammar and spelling. Clear structure. About the right length. Several references, done correctly. | Generally adheres to the specified formatting.  Clear and concise but some grammar/spelling errors. Un-numbered sections/ too informal in places/ too verbose. Some references/ some referencing errors. | Deviates from the formatting requirements.  English is generally: too informal/ not precise/ too glib. Structure not very clear. Possibly not enough info - too short. Hardly any references/ not done correctly. | Significantly deviates from the formatting requirements.  A lot of grammar errors. Not structured as per the spec. Vague and waffle style. No references. badly done references. | Guidelines /requirements of the formatting are largely ignored.  Illiterate. Unable to understand what is meant. |