UOW MALAYSIA KDU PENANG UNIVERSITY COLLEGE

PART OF THE UNIVERSITY OF WOLLONGONG AUSTRALIA GLOBAL NETWORK

ASSIGNMENT COVER PAGE

Validated by: UNIVERSITY OF LINCOLN UNITED KINGDOM

Programme	**Course Code and Title**
Bachelor of Computer Science (Hons)/ Bachelor of Software Engineering(Hons)	CPR3023/N Object Oriented Programming
Student's name / student's id	**Lecturer's name**
	Farhana Aini Binti Saludin

Date issued	**Submission Deadline**	**Indicative Weighting**
Week 4 - 20/02/2023	Week 11 – 14/4/2023	30%
Assignment title	Kid`s Mathematics Application (Group assignment – 3 students in a group)	

This assessment assesses the following course learning outcomes

# as in Course Guide	**UOWM KDU Penang University College Learning Outcome**
CLO2	Develop simple Object Oriented programs using inheritance, polymorphism, and abstraction
CLO3	Build graphical user interface application with events handling
# as in Course Guide	**University of Lincoln Learning Outcome**
CLO3	Apply object-oriented principles to the implementation of software programs
CLO4	Use testing principles in the testing and debugging of object-oriented applications

Student's declaration

I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.

Student's signature: Submission Date:

Dates and Mechanisms for Assessment Submission and Feedback

Mechanism for handout to students	OpenLearning LMS
Mechanism for submission of work by student	*Soft copy online submission via OpenLearning*
Date by which work, feedback and marks will be returned to students	28 May 2023
Mechanism for return of assignment work, feedback and marks to students	Feedback will be provided by a marking template. This will be available to students via Open Learning. The discussions at the walkthroughs will also provide informal feedback

COURSEWORK SUBMISSION GENERAL INFORMATION

Academic integrity statement

You must adhere to the university college regulations on academic conduct. Formal inquiry proceedings will be instigated if there is any suspicion of plagiarism or any other form of misconduct in your work. Students must **NOT** collude with other groups of students or plagiarise their work.

Nature of the submission required

A soft copy of your assignment in **PDF version** should be submitted to lecturer, no later than the date and time stipulated on the cover sheet. In addition, an electronic copy of your work must be submitted to Turnitin. The first page of your report, immediately after the cover page, must be a page from Turnitin clearly showing your name and your Originality Score (Please refer to submission arrangement).

Diagrams may be used where they are helpful to support your arguments or description. If they are not your own work, the source must be referenced. Please help us to handle and mark your work efficiently.

Please take note for group submission, only **one submission per group**. This will contain both the group and individual elements. The individual element must be clearly labelled to indicate which group member completed the task.

Documentation guidelines

Student is required to submit a **SOFT COPY** of the report and ensure that it uses the following formatted styles: 1) Font type: **ARIAL**, 2) Font size: **11 pt**., 3) Line spacing: **Single spacing** and 4) Page layouts: **Justify**. Please make sure you have proper format alignment for all paragraphs, following standard writing style and use **HARVARD CITATION STYLE** for citation. Please include a **HEADER** with the following information: **Student ID, Student name, Course code and Assignment type**. Please also include a proper cover page for your submission which contains information about the students, assignment, course, and department with UOW Malaysia KDU Penang University College and University of Lincoln (UoL) logos on top. Also include page number and a list of references, which is shown on the last page.

Penalties for late submission

For late submission of this Assignment, a penalty of a reduction by 10% of the maximum mark may be applicable for each Calendar Day or part thereof that the submission is late. An Assignment submitted more than **TEN** Calendar Days after the deadline will have a mark of zero recorded for this Assignment.

Submission arrangement

1. Cover page
2. Turnitin similarity report
3. Table of Content
4. Main Report
5. References or Bibliography (whichever applicable)

Assignment instructions/Background

Task A(Group) - Building graphic user interface(GUI) with event handlings (70%)

Kid`s Mathematics Application

You are required to design a kids' mathematic games with the feature below:

Feature 1: addition
- This feature will automatically generate 2 random number from 1-20 and prompt the kid to enter the answer for the addition of 2 random numbers.
- The answer (correct/false) will be stored in relevant variables.
- The feature must able to loop 5 times to get 5 questions and answers.
- At the end of 5 loops, display total number of correct answers and a summary which shows all the questions which are correct/wrong.

Feature 2: minus
- This feature will automatically generate 1 random number (rand1) from 11-20 and 1 random number (ran2) from 1-10 and prompt the kid to enter the answer of the rand1 – rand2.
- The answer (correct/false) will be stored in relevant variables.
- The feature must able to loop 5 times to get 5 questions and answers.
- At the end of 5 loops, display total number of correct answers and a summary which shows all the questions which are correct/wrong.

Feature 3 : multiplication
- This feature will automatically generate 1 random number (rand1) from 1-10 and 1 random number (ran2) from 1-10 and prompt the kid to enter the answer for the multiplication of the 2 numbers.
- The answer (correct/false) will be stored in relevant variables.
- The feature must able to loop 5 times to get 5 questions and answers.
- At the end of 5 loops, display total number of correct answers and a summary which shows all the questions which are correct/wrong.

There are a number of stages in the development. Each stage will be awarded the marks up to the maximum allocated only when handed in and accompanied by a relevant section in the final report. You are required to demonstrate your prototype system by submitting a video clip.

Stage 1: Project requirements, class diagram and GUIs (20%)

Give an analysis of the requirements your project must meet for it to fulfill its intended function. The main things you need to produce are feature lists, class diagram and graphical user interface (GUI) sketches. Design forms WITHOUT functionality (just the GUI appearance). You have to include suitable and relevant information on the form. Use appropriate GUI components (Buttons, textArea, ComboBox, Images, etc).

Stage 2: A basic working version (30%)

Implement the system for GUIs that you designed in Stage 1. At this stage, you are expected to perform error checking for bad input.

Stage 3: Improving your code and innovations (10%)

Your project should include significant original ideas. Adapt the code to be innovative and creative, such as displaying relevant pictures, ask for a names before proceeding to next step.

Stage 4: Final report (10%)

A written report containing the evidence of all completed stages, which should include:

a) Introduction of the prototype model.
b) UML class diagram and designs for the GUIs.
c) Suitable screenshots of the program in operation.
d) Details of any faults and failures, strengths of your system.
e) Conclusions.

The written part should not be more than **2,000 words**.

Task B (Individual)- Testing and Demonstration (30%)

Based on your design and development on the stages above, you are required to do a self-reflection report. The reflection must include the summarized understanding of the system that you designed. You are also required to develop a set of test data for the core functions.

[Note: Each student has to prepare a set of test data and demo on at least one core function that you in charge]

MARKING RUBRIC

CPR3023/N Object Oriented Programming

Assignment

Student ID: _____ **Student Name:** _____
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Task A(Group)- Building graphic user interface(GUI) with event handlings(70%)

LEARNING OUTCOME	MARKING CRITERIA	SCALE						
		Fail (0-49)	**3rd Class (50-59)**	**2nd Lower Class (60-69)**	**2nd Upper Class (70-79)**	**1st Class (80-100)**	**Task Marks (Max. 100)**	**Task Weighted Marks**
CLO3: Build graphical user interface application with events handling	**Project requirements and GUIs (20%)**	No project requirements defined. No class diagram. No GUIs created.	Simple project requirements are defined with very basic GUIs. No appropriate GUI components and poor class diagram.	Simple project requirements are defined and basic GUIs with some appropriate GUI components and class diagram.	Appropriate project requirements are defined and adequate GUIs with some appropriate GUI components and class diagram.	Excellent project requirements and GUIs with appropriate GUI components and class diagram.		*0.20=
	A basic working version (30%)	Program does not able to compile.	Program executed with runtime error but achieve partial program requirements.	Program executed error free with limitations to achieve minimum program requirements.	Program executed error free with correct output and achieve all program requirements.	Program executed error free with excellent output with appropriate validation.		*0.30 =
	Improving code and innovations (10%)	No improvement of code and innovation. Very poor coding which is hard to understand. Little use of comments. Poor naming of classes, methods and variables.	Some improvement of code but no innovation. A very little use has been made of comments, or the naming of classes, methods and variables.	Some improvement of code and only one innovation. A fair attempt; the code is of reasonable quality with several omissions of naming and use of comments.	Adequate improvement of code and innovations. Generally, a good attempt, making use of comments, and where the majority of classes, variables and methods have been appropriately named.	Excellent improvement of code and innovations. Good use of commenting throughout of classes, methods and variables.		*0.10 =
	Express ideas/discussion in organized structure. (10%)	Most parts of report are unclear, extremely difficult to understand and the organization is haphazard.	Report has a few areas which are difficult to understand, but some parts are comprehensible.	Major parts of the report are comprehensible. Organization has some evidence of structure.	Report is reasonably easy to read and has only minor parts which need clarification. It is reasonably organized.	Report is extremely easy to understand and the structure is well organized. A breeze to read.		*0.10=
							Total (70%)	

Task B (Individual) – Testing and Demonstration (30%)

Student ID: _____ **Student Name:** _____

LEARNING OUTCOME	MARKING CRITERIA	SCALE						
		Fail (0-49)	**3rd Class (50-59)**	**2nd Lower Class (60-69)**	**2nd Upper Class (70-79)**	**1st Class (80-100)**	**Task Marks (Max. 100)**	**Task Weighted Marks**
CLO1: Create a set of test cases using appropriate black and white box analysis	**Summarized the understanding on the topics discussed (5%)**	Student unable to demonstrates accurate, extensive, and deep understanding of the topics, where connection to a wide range of context, and reflection are not evident.	Student strive to demonstrates accurate, extensive, and deep understanding of the topics, where connection to a wide range of context, and reflection are partly evident.	Student strive to demonstrates accurate, extensive, and deep understanding of the topics, where connection to a wide range of context, and reflection are evident.	Student demonstrates accurate, extensive, and deep understanding of the topics, where connection to a wide range of context, and reflection are evident.	Student demonstrates very accurate, extensive, and deep understanding of the topics, where connection to a wide range of context, and reflection are clearly evident.		*0.05=
	Test plan and test data (20%)	No test plan and a set of test data provided.	Poor quality of test plan and test data provided.	Reasonable test plan and test data provided.	Clear test plan and test data provided	Excellent test data provided with excellent test plan		*0.20=
	Clarity (5%)	No apparent logical order of presentation, unclear focus.	Content is loosely connected, transitions lack clarity.	Content is connected, but report transitions lack clarity.	Sequence of information is well-organized for most part, but more clarity with transitions is needed.	Development of report is clear through use of specific and appropriate examples, transitions are clear and create a succinct and even flow.		*0.05=
	Total (30%)							
	Overall score (100%)							