



UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

INFORMATION SYSTEMS DEGREE PROGRAMME

FRIST YEAR

IS1201 – Programming and Problem Solving

Assignment – 1

Assignment Type:	In-Class Assignment
Duration:	1 Hour
Date:	21 st August 2024
Time:	13.30 – 14.30
Evaluation Method:	Individual mark is given to each student based on the completeness of the task.
Submitting media:	.c file to the VLE
Submitting Instructions:	Rename your program file (.c file) to your index number and upload to the given link when you are asked to do so by the instructors.

Implement the following steps using C programming language.

1. Write a C program that calculates the area and perimeter of different geometric shapes (rectangle, circle, and triangle). The program should use following functions for each calculation:

- float calculateRectangleArea(float length, float width)
- float calculateRectanglePerimeter(float length, float width)
- float calculateCircleArea(float radius)
- float calculateCircleCircumference(float radius)
- float calculateTriangleArea(float base, float height)

The user should be prompted to select a shape, input the necessary dimensions, and then the program should call the appropriate function(s) to perform the calculations and display the results.

2. Write a C program that manages a simple student record system. The program should:

- Allow the user to enter the names and grades (integer between 0-100) of up to 10 students.
- Store the names in a string array and the grades in an integer array.
- Provide functionality to:
 - (a) Display all student names and their corresponding grades.
 - (b) Calculate and display the average grade of the class.
 - (c) Find and display the name of the student with the highest grade.
 - (d) Find and display the name of the student with the lowest grade.

The program should use arrays to store and manipulate the student data, and strings to handle the student names.

GENERAL RULES:

You **MUST** sign in the attendance sheet circulate among you during the assignment time. Only the signed students are considered as attempted students.

Using internet is strictly prohibited. If the instructors are detected that you are using the internet, **you will get ZERO (0) marks** without any further investigations.

You can open the web browser ONLY to access to the VLE.

Viraj Welgama

15/08/2024