Faculty of Engineering, University of Jaffna
Department of Computer Engineering
EC2010 – Computer Programming
Lab 07

Date : 2 Dec 2020 **Duration : 2 hours**

Instructions

- Any plagiarized work will be given 0 marks.
- Submit your lab work as a zip file named ***Lab07_20YYEXXX*** *(20YYEXXX – Your Registration Number)* **on/before the given deadline** via teams.
- The zip file should contain all ".cpp" code files and your report
- The report should contain all codes in text format and outputs as screenshots.
- The cpp file **MUST** be named 'Q1', 'Q2' and 'Q3' appropriately. Do not modify these names in any manner. **Do not** even annex your index number to the file name. **Do not** change case.

Q1) Write a class named **Sphere** and include private member attribute **radius**, member functions **setRadius()** and **getRadius()** that can be used to set and view the radius. Further include functions **getArea()** and **getVolume()** to return the area and the volume of a sphere respectively. Comprise the declaration in a complete working program. You may use pi = 3.14.

Q2) Write a program to compare the days taken to produce given number of watches between two manufacturing plants. Design a class for a watch manufacturing plant. Include a member function to calculate how many days it will take to produce any number of watches. Function should accept the number of watches as argument and return the number of days take for the production. Include the following as attributes

a) Functioning hours per day
b) No of watches produced per hour

The program should create **two objects** of the class using array of objects and asks the user for the number of watches and compare the days taken to produce them between two plants and find the plant that taken minimum days for production.

Q3) Print the sum, difference and product of two complex numbers by creating a class named **'Complex'** with separate functions for each operation whose real and imaginary parts are passed by the user.