CS-217: Object Oriented Programming
Mock Final Exam, Spring 2020

Time: 09:30 - 10:30 am (1 Hour)

Date: 9th of June, 2020

Total Marks: 45

Course Instructors: Hassan Mustafa, Naveed Ahmed, Kifayat Ullah Khan, Muhammad Aleem, Jawad Hassan, Hassan Raza.

Division of 1 Hour: Around 40 min for attempt and around 15-20 min. for submission on Slate and email.

How to attempt: Handwritten to be scanned. Further explained below:.

Instructions

1. Mock Final exam is placed on Google Classroom and also emailed to your nu.edu.pk email address. It should be submitted via Google Classroom and email.
2. The **subject of your email** and **name of your pdf file** must be as below. **Otherwise**, **it will not be considered as a submission.**

   Section A : CS217_Mock_Section_A_i19xxxx

   where 'A' is your section. i19 is your batch. Replace 'xxxx', 'A', and 19 with your correct details.
3. Upload your pdf file on Slate and Email to your course Teacher. Email must be from your nu.edu.pk email address.
4. The standard remote mock final exam will be attempted offline in the your own handwriting.
5. You must use A4 size blank white sheets to attempt the exam (portrait format unless a diagram or table requires landscape). Each sheet of the A4 size paper MUST have

the Roll Number, Name, the course code, name of the course and your signature of the student at the top of EACH sheet.

6. You can use cam-scanner, MS lens or an equivalent application to scan and convert your hand-written answer sheets into a SINGLE pdf file (keeping the correct order of pages and question numbers), which you will submit on Slate, and MUST also, email to your concerned course teacher. You will be given 15 minutes for this purpose. The time to attempt is 40 minutes. Altogether, you have 1 hour.

7. Plagiarism of any type will result in zero marks in the mock final exam and may result in F grade in the course. Instructors may conduct vivas of randomly selected students or in case of doubt (significantly different attempt as compared to past performance in the course). Plagiarism includes sharing an attempt to other students (copy provider). Students who are not able to satisfactorily answer instructor's questions (based on the exam as well as slightly lateral but related concepts) during viva will also be considered as a plagiarism case.

Question 1 [45 Marks]

Create a class named **CompVar** having a data member as **composite variable of type struct**, then create 2 objects of class CompVar and add them. You need to overload the addition operator for adding the objects.

Rules:

1. All the values should be set and retrieved only via getter and setter functions. Direct assignment is not allowed at any level.
2. The overloaded operator function must be a non-member function.

Deliverables:

1. Complete code for the above problem (20)
2. Step-by-step explanation of the code (10)
3. Dry run/execution of the code by providing some input values (10). A correct output should be displayed according to the provided input values (5).