FACULTY OF COMPUTER SCIENCE AND ENGINEERING
Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi

Lab Duration: 3 hrs. **CS112 Object Oriented Programming Lab** **Marks: 10**

Lab No: 06 **Instructor: Mr. Usman Haider** **Dated:21/03/2022**

Before performing tasks, keep in mind the following rules:

1. **CHEATING IS NOT ALLOWED. Looking at someone else's screen is also cheating.**
2. **Mobile phone and internet usage are not allowed.**
3. **If you have any queries related to a task, you can ask instructors only. Never talk to each other until you are allowed.**
4. **Do not answer any query until you are asked.**
5. **Perform all the tasks.**
6. **Avoiding any of the above rules will lead to marks deduction.**

TASK 1: Roommate Selection! (5)

There is a speed programming competition in FAST NU Lahore, comprising of 6 different competitions. Being a lodging head, your task is to find out the people of same competitions. For the reason, write a C++ program containing two different classes (Person and Coordinator). The private data of Person will be accessible to the coordinator class. Make two objects of person in coordinator class and prompt each person to enter competition name and University name. If University names of both persons are same, then they will allot a same room. The room number will be equal to the number of characters in larger competition.

Hint: Coordinator class is a friend Person class.

Sample Input 1:

Enter the competition and University name: AIC GIKI
Enter the competition and University name: PC GIKI

Sample Output 1:

Message from the coordinator Person1 and Person2 are roommates, and the room number is 3

Sample Input 2:

Enter the competition and University name: AIC GIKI
Enter the competition and University name: AIC Fast

Sample Output 2:

Message from the coordinator Person1 and Person2 are not roommates

TASK 2: Security protocol! (5)

Consider you are hired as a security officer at an organization, to manage the entry of officers in a restricted area. Officers from different ranks can enter that area, but you must strictly follow a rule for allowing entry to the area. The rule is “If an officer’s Id is equal to its reverse i.e., it is a palindrome. The officer is not allowed to enter the area”.

Your task is to write a program that checks the ID of the officer and allows entry. Also, you are required to keep the count of how many officers have entered the area.

Furthermore, you are required to implement a menu that asks the user to either enter the ID or check the number of officers (count) in the restricted area.

Note: The ID should be of integer type. The officer's information includes ID, name and rank.

Sample Input: