**GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD**

**Practical Examination**

BS (CS) Semester 2nd Examination: Spring 2020

Cr. Hr. 4(3+1) Course Code: CSI-302

Course Title: Object Oriented Programming 4(3-1)

Time Allowed: 60 Minutes Marks: 20

**Instructions:** Take snapshots and then create pdf file to send in email at [abdkhuram@gmail.com](mailto:abdkhuram@gmail.com)

Clearly mention your subject and class with session in subject of email.

**Question 1:** Provide the class definition for the following class. **(10 Marks)**

|  |
| --- |
| **Cat** |
| **- int color;**  **- float weight, height;** |
| **+ Cat(int clr, float wht, float ht);**  **+ void set(int cls, float wht, float ht);**  **+ int getColor( );**  **+ float getWeight( );**  **+ float getHeight( );**  **+ void input( );** //Take input for all data members from user  **+ void display( );** //Display the values of data members |

**Question 2 :** If we look around us we can see there are different kind of buildings. You have to model your class hierarchy to capture some of the buildings that at least includes Factories, Offices, Private Banks(Private), Universities(Private), Hospitals, Stations, Mosques, Houses and Apartments. In addition you may include any others that you want to. In the classification we can see that Banks, Universities, Factories, and Offices are kind of Commercial Buildings, Hospitals, Stations, and Mosques are Public, and Houses and Apartments are Domestic. Your task is:

* Design your complete class hierarchy for these buildings. Your provided class hierarchy should be properly handling the Generalization and Specialization. For example Bank is a Commercial Building so in class hierarchy bank would be like

Commercial

Bank

* Provide class headers for implementation of these buildings. You are not required to provide definitions of your class member functions. Just provide their prototypes and comment out their purposes.

Some of the specifications are given below:

* Every Building would have Area(in sq feet), and Location(Address) that should be provided for every building.
* Buildings can have many floors.
* Houses can have many rooms on a floor.
* Factories can have Stores and Units. Units further can have many rooms and halls.

Similarly you have to analyze other Buildings as well and provide your classes accordingly. **(10 marks)**

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