CS F213: OOP Lab 3 – Inheritance

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3rd September 2019

General instructions:

1. Read the question carefully
2. Indent your code so as to make your code more readable and amenable to debugging

Let us continue our exploration of BITS-Pilani, Chandigarh campus. This lab will do that using the concept of inheritance.

In this lab, we will be following a bottom-up approach towards the design of the new campus. We start with the basic unit, a room. In our design of the campus, **a collection of many such rooms will constitute a building**. So far, the campus can only have 2 kinds of buildings, `Hostel` and the `AcadBlock`.

Now, clearly since we have 2 kinds of buildings, it is only logical that there will be 2 kinds of rooms: `HostelRoom` and `ClassRoom`.

The **`Campus` can be considered as the collection of all buildings** within it. We are constrained by the limited space available to have at most 10 hostels and exactly 1 academic block.

Follow the steps below, carefully:

1. Download the docs.zip from the Gitlab repository and extract it.
2. Open index.html. The Javadoc contains all the information about all the classes and methods to be created.
3. This lab requires you to make 7 classes: **`Campus, CampusBuilding, Hostel, AcadBlock, Room, HostelRoom,`** and **`ClassRoom`**
4. Make sure the function signatures match those that are mentioned in the Javadoc.
5. All calculations are of type `int` only.

The testcases are as follows:

a. HostelRoom: calculateMaintenanceCost(): 2 marks
b. ClassRoom: calculateMaintenanceCost(): 1 mark
c. ClassRoom(int length, int breadth, int height) and HostelRoom(int length, int breadth, int height): 2 marks
d. AcadBlock(String name) and Hostel(String name): 1 mark
e. Hostel: calculateMaintenanceCost() and AcadBlock: calculateMaintenanceCost(): 1 marks
f. CampusBuilding(String name): 1 mark
g. Campus: calculateCampusMaintenance() and getName(): 2 marks