

CS F213 Object Oriented Programming Lab-1

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August 20, 2019

Disclaimer: It is all purely fictional. Any resemblance to anything or anyone real or imagined must be taken as a real failure of imagination.

The objective of this lab is to test the understanding of constructors, arrays and function calls in Java.

1. General Instructions

- (a) READ THE QUESTION PROPERLY BEFORE ATTEMPTING.
- (b) DO NOT COMPILE THE CODE ON AUTOLAB. ALL THE LOGS OF SUBMISSION WILL BE THOROUGHLY CHECKED AND ANY COMPILATION ERROR ON AUTOLAB MAY RESULT IN UNDESIRABLE SITUATIONS.

2. Problem Statement:

BITS Pilani is opening a new campus in Chandigarh! It is now your duty to design the dorms architecture in the brand new BITS Pilani Chandigarh Campus.

In this lab you will have to create two classes Dorm and Campus.

A Dorm have a fixed capacity of guests which can stay in that dorm. A dorm also have certain furniture items which we add further.

A Campus can have multiple dorms. Guests can checkin through the campus. We can also add furniture to a particular dorm from the Campus itself.

Follow the steps carefully:

- (a) Download the docs.zip from the gitlab repository and extract it.
- (b) Open index.html page. This page contains all the information about the class and methods to be created.
- (c) For this lab, you have to create two classes named 'Dorm' and 'Campus'. Define the properties and methods as described in the javadoc.
- (d) Go through the javadoc carefully, and take care of the method signatures.
- (e) No main method has to be created in any class.
- (f) Make sure the parameter types, return types, and print statements match exactly as given in the javadoc.
- (g) Create a repository named 'Lab1' on your Gitlab account and upload your solution according to the directory structure and filenames provided in the AutolabJS instructions and javadoc.
- (h) Submit on AutolabJS for 'Lab1'.

Note:

- (a) You can declare and create a new array, using the new operator. For example, an int array of size 100 can be declared like this:

```
int[] sampleArray = new int[100];
```

- (b) Since you are using 'Dorm' class in 'Campus', all the class files should be in the same directory for the import to work correctly.
- (c) All calculations are of integer type. Do not use any other datatype for the same.
- (d) You can submit any number of times till the deadline ends.
- (e) For final consideration, only your best score across all submissions will be taken.

3. Test Cases Details:

Dorm Class(4 marks):

- (a) Test Case 1 (1 mark):
 - i. Constructor
 - ii. Variable Declaration
- (b) Test Case 2 (1 mark):
 - i. getFurnitureCount()
 - ii. getFurniture(int index)
 - iii. addFurniture(String furniture)
- (c) Test Case 3 (2 mark):
 - i. getGuestCount()
 - ii. getEmptyCapacity()
 - iii. checkIn()
 - iv. checkOut()

Campus Class(6 marks):

- (a) Test Case 4 (1 mark):
 - i. Constructor
 - ii. Variable Declaration
- (b) Test Case 5 (1 mark):
 - i. addDorm()
- (c) Test Case 6 (2 mark):
 - i. getFurnitureCount()
 - ii. insertFurniture(int index, String furniture)
- (d) Test Case 7 (2 mark):
 - i. checkIn()
 - ii. checkIn(int index)
 - iii. checkOut(int index)