CSCI 2073 – Programming Assignment 2

You are a member of a programming team developing software for a new room rental service, called MyBnb. Another member of the team has developed the *RentalRoom* class, which has been provided to you. A rental room includes an ID, the number of beds, and availability (see partial Javadoc documentation below).

Constructor Summary

Constructors

Constructor	Description
`RentalRoom(String id, int beds)`	Constructor to initialize the property ID and number of beds for a rental room.

Method Summary

All Methods | **Instance Methods** | **Concrete Methods**

Modifier and Type	Method	Description
`String`	`getID()`	Returns the property ID corresponding to the room
`int`	`getNumBeds()`	Returns the number of beds in the room
`boolean`	`isAvailable()`	Returns the availability status of the room
`void`	`setAvailable(boolean isAvailable)`	Changes the availablity status of the room

Your task is to develop the **MyBnb** class, which is required to use and manage an ArrayList of *RentalRoom* objects. The **MyBnb** class will have, at a minimum, the following public methods:

- a constructor with signature `MyBnb(String filename)` to read information about all the rooms to be managed from a file whose name is provided as argument. The file will contain a number of lines, with each line containing a room ID, followed by a space, followed by an integer representing the number of beds in the room. A sample file (rental1.txt) has been provided as an example.
- `int` method `numberOfRooms(int beds)` which returns the number of rooms with the number of beds matching the value given as argument
- `String` method `chooseRoom(int minBeds)` which chooses the first available room with at least the number of beds specified as argument. The room ID is returned and the room should be no longer available for renting. If no suitable room is available, the method returns "NONE"
- `int` method `numberOfStaffNeeded()` which returns the number of staff members needed to clean the rooms that are currently occupied (not available). The number of staff members is calculated as follows:
  - two staff members are needed to clean each room with three or more beds
  - one staff member is needed for each group of three one-bed rooms (one additional staff member is required if there are one or two one-bed rooms not included in a group of three)

To test the basic syntax and functionality of your class, the *RoomsTest.java* program should be downloaded and stored in the same folder as *RentalRoom.java* and your *MyBnb.java* solution. Compile and execute *RoomsTest.*

If this test program and your class do not work well together, you need to modify your class, not the test program. Once the test program works with your class as expected, submit the Plip.java file to codePost.io for final testing.

Be sure to document your code using Javadoc format. Each of your classes must have the following documentation at the top of the .java file:

```
/**

   Date:
   Course:
   Description:
   On my honor, I have neither given nor received unauthorized help while
   completing this assignment.
   Name and CWID.

*/
```

Each of your methods must have the following documentation preceding the method header:

```
/**

   Method description
   @param arg description of each arg        // One per argument
   @return description of value returned     // At most one per method

*/

public int sample(String arg)

{

}
```