Question

1. Create the following classes:

- class Student
    - Instance variables:
        - String name
        - int id
    - Constructor
        - Student(String name, int id)
            - Assign the value of parameter to instance variable using this keyword
    - Methods:
        - Getter and setter methods for name and id
        - display() – print the value of name and id

- class FirstYear extending Student
    - Instance variables
        - String favoriteSubject
    - Constructor
        - FirstYear(String name, int id)
            - Call parent class constructor by passing name and id as parameter
    - Methods:
        - Getter and setter method of favoriteSubject
        - display() - call parent class display method and then print the value of favoriteSubject

- class FinalYear extending Student
    - Instance variables:
        - String projectName
        - String supervisorName
        - boolean submitted
    - Constructor
        - FinalYear(String name, int id, String projectName)
            - Call parent class constructor by passing name and id as parameter
            - Assign the value of project name in instance variable
            - Initialize the value of submitted to false
    - Methods:
        - Getter and setter method of all instance variables
        - submit(String supervisorName):
            - Assign the value of parameter to its instance variable
            - Update the value of submitted to true
        - display() – call parent class display method and print all the value of instance variable

Create a class StudentEntry with the following: *(You can use any layout manager)*

- Instance variable: ArrayList<Student> students
- For FinalYear:
    - Add FinalYear Button:
        - Create three text fields to enter the id, name and project name
        - Create an object of FinalYear by passing the value of name, id and projectName as parameters
        - Add the object of FinalYear in the array list
    - Submit FinalYear Button
        - Create two text fields to enter the id and supervisor name
        - Check if the valid id is entered, if the id is valid then call the submit method of FinalYear with supervisorName as parameter.
    - Display FinalYear Button
        - Using for each loop, check if the object is of FinalYear and if it is then display all the values related to FinalYear.

          Hints

            - *Since the array list stores the instance of both FirstYear and FinalYear object, using* ***instanceof*** *operator check if the object is of* FinalYear *or not, if it is, then use the concept of down casting and cast it to* FinalYear*.*
            - *You can use TextArea to display the values in the GUI (you textArea.setEditable(false) to disable editing)*

- Repeat similar process for FirstYear.