Question

1. Create the following classes:

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

- class FirstYear extending Student
    - Instance variables
        - String favoriteSubject
    - Constrictor
        - FirstYear(String name, int age)
            - Call parent class constructor by passing name and age 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 age, String projectName)
            - Call parent class constructor by passing name and age as parameter
            - Assign the value of projectName 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 FirstYear:
    - Create three text fields to enter the name, age and favorite subject
    - Add FirstYear Button:
        - Create an object of FirstYear by passing the value of name and age as parameters
        - Using this object, call setter method of favoriteSubject by passing the value from text field
        - Add the object of FirstYear in the array list
    - Display FirstYear Button
        - Using for each loop, check if the object is of FirstYear and if it is then call display method of FirstYear and also display in the GUI.

Hints

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

- Repeat similar process for FinalYear.