

**3. Create a desktop java application using swings to enable an user to enter student information such as name, usn, age, address, sgpa of 8 semesters, category.**

- **Perform validations on age and sgpa. Display appropriate messages in pop up boxes to indicate wrong entries,.**
- **On clicking of the “compute” button, find the cgpa based on the obtained sgpa’s.**
- **On clicking of the “done” button, place the student details in a collection.**
- **A click on the “display” button should display the collection in a textarea.**

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public class Student {
    String name, usn, address, category; int age;
    float cgpa;
    public Student(String name, String usn, String address, String cat, int age, float cgpa) {
        this.name = name;
        this.usn = usn;
        this.address = address;
        this.category = cat;
        this.age = age; this.cgpa = cgpa; }
    public String toString() {
        String stud = name + " " + usn + " residing in " + address + " belonging to category " + category + " of age " + age; stud += "has cgpa " + cgpa; return stud; }
    }
import java.awt.*;
import java.awt.event.*;
//import java.awt.event.ActionListener;
import java.util.LinkedList;
import javax.swing.*;
public class StudentClass implements ActionListener{
    LinkedList stud_list = new LinkedList();
    JLabel jl1 = new JLabel("Enter Name");
    JLabel jl13 = new JLabel("Enter usn");
    JLabel jl2 = new JLabel("Enter Age");
    JLabel jl3 = new JLabel("Enter Address");
    JLabel jl4 = new JLabel("Select category");
    JLabel jl5 = new JLabel("Enter sgpa of I sem");
    JLabel jl6 = new JLabel("Enter sgpa of II sem");
    JLabel jl7 = new JLabel("Enter sgpa of III sem");
    JLabel jl8 = new JLabel("Enter sgpa of IV sem");
    JLabel jl9 = new JLabel("Enter sgpa of V sem");
    JLabel jl10 = new JLabel("Enter sgpa of VI sem");
    JLabel jl11 = new JLabel("Enter sgpa of VII sem");
    JLabel jl12 = new JLabel("Enter sgpa of VIII sem");
    JLabel jcgpa = new JLabel("CGPA obtained");
    JTextField name = new JTextField(20);
    JTextField usn = new JTextField(20);
    JTextField age = new JTextField(3);
    JTextArea address = new JTextArea(3, 4);
    JComboBox cat = new JComboBox();
    JTextField cgpa = new JTextField(10);
    JTextField sgpa1 = new JTextField(5);
    JTextField sgpa2 = new JTextField(5);
    JTextField sgpa3 = new JTextField(5);
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JTextField sgpa4 = new JTextField(5);
JTextField sgpa5 = new JTextField(5);
JTextField sgpa6 = new JTextField(5);
JTextField sgpa7 = new JTextField(5);
JTextField sgpa8 = new JTextField(5);
JButton submit = new JButton("compute");
JButton done = new JButton("done");
JButton display = new JButton("display");
JTextArea stud_list_display = new JTextArea(20,20);
JFrame f1=new JFrame("Student Information");
JFrame f2=new JFrame("Student Collection Display");
StudentClass() {
//JFrame f1=new JFrame("Student Information");
jl1.setBounds(10,10,10,10);
cat.addItem("GM");
cat.addItem("SC/ST");
at.addItem("Cat1");
cat.addItem("Cat2");
f1.add(jl1);f1.add(name);
f1.add(jl13);f1.add(usn);
f1.add(jl2);f1.add(age);
f1.add(jl3);f1.add(address);
f1.add(jl4);f1.add(cat); f1.add(jl5);f1.add(sgpa1);
f1.add(jl6);f1.add(sgpa2);
f1.add(jl7);f1.add(sgpa3);
f1.add(jl8 );f1.add(sgpa4);
f1.add(jl9);f1.add(sgpa5);
f1.add(jl10);f1.add(sgpa6);
f1.add(jl11);f1.add(sgpa7);
f1.add(jl 12);f1.add(sgpa8);
f1.add(jcgpa);f1.add(cgpa);
f1.add(submit);f1.add(done);
f1.add(display); f2.add(stud_list_display);
f1.setSize(900,800);
f1.setLayout(new GridLayout(8,8));
f1.setVisible(true);
submit.addActionListener(this);
done.addActionListener(this);
display.addActionListener(this); }
public void actionPerformed(ActionEvent evt) {
    if(evt.getSource()==submit) {
//check for validations
try { int v1=Integer.parseInt(age.getText()); if(v1>135) {
    String age1=JOptionPane.showInputDialog(null,"Enter valid Age");
    age.setText(age1); }
    } catch(NumberFormatException e) {
JOptionPane.showMessageDialog(f1, "Invalid entry"); age.requestFocus(); }
checkSGPA_valid(1,sgpa1);
checkSGPA_valid(2,sgpa2);
checkSGPA_valid(3,sgpa3);
checkSGPA_valid(4,sgpa4);

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checkSGPA_valid(5,sgpa5);
checkSGPA_valid(6,sgpa6);
checkSGPA_valid(7,sgpa7);
checkSGPA_valid(8,sgpa8);
float cal_cgpa = calculate_cgpa();
cgpa.setText(Float.toString(cal_cgpa)); }
else if(evt.getSource()==done)//to submit into collection
{ Student s1 = new
Student(name.getText(),usn.getText(),address.getText(),String.valueOf(cat.getSelectedItem()),
Integer.parseInt(age.getText()),Float.parseFloat(cgpa.getText())); stud_list.add(s1); }
else {
f1.setVisible(false);
f2.setVisible(true);
f2.setSize(500,500);
stud_list_display.setText(" ");
for(Student s:stud_list) {
stud_list_display.append(s.toString()+"\n"); }
}
float calculate_cgpa() {
float v1 = Float.parseFloat(sgpa1.getText());
float v2 = Float.parseFloat(sgpa2.getText());
float v3 = Float.parseFloat(sgpa3.getText());
float v4 = Float.parseFloat(sgpa4.getText());
float v5 = Float.parseFloat(sgpa5.getText());
float v6 = Float.parseFloat(sgpa6.getText());
float v7 = Float.parseFloat(sgpa7.getText());
float v8 = Float.parseFloat(sgpa8.getText());
return (v1+v2+v3+v4+v5+v6+v7+v8)/8; }
void checkSGPA_valid(int sem,JTextField sgpa) {
try { if(Float.parseFloat(sgpa.getText())>10) {
String v1 = JOptionPane.showInputDialog(null,"Enter an SGPA less than or equal to 10 for sem
"+sem); sgpa.setText(v1); } } catch(NumberFormatException e) {
String v2=JOptionPane.showInputDialog(null, "Please enter SGPA for semester "+sem);
sgpa.setText(v2); //sgpa.requestFocus(); }
}
public static void main(String args[]) {
StudentClass sc = new StudentClass();
}
}

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