STUDENT MANAGEMENT SYSTEM

(VERSION 2)

Programming Project 2022

JANUARY 7, 2022

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1.Classes:

AddStudent

2.Libraries:

- java.awt.event;*.
- javax.swing;*.
- javax.swing.JFrame;
- java.awt.Color;*.
- java.awt;*.
- java.io.*;

3.Method:

1) Interface

Main

```
228  ▶    public static void main(String[] args) {
229           new AddStudent();
230       }
```

● Enter personal information.

Student First Name :	
Student Last Name :	
ID:	

your payment

The year you joined

● Chosess to Check from 7 courses.

Choose the courses you want (knowing that minimum number of courses is 3) :

- ☐ intro Computer Science
- ☐ programming1
- ☐ intro to data science
- ☐ Linear Algebra
- ☐ Calculus
- ☐ critical thinking
- ☐ Political Science

● Show Balance in message when click on button (show)

Show required to pay

Show

Message ×

ⓘ intro to computer science(3h) : 900
programming1(3h): 900
intro to data science (3h) : 900
critical thinking (2h) : 600

Total: 3300.0

OK

● <u>Show Statue of Student</u>

status	Reset

```
------------------Add New Student ------------------
Student Name: Abdelrahman
Student last Name: RAslan
ID: 1235
Your payment : 1000
Year you joined  : 2022

Wants to Join in intro to computer science
Wants to Join in programming 1
Wants to Join in  intro to data science
Wants to Join in calculus
```

status	Reset

```
------------------Add New Student ------------------
Student Name: Abdelrahman
Student last Name: RAslan
ID: 1235
Your payment : 1000
Year you joined  : 2022

Wants to Join in intro to computer science
Wants to Join in programming 1
Wants to Join in  intro to data science
Wants to Join in calculus
```

Message   ✕

ⓘ   DATA SAVED SUCCESSFULLY

OK

● <u>Add information to text file</u>

📄 student - Notepad

File Edit Format View Help

```
--------------------------------------Add New Student -------------------------------------------------------
Student Name: Abdelrahman
Student last Name: RAslan
ID: 1235
Your payment : 1000
Year you joined  : 2022

Wants to Join in intro to computer science
Wants to Join in programming 1
Wants to Join in  intro to data science
Wants to Join in calculus
```

Message   ✕

ⓘ   DATA SAVED SUCCESSFULLY

OK

2) Code

```java
package Project_GUI_v2;
import  java.awt.event.*;
import javax.swing.*;
import javax.swing.JFrame;
import static java.awt.Color.*;
import java.awt.*;
import java.io.*;
public class AddStudent extends JFrame implements ActionListener {
    JLabel l1, l2, l3, l4, l5, l6, l7,l8;
    JTextField t1, t2, t3, t4,t5;
    JCheckBox checkbox1, checkbox2, checkbox3, checkbox4, checkbox5, checkbox6, checkbox7;
    JButton b;
    JTextArea area2;
    JFrame frame = new JFrame("Student management system");
    AddStudent() {
        frame.setSize(1500, 1500);
        frame.setLayout(null);
        l1 = new JLabel("Add New Student ");
        l1.setBounds(500, 50, 250, 20);
        frame.add(l1);
        l2 = new JLabel("Student First Name :");
        l2.setBounds(50, 100, 250, 20);
        frame.add(l2);
        t1 = new JTextField();
        t1.setBounds(250, 100, 250, 20);
        frame.add(t1);
        l3 = new JLabel("Student Last Name :");
        l3.setBounds(50, 150, 250, 20);
        frame.add(l3);
        t2 = new JTextField();
        t2.setBounds(250, 150, 250, 20);
        frame.add(t2);
        l5 = new JLabel(" ID:");
        l5.setBounds(50, 200, 250, 20);
        frame.add(l5);
        t3 = new JTextField();
        t3.setBounds(250, 200, 250, 20);
        t3.addKeyListener(new KeyAdapter() {
            public void keyTyped(KeyEvent e) {
                if (t3.getText().length() >= 4 )
                    e.consume();
            }
        });
        frame.add(t3);
        frame.add(l5);
        l4 = new JLabel("Choose the courses you want (knowing that minimum number of courses is 3) :");
        l4.setBounds(50, 250, 500, 20);
        frame.add(l4);
        checkbox1 = new JCheckBox(" intro Computer Science ");
        checkbox1.setBounds(50, 280, 500, 20);
        frame.add(checkbox1);
        checkbox2 = new JCheckBox("programming1");
        checkbox2.setBounds(50, 320, 500, 20);
        frame.add(checkbox2);
        checkbox3 = new JCheckBox(" intro to data science");
        checkbox3.setBounds(50, 350, 500, 20);
        frame.add(checkbox3);
        checkbox4 = new JCheckBox(" Linear Algebra");
        checkbox4.setBounds(50, 400, 500, 20);
        frame.add(checkbox4);
        checkbox5 = new JCheckBox(" Calculus ");
        checkbox5.setBounds(50, 450, 500, 20);
        frame.add(checkbox5);
        checkbox6 = new JCheckBox("critical thinking ");
        checkbox6.setBounds(50, 500, 500, 20);
        frame.add(checkbox6);
        checkbox7 = new JCheckBox(" Political Science ");
        checkbox7.setBounds(50, 550, 500, 20);
        frame.add(checkbox7);
        l6 = new JLabel("Show required to pay");
        l6.setBounds(50, 600, 300, 30);
        frame.add(l6);
        b = new JButton("Show ");
        b.setBounds(100, 650, 80, 30);
```

```java
        b.addActionListener(this);
        frame.add(b);
        l7 = new JLabel("your payment ");
        l7.setBounds(550, 80, 300, 30);
        frame.add(l7);
        t4 = new JTextField();
        t4.setBounds(650, 90, 200, 20);
        frame.add(t4);
        l8= new JLabel("The year you joined ");
        l8.setBounds(550,120,200,30);
        frame.add(l8);
        t5= new JTextField();
        t5.setBounds(700, 120, 100, 30);
        t5.addKeyListener(new KeyAdapter() {
            public void keyTyped(KeyEvent e) {
                if (t5.getText().length() >= 4 )
                    e.consume();
            }
        });
        frame.add(t5);
        area2 = new JTextArea();
        area2.setBounds(650, 300, 450, 240);
        frame.add(area2);
        final JButton showStatus = new JButton("status ");
        frame.add(showStatus);
        showStatus.setBounds(650,200, 150, 30);
        JButton b2 = new JButton("Reset");
        frame.add(b2);
        b2.setBounds(850, 200, 150, 30);
        b2.addActionListener(
            new ActionListener() {
                public void actionPerformed(
                        ActionEvent e)
                {
                    area2.setText("");
                    t1.setText("");
                    t2.setText("");
                    t3.setText("");
                    t4.setText("");
                    t5.setText("");
                }
            });
        frame.add(b);
        Color c = new Color(213, 158, 72);
        frame.getContentPane().setBackground(c);
        frame.setVisible(true);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        showStatus.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                area2.setText(
                        "--------------------------------"
                                + "-----------Add New Student ----"
                                + "--------------------------"
                                + "--------------------------"
                                + "-------------------\n");

                area2.setText(area2.getText()
                        + "Student Name: "
                        + t1.getText()
                        + "\n");
                area2.setText(area2.getText()
                        + "Student last Name: "
                        + t2.getText()
                        + "\n");
                area2.setText(area2.getText()
                        + "ID: "
                        + t3.getText()
                        + "\n");
                area2.setText(area2.getText()
                        + "Your payment : "
                        + t4.getText()
                        + "\n");
                area2.setText(area2.getText()
                        + "Year you joined  : "
                        + t5.getText()
                        + "\n");
                if (checkbox1.isSelected()) {
                    area2.setText(area2.getText()
                            + "\n"+"Wants to Join in intro to computer science    ");
                }
```

```java
                if (checkbox2.isSelected()) {
                    area2.setText(area2.getText()
                            +"\n" + "Wants to Join in programming 1   ");
                }

                if (checkbox3.isSelected()) {
                    area2.setText(area2.getText()
                            + "\n"+"Wants to Join in  intro to data science  ");
                }
                if (checkbox4.isSelected()) {
                    area2.setText(area2.getText()
                            + "\n"+"Wants to Join in linear algebra ");
                }

                if (checkbox5.isSelected()) {
                    area2.setText(area2.getText()
                            + "\n"+"Wants to Join in calculus ");
                }
                if (checkbox6.isSelected()) {
                    area2.setText(area2.getText()
                            + "\n"+"Wants to Join in critical thinking  ");
                }
                if (checkbox7.isSelected()) {
                    area2.setText(area2.getText()
                            +"\n"+"Wants to Join in political science");
                }
                if (e.getSource() == showStatus) {
                    try {
                        FileWriter fw
                                = new FileWriter(
                                "student.txt", true);
                        fw.write(area2.getText());
                        fw.close();
                    } catch (Exception ae) {
                        System.out.println(ae);
                    }
                }

                JOptionPane.showMessageDialog(
                        area2, "DATA SAVED SUCCESSFULLY");
            }
        });
    }
    @Override
    public void actionPerformed(ActionEvent e) {
        float amount = 0;
        String msg = "";
        if (checkbox1.isSelected()) {
            amount += 900;
            msg = "intro to computer science(3h) : 900\n";
        }
        if (checkbox2.isSelected()) {
            amount += 900;
            msg += "programming1(3h): 900\n";
        }
        if (checkbox3.isSelected()) {
            amount += 900;
            msg += "intro to data science (3h) : 900\n";
        }
        if (checkbox4.isSelected()) {
            amount += 900;
            msg += "Linear algebra (3h): 900\n";
        }
        if (checkbox5.isSelected()) {
            amount += 600;
            msg += "critical thinking (2h) : 600\n";
        }
        if (checkbox6.isSelected()) {
            amount += 600;
            msg += "political Science (2h) : 600\n";
        }
        msg += "-----------------\n";
        JOptionPane.showMessageDialog(this, msg + "Total: " + amount);
    }
    public static void main(String[] args) {
        new AddStudent();
    }
}
```

1. Declaration of Classes in Java Swing

```
JLabel l1, l2, l3, l4, l5, l6, l7,l8;
JTextField t1, t2, t3, t4,t5;
JCheckBox checkbox1, checkbox2, checkbox3, checkbox4, checkbox5, checkbox6, checkbox7;
JButton b;
JTextArea area2;
JFrame frame = new JFrame( title: "Student management system");
```

- The JLablel class is used to create a label
- The JTextField class to create text field
- The JCheckBox class is used to create a checkbox
- The JButton class to used button
- The JTextArea class to used text area
- The JFrame class to used create frame named by (Student management System)

2.Add Classes to frame by setting Location

```
AddStudent() {
    frame.setSize( width: 1500,  height: 1500);
    frame.setLayout(null);
    l1 = new JLabel( text: "Add New Student ");
    l1.setBounds( x: 500,  y: 50,  width: 250,  height: 20);
    frame.add(l1);
    l2 = new JLabel( text: "Student First Name :");
    l2.setBounds( x: 50,  y: 100,  width: 250,  height: 20);
    frame.add(l2);
    t1 = new JTextField();
    t1.setBounds( x: 250,  y: 100,  width: 250,  height: 20);
    frame.add(t1);
    l3 = new JLabel( text: "Student Last Name :");
    l3.setBounds( x: 50,  y: 150,  width: 250,  height: 20);
    frame.add(l3);
    t2 = new JTextField();
    t2.setBounds( x: 250,  y: 150,  width: 250,  height: 20);
    frame.add(t2);
    l5 = new JLabel( text: " ID:");
    l5.setBounds( x: 50,  y: 200,  width: 250,  height: 20);
    frame.add(l5);
```

3. Make text field max number entered is 4 number

```java
t3 = new JTextField();
t3.setBounds( x: 250,  y: 200,  width: 250,  height: 20);
t3.addKeyListener(new KeyAdapter() {
    public void keyTyped(KeyEvent e) {
        if (t3.getText().length() >= 4 )
            e.consume();
    }
});
```

4.Add checkbox to the frame

```java
checkbox1 = new JCheckBox( text: " intro Computer Science ");
checkbox1.setBounds( x: 50,  y: 280,  width: 500,  height: 20);
frame.add(checkbox1);
checkbox2 = new JCheckBox( text: "programming1");
checkbox2.setBounds( x: 50,  y: 320,  width: 500,  height: 20);
frame.add(checkbox2);
checkbox3 = new JCheckBox( text: " intro to data science");
checkbox3.setBounds( x: 50,  y: 350,  width: 500,  height: 20);
frame.add(checkbox3);
checkbox4 = new JCheckBox( text: " Linear Algebra");
checkbox4.setBounds( x: 50,  y: 400,  width: 500,  height: 20);
frame.add(checkbox4);
checkbox5 = new JCheckBox( text: " Calculus ");
checkbox5.setBounds( x: 50,  y: 450,  width: 500,  height: 20);
frame.add(checkbox5);
checkbox6 = new JCheckBox( text: "critical thinking ");
checkbox6.setBounds( x: 50,  y: 500,  width: 500,  height: 20);
frame.add(checkbox6);
checkbox7 = new JCheckBox( text: " Political Science ");
checkbox7.setBounds( x: 50,  y: 550,  width: 500,  height: 20);
frame.add(checkbox7);
```

5.Add a button with action show total of courses

```java
        b = new JButton( text: "Show ");
        b.setBounds( x: 100, y: 650, width: 80, height: 30);
        b.addActionListener( l: this);
        frame.add(b);
```

```java
    public void actionPerformed(ActionEvent e) {
        float amount = 0;
        String msg = "";
        if (checkbox1.isSelected()) {
            amount += 900;
            msg = "intro to computer science(3h) : 900\n";
        }
        if (checkbox2.isSelected()) {
            amount += 900;
            msg += "programming1(3h): 900\n";
        }
        if (checkbox3.isSelected()) {
            amount += 900;
            msg += "intro to data science (3h) : 900\n";
        }
        if (checkbox4.isSelected()) {
            amount += 900;
            msg += "Linear algebra (3h): 900\n";
        }
        if (checkbox5.isSelected()) {
            amount += 600;
            msg += "critical thinking (2h) : 600\n";
        }
        if (checkbox6.isSelected()) {
            amount += 600;
            msg += "political Science (2h) : 600\n";
        }
        msg += "----------------\n";
        JOptionPane.showMessageDialog( parentComponent: this, message: msg + "Total: " + amount);
    }
}
```

6.Add text area

```java
        area2 = new JTextArea();
        area2.setBounds( x: 650, y: 300, width: 450, height: 240);
        frame.add(area2);
```

7. Add button show with action to show all typed text and checked box in text area 2 and save them to text file

```java
final JButton showStatus = new JButton( text: "status ");
frame.add(showStatus);
showStatus.setBounds( x: 650, y: 200, width: 150, height: 30);
```

```java
showStatus.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        area2.setText(
                "--------------------------------"
                        + "-----------Add New Student ----"
                        + "-------------------------"
                        + "-------------------------"
                        + "------------------\n");

        area2.setText(area2.getText()
                + "Student Name: "
                + t1.getText()
                + "\n");
        area2.setText(area2.getText()
                + "Student last Name: "
                + t2.getText()
                + "\n");
        area2.setText(area2.getText()
                + "ID: "
                + t3.getText()
                + "\n");
        area2.setText(area2.getText()
                + "Your payment : "
                + t4.getText()
                + "\n");
        area2.setText(area2.getText()
                + "Year you joined  : "
                + t5.getText()
                + "\n");
        if (checkbox1.isSelected()) {
```

```java
        if (checkbox1.isSelected()) {
            area2.setText(area2.getText()
                    + "\n"+"Wants to Join in intro to computer science   ");
        }
        if (checkbox2.isSelected()) {
            area2.setText(area2.getText()
                    +"\n" + "Wants to Join in programming 1  ");
        }
        if (checkbox3.isSelected()) {
            area2.setText(area2.getText()
                    + "\n"+"Wants to Join in  intro to data science  ");
        }
        if (checkbox4.isSelected()) {
            area2.setText(area2.getText()
                    + "\n"+"Wants to Join in linear algebra ");
        }
        if (checkbox5.isSelected()) {
            area2.setText(area2.getText()
                    + "\n"+"Wants to Join in calculus ");
        }
        if (checkbox6.isSelected()) {
            area2.setText(area2.getText()
                    + "\n"+"Wants to Join in critical thinking  ");
        }
        if (checkbox7.isSelected()) {
            area2.setText(area2.getText()
                    +"\n"+"Wants to Join in political science");
        }
        if (e.getSource() == showStatus) {
            try {
```

```java
            try {
                FileWriter fw
                        = new FileWriter(
                        fileName: "student.txt", append: true);
                fw.write(area2.getText());
                fw.close();
            } catch (Exception ae) {
                System.out.println(ae);
            }
        }

        JOptionPane.showMessageDialog(
                area2, message: "DATA SAVED SUCCESSFULLY");
    }
});
}
```

8. Add button with function reset to delete all information written in text area and text fields

```java
JButton b2 = new JButton( text: "Reset");
frame.add(b2);
b2.setBounds( x: 850,  y: 200,  width: 150,  height: 30);
b2.addActionListener(
        new ActionListener() {
            public void actionPerformed(
                    ActionEvent e)
            {
                area2.setText("");
                t1.setText("");
                t2.setText("");
                t3.setText("");
                t4.setText("");
                t5.setText("");

            }
        });
```

----

9. Add color to frame and make a frame visible & add end the program end run when the user used close tab

```java
Color c = new Color( r: 213,  g: 158,  b: 72);
frame.getContentPane().setBackground(c);
frame.setVisible(true);
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
```

We hope that you will like the program

Source Code :

https://drive.google.com/drive/folders/1R4t46cRzAYkyXw6BIdb6EyFpOY7olGSR?usp=sharing

Thank You