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| Computer script on a screen |
| PROG TAKE HOME EXAM  ST10053561 |
| |  |  |  | | --- | --- | --- | | Venkata Vikranth Jannatha | 11/16/22 | PROG6112 | |

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# Question 1:

package home\_exam;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.util.ArrayList;

import javax.swing.\*;

public class Question\_1 implements ActionListener

{

//-----------------------------Buttons-----------------------------//

private final JButton savebutton = new JButton("SAVE");

private final JButton clearbutton = new JButton("CLEAR");

private final JButton Printbutton = new JButton("PRINT");

private final JButton okbutton = new JButton("OK");

//-----------------------------MenuItem---------------------------//

private final JMenuItem sav = new JMenuItem("Save");

private final JMenuItem print = new JMenuItem("Print");

private final JMenuItem clear = new JMenuItem("Clear");

private final JMenuItem exit = new JMenuItem("Exit");

//------------------------JTextField--------------------------------//

private final JTextField textField1 = new JTextField();

private final JTextField textField2 = new JTextField();

private final JTextArea textField3 = new JTextArea(3, 3);

//-----------------------JcomboBox------------------------------------//

private JComboBox combo = new JComboBox();

//--------------------------frame-----------------------------------//

private final JFrame errorFrame = new JFrame();

//------------------------Label---------------------------------//

private final JLabel label = new JLabel();

//-----------------------Panel-------------------------------------//

private final JPanel panel = new JPanel();

private int count = 0;

//--------------------------------------------HospitalInspection()------------------------------------------//

public void HospitalInspection()

{

//These are the hospital inspections frame//

JFrame frame = new JFrame("Hospital Inspections");

String[] years =

{

"1 Years", "2 Years", "3 Years", "4 Years", "5 Years"

};

combo = new JComboBox(years);

//labels//

JLabel label1 = new JLabel("Hospital Name:");

JLabel label2 = new JLabel("Hospital Location:");

JLabel label3 = new JLabel("Years Since Inspection:");

//textfield//

textField1.setBackground(Color.white);

textField2.setBackground(Color.white);

textField1.setPreferredSize(new Dimension(100, 20));

textField2.setPreferredSize(new Dimension(20, 5));

textField3.setPreferredSize(new Dimension(100, 100));

//menu bar//

JMenuBar menu = new JMenuBar();

//menu items

JMenu fileMenu = new JMenu("File");

JMenu toolsMenu = new JMenu("Tools");

menu.add(fileMenu);

menu.add(toolsMenu);

toolsMenu.add(sav);

toolsMenu.add(print);

toolsMenu.add(clear);

clear.addActionListener(this);

print.addActionListener(this);

fileMenu.add(exit);

exit.addActionListener(this);

//Button action//

savebutton.addActionListener(this);

savebutton.setPreferredSize(new Dimension(50, 50));

clearbutton.addActionListener(this);

Printbutton.addActionListener(this);

ImageIcon icon = new ImageIcon("host.PNG");

//Frame layout I used Gridlayout//

frame.setIconImage(icon.getImage());

frame.setLayout(new GridLayout(6, 0, 30, 30));

frame.add(label1);

frame.add(textField1);

frame.add(label2);

frame.add(textField2);

frame.add(label3);

frame.add(combo);

frame.add(new JPanel());

frame.add(savebutton);

frame.add(new JPanel());

frame.add(textField3);

frame.add(Printbutton);

frame.add(clearbutton);

frame.setBounds(500, 100, 500, 570);

frame.setJMenuBar(menu);

// frame.pack();

frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

frame.getRootPane().setBorder(

BorderFactory.createMatteBorder(3, 3, 3, 3, Color.BLACK));

frame.setVisible(true);

}

@Override

public void actionPerformed(ActionEvent e)

{

//These are the particular action events would occur as they click//

if ((e.getSource() == savebutton) || (e.getSource() == sav))

{

//These is for displaying the text of information which user has used//

String show = String.format("Hospital Name : %s \nHospital Location : %s \nYears Since Inspection : %s \n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*", textField1.getText(), textField2.getText(), combo.getSelectedItem());

textField3.setText(show);

textField3.setLineWrap(true);

textField3.setWrapStyleWord(true);

count++;

if(count>5)

{

label.setText("<html><p> Maximum Inspection count Reached! <p></html>");

label.setVerticalTextPosition(JLabel.CENTER);

ImageIcon icon = new ImageIcon("Information Icon.PNG");

Image info = icon.getImage();

Image infoMod = info.getScaledInstance(100, 100, java.awt.Image.SCALE\_SMOOTH);

icon = new ImageIcon(infoMod);

label.setIcon(icon);

label.setHorizontalAlignment(JLabel.LEFT);

panel.setLayout(new BorderLayout());

panel.setBounds(300, 115, 70, 40);

panel.add(okbutton);

errorFrame.setTitle("Message");

errorFrame.setBounds(500, 180, 400, 200);

errorFrame.add(panel);

errorFrame.add(label);

okbutton.addActionListener(this);

okbutton.setBackground(new Color(135, 206, 235));

errorFrame.setResizable(false);

errorFrame.setVisible(true);

}

}

else

{

//This is for clear button//

if ((e.getSource() == clearbutton) || (e.getSource() == clear))

{

textField3.setText("");

}

else

{

//If they user press printbutton then it perform//

if ((e.getSource() == Printbutton) || (e.getSource() == print))

{

ArrayList<String> store = new ArrayList<>();

store.add(textField3.getText());

JList jList = new JList(store.toArray());

}

else

{

//If they press exit button//

if (e.getSource() == exit)

{

System.exit(0);

}

else

{

//if they press ok button//

if(e.getSource() == okbutton)

{

errorFrame.setVisible(false);

}

}

}

}

}

//---------------------------------------------End of Hospital Inspection()----------------------------------------------//

}

}

# Question 2

package home\_exam;

//--------------------------------------------------------Question2-----------------------------------------------------------------//

public class Question\_2

{

//----------------------------------------------------------------PropertyPrices()---------------------------------------------------//

public void propertyPrices()

{

//here I declare the prices in 2d array//

int[][] Prices =

{

{

800000, 1500000, 2000000

},

{

700000, 1200000, 1600000

},

{

750000, 1300000, 1800000

}

};

//I link the method here for displaying and averaging//

displayProperty(Prices);

}

//----------------------------------------------------------------End of PropertyPrices()---------------------------------------------------//

//-----------------------------------------------------------------DisplayProperty------------------------------------------------------//

public void displayProperty(int[][] pr)

{

//Here I declare the headings

System.out.printf("%19s\t\t\t%s\t\t%s", "FLAT", "TOWN HOUSE", "HOUSE\n");

System.out.println("-----------------------------------------------------------------------------");

double avg = 0.0;

double sum;

//I have declare the Places here

String [] place = {"Gauteng","Natal","Cape"};

for (int pla = 0; pla < pr.length; pla++)

{

System.out.printf("%s",place[pla]);

//Here Iam displaying the property prices and getting the avg values of a property//

sum = 0.0;

for (int pri = 0; pri < pr[pla].length; pri++)

{

System.out.printf("\t\t R%d",pr[pla][pri]);

sum += pr[pla][pri];

//Here iam adding up the values of prices to divide the length to get average values//

avg = sum / pr[pri].length;

}

System.out.println();

}

//here iam displaying the values here//

System.out.printf("\nAverage Property prices in Gauteng: R %.0f", avg);

System.out.printf("\nAverage Property prices in Natal: R %.0f", avg);

System.out.printf("\nAverage Property prices in Cape: R %.0f", avg);

System.out.println();

//-----------------------------------------------------------------End of DisplayProperty------------------------------------------------------//

}

//-----------------------------------------------------------------End of Class------------------------------------------------------------------//

}

# Question 3

package home\_exam;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.io.\*;

import java.util.\*;

import javax.swing.\*;

public class Question\_3 implements ActionListener

{

//-----------------------------------JComboBox--------------------------------//

private JComboBox start = new JComboBox();

private JComboBox end = new JComboBox();

private JComboBox travel = new JComboBox();

//---------------------------------Button-------------------------------//

private final JButton sub = new JButton("SUBMIT");

private final JButton okbutton = new JButton("OK");

//-------------------------TextArea--------------------------------//

private final JTextArea display = new JTextArea();

//--------------------------Frame--------------------------------//

private final JFrame messageframe = new JFrame();

//------------------label-----------------------------------//

private final JLabel label = new JLabel();

//-------------------------Panel-------------------------------//

private final JPanel panel = new JPanel();

//--------------------------------------------------Travel--------------------------------------------//

public void travel()

{

String[] locations =

{

"Cape Town", "Durban", "Port Elizabeth"

};

String[] tra =

{

"Airplane", "Train"

};

//Combo boxes

start = new JComboBox(locations);

end = new JComboBox(locations);

travel = new JComboBox(tra);

//Labels//

JLabel label1 = new JLabel("Start Location: ");

JLabel label2 = new JLabel("End Location: ");

JLabel label3 = new JLabel("Travel By: ");

sub.addActionListener(this);

//Frame//

JFrame frame = new JFrame();

frame.setTitle("Travel Log");

ImageIcon image = new ImageIcon("tra.png");

frame.setIconImage(image.getImage());

frame.setLayout(new GridLayout(5, 2, 80, 30));

frame.add(label1);

frame.add(start);

frame.add(label2);

frame.add(end);

frame.add(label3);

frame.add(travel);

frame.add(new JPanel());

frame.add(sub);

frame.add(display);

frame.setBounds(500, 50, 600, 700);

frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

frame.getRootPane().setBorder(

BorderFactory.createMatteBorder(3, 3, 3, 3, Color.BLACK));

frame.setVisible(true);

}

@Override

public void actionPerformed(ActionEvent e)

{

//if user enters the sub button//

if (e.getSource() == sub)

{

String show = String.format("""

TRAVEL LOG

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Destination 1: %s

Destination 2: %s

Travel By: %s

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*""", start.getSelectedItem(), end.getSelectedItem(), travel.getSelectedItem());

//for text display//

display.setText(show);

display.setPreferredSize(new Dimension(500, 500));

display.setLineWrap(true);

display.setWrapStyleWord(true);

try

{

//Here iam creating a sequential data files here//

JComboBox combo = new JComboBox();

FileWriter writeFile = new FileWriter("travel.txt");

writeFile.write(start.getSelectedItem().toString() + "," + end.getSelectedItem().toString() + "," + travel.getSelectedItem().toString());

writeFile.write(display.getText());

writeFile.close();

//this is travel text file which user that stores//

File file = new File("travel.txt");

Scanner Readfile = new Scanner(file);

while (Readfile.hasNextLine())

{

String data = Readfile.nextLine();

System.out.println(data);

String[] store =

{

data

};

combo = new JComboBox(store);

}

} catch (IOException f)

{

System.out.println(f);

}

//if user has the same locations//

if (start.getSelectedItem().equals(end.getSelectedItem()))

{

//This is for displaying messages//

label.setText("<html><p> Destinations cannot be the same!!! <p></html>");

label.setVerticalTextPosition(JLabel.CENTER);

//This is for displaying icon//

ImageIcon icon = new ImageIcon("Information Icon.PNG");

Image info = icon.getImage();

Image infoMod = info.getScaledInstance(100, 100, java.awt.Image.SCALE\_SMOOTH);

icon = new ImageIcon(infoMod);

label.setIcon(icon);

label.setHorizontalAlignment(JLabel.LEFT);

panel.setLayout(new BorderLayout());

panel.setBounds(300, 115, 70, 40);

//messages frames that I displayed//

panel.add(okbutton);

display.setText("");

messageframe.setTitle("Message");

messageframe.setBounds(500, 180, 400, 200);

messageframe.add(panel);

messageframe.add(label);

okbutton.setBackground(new Color(135, 206, 235));

okbutton.addActionListener(this);

messageframe.setResizable(false);

messageframe.setVisible(true);

}

}

else

{

//if user enters the ok button

if (e.getSource() == okbutton)

{

messageframe.setVisible(false);

}

}

}

//-------------------------------------------------------------End of travel--------------------------------------------//

}

# Main Page

package home\_exam;

public class Home\_Exam

{

public static void main(String[] args)

{

//Please make comment for other questions 2 and 3 when you marking for question 1 and it applies for question 2 and 3

//This is for Question 1//

Question\_1 q1 = new Question\_1();

q1.HospitalInspection();

//

//This is for Question 2//

Question\_2 q2 = new Question\_2();

q2.propertyPrices();

//This is for Question 3

Question\_3 q3 = new Question\_3();

q3.travel();

}

}