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**19K-1043**

**BS SE (A)**

**SCD LAB 4**

**Q1**

package swing;

import java.awt.EventQueue;

import javax.swing.JFrame;

import javax.swing.JLabel;

import javax.swing.JOptionPane;

import javax.swing.JTextField;

import javax.swing.JButton;

import java.awt.event.MouseAdapter;

import java.awt.event.MouseEvent;

public class Task1 {

private JFrame frame;

private JTextField x1\_value;

private JTextField y1\_value;

private JTextField x2\_value;

private JTextField y2\_value;

/\*\*

\* Launch the application.

\*/

public static void main(String[] args) {

EventQueue.invokeLater(new Runnable() {

public void run() {

try {

Task1 window = new Task1();

window.frame.setVisible(true);

} catch (Exception e) {

e.printStackTrace();

}

}

});

}

/\*\*

\* Create the application.

\*/

public Task1() {

initialize();

}

/\*\*

\* Initialize the contents of the frame.

\*/

private void initialize() {

frame = new JFrame();

frame.setBounds(100, 100, 450, 300);

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

frame.getContentPane().setLayout(null);

JLabel lblNewLabel = new JLabel("x1");

lblNewLabel.setBounds(10, 21, 46, 14);

frame.getContentPane().add(lblNewLabel);

JLabel lblNewLabel\_1 = new JLabel("y1");

lblNewLabel\_1.setBounds(10, 46, 46, 14);

frame.getContentPane().add(lblNewLabel\_1);

JLabel lblNewLabel\_2 = new JLabel("x2");

lblNewLabel\_2.setBounds(222, 21, 46, 14);

frame.getContentPane().add(lblNewLabel\_2);

JLabel lblNewLabel\_3 = new JLabel("y2");

lblNewLabel\_3.setBounds(222, 46, 46, 14);

frame.getContentPane().add(lblNewLabel\_3);

x1\_value = new JTextField();

x1\_value.setBounds(34, 18, 86, 20);

frame.getContentPane().add(x1\_value);

x1\_value.setColumns(10);

y1\_value = new JTextField();

y1\_value.setColumns(10);

y1\_value.setBounds(34, 46, 86, 20);

frame.getContentPane().add(y1\_value);

x2\_value = new JTextField();

x2\_value.setColumns(10);

x2\_value.setBounds(246, 18, 86, 20);

frame.getContentPane().add(x2\_value);

y2\_value = new JTextField();

y2\_value.setColumns(10);

y2\_value.setBounds(246, 46, 86, 20);

frame.getContentPane().add(y2\_value);

JLabel lblNewLabel\_4 = new JLabel("Distance");

lblNewLabel\_4.setBounds(10, 113, 69, 14);

frame.getContentPane().add(lblNewLabel\_4);

JLabel lblNewLabel\_5 = new JLabel("Radius");

lblNewLabel\_5.setBounds(10, 138, 69, 14);

frame.getContentPane().add(lblNewLabel\_5);

JLabel lblNewLabel\_6 = new JLabel("Diagonal");

lblNewLabel\_6.setBounds(10, 163, 69, 14);

frame.getContentPane().add(lblNewLabel\_6);

JLabel lblNewLabel\_7 = new JLabel("Circumference");

lblNewLabel\_7.setBounds(10, 188, 92, 14);

frame.getContentPane().add(lblNewLabel\_7);

JLabel lblNewLabel\_8 = new JLabel("Area");

lblNewLabel\_8.setBounds(10, 213, 69, 14);

frame.getContentPane().add(lblNewLabel\_8);

JButton btn\_submit = new JButton("Calculate");

btn\_submit.setBounds(130, 80, 108, 23);

frame.getContentPane().add(btn\_submit);

JLabel CircumValue = new JLabel("New label");

CircumValue.setBounds(150, 188, 108, 14);

frame.getContentPane().add(CircumValue);

JLabel DistanceValue = new JLabel("New label");

DistanceValue.setBounds(150, 113, 118, 14);

frame.getContentPane().add(DistanceValue);

JLabel RadiusValue = new JLabel("New label");

RadiusValue.setBounds(150, 138, 118, 14);

frame.getContentPane().add(RadiusValue);

JLabel DiagonalValue = new JLabel("New label");

DiagonalValue.setBounds(150, 163, 118, 14);

frame.getContentPane().add(DiagonalValue);

JLabel AreaValue = new JLabel("New label");

AreaValue.setBounds(150, 213, 118, 14);

frame.getContentPane().add(AreaValue);

// Hiding Visibility

CircumValue.setVisible(false);

DistanceValue.setVisible(false);

RadiusValue.setVisible(false);

DiagonalValue.setVisible(false);

AreaValue.setVisible(false);

btn\_submit.addMouseListener(new MouseAdapter() {

@Override

public void mouseClicked(MouseEvent e) {

if (x1\_value.getText().equals("") || x2\_value.getText().equals("") || y1\_value.getText().equals("") || y2\_value.getText().equals("")) {

JOptionPane.showMessageDialog(frame, "Please Enter All the fields!", "Fields Error", JOptionPane.ERROR\_MESSAGE);

}

else

{

int x1 = Integer.parseInt(x1\_value.getText());

int x2 = Integer.parseInt(x2\_value.getText());

int y1 = Integer.parseInt(y1\_value.getText());

int y2 = Integer.parseInt(y2\_value.getText());

int dist = ((int) Math.pow((x2-x1), 2)) + ((int) Math.pow((y2-y1), 2));

int distRVal = (int) Math.sqrt(dist);

int diag = (int)(2 \* distRVal);

int circum = (int)(2 \* 3.14 \* distRVal);

int area = (int)(3.14 \* Math.pow(distRVal, 2));

JOptionPane.showMessageDialog(frame, "Distance: " + distRVal + "\nRadius: " + distRVal +

"\nDiagonal: " + diag + "\nCircumference: " + circum + "\nArea: " + area, "Result", JOptionPane.PLAIN\_MESSAGE);

CircumValue.setText(Integer.toString(circum));

DistanceValue.setText(Integer.toString(distRVal));

RadiusValue.setText(Integer.toString(distRVal));

DiagonalValue.setText(Integer.toString(diag));

AreaValue.setText(Integer.toString(area));

CircumValue.setVisible(true);

DistanceValue.setVisible(true);

RadiusValue.setVisible(true);

DiagonalValue.setVisible(true);

AreaValue.setVisible(true);

}

}

});

}

}

**Q2**

**package** swing;

**public** **class** TelephoneRecord {

**private** String Name, AreaCode;

**private** **int** phoneNumber;

**public** **static** **int** *currentRecordSize*=0;

**public** String getName() {

**return** Name;

}

**public** **void** setName(String name) {

**this**.Name = name;

}

**public** String getAreaCode() {

**return** AreaCode;

}

**public** **void** setAreaCode(String areaCode) {

**this**.AreaCode = areaCode;

}

**public** **int** getPhoneNumber() {

**return** phoneNumber;

}

**public** **void** setPhoneNumber(**int** phoneNumber) {

**this**.phoneNumber = phoneNumber;

}

**public** **static** **int** getCurrentRecordSize() {

**return** *currentRecordSize*;

}

**public** **static** **void** setCurrentRecordSize(**int** currentRecordSize) {

TelephoneRecord.*currentRecordSize* = currentRecordSize;

}

}

**package** swing;

**import** java.awt.EventQueue;

**import** javax.swing.JFrame;

**import** javax.swing.JPanel;

**import** javax.swing.JTabbedPane;

**import** javax.swing.JLabel;

**import** javax.swing.JOptionPane;

**import** javax.swing.JTextField;

**import** javax.swing.JButton;

**import** java.awt.event.MouseAdapter;

**import** java.awt.event.MouseEvent;

**import** java.awt.event.ActionListener;

**import** java.awt.event.ActionEvent;

**public** **class** Task2 {

**private** JFrame frame;

**private** JTextField record\_txt;

**private** **int** recordNumbers = 0;

**private** TelephoneRecord[] telephoneRecords;

**private** JTextField name\_txt;

**private** JTextField area\_txt;

**private** JTextField phone\_txt;

**private** **int** sizeOfRecord = 0;

**private** JTextField display\_txt;

**private** JTextField update\_record\_txt;

**private** JTextField textField;

/\*\*

\* Launch the application.

\*/

**public** **static** **void** main(String[] args) {

EventQueue.*invokeLater*(**new** Runnable() {

**public** **void** run() {

**try** {

Task2 window = **new** Task2();

window.frame.setVisible(**true**);

} **catch** (Exception e) {

e.printStackTrace();

}

}

});

}

/\*\*

\* Create the application.

\*/

**public** Task2() {

initialize();

}

/\*\*

\* Initialize the contents of the frame.

\*/

**private** **void** initialize() {

frame = **new** JFrame();

frame.setBounds(100, 100, 626, 508);

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

frame.getContentPane().setLayout(**null**);

JTabbedPane tabbedPane = **new** JTabbedPane(JTabbedPane.***TOP***);

tabbedPane.setBounds(10, 45, 456, 398);

frame.getContentPane().add(tabbedPane);

JPanel panel\_3 = **new** JPanel();

tabbedPane.addTab("Record", **null**, panel\_3, **null**);

panel\_3.setLayout(**null**);

JLabel lblNewLabel = **new** JLabel("Enter Number of Record");

lblNewLabel.setBounds(10, 24, 139, 45);

panel\_3.add(lblNewLabel);

record\_txt = **new** JTextField();

record\_txt.setBounds(206, 36, 126, 20);

panel\_3.add(record\_txt);

record\_txt.setColumns(10);

JButton record\_btn = **new** JButton("Submit");

record\_btn.setBounds(159, 133, 114, 34);

panel\_3.add(record\_btn);

JPanel panel = **new** JPanel();

tabbedPane.addTab("Add", **null**, panel, **null**);

panel.setLayout(**null**);

JLabel lbl = **new** JLabel("Enter Name");

lbl.setBounds(10, 27, 127, 27);

panel.add(lbl);

name\_txt = **new** JTextField();

name\_txt.setBounds(176, 24, 96, 19);

panel.add(name\_txt);

name\_txt.setColumns(10);

JLabel lblNewLabel\_1 = **new** JLabel("Enter Area Code");

lblNewLabel\_1.setBounds(10, 89, 127, 27);

panel.add(lblNewLabel\_1);

area\_txt = **new** JTextField();

area\_txt.setBounds(176, 86, 96, 19);

panel.add(area\_txt);

area\_txt.setColumns(10);

JLabel lblNewLabel\_2 = **new** JLabel("Enter PhoneNumber");

lblNewLabel\_2.setBounds(10, 171, 141, 27);

panel.add(lblNewLabel\_2);

phone\_txt = **new** JTextField();

phone\_txt.setBounds(176, 168, 96, 19);

panel.add(phone\_txt);

phone\_txt.setColumns(10);

JButton btnNewButton = **new** JButton("Add Record");

// Adding a Record

btnNewButton.addMouseListener(**new** MouseAdapter() {

@Override

**public** **void** mouseClicked(MouseEvent e) {

**if** (TelephoneRecord.*getCurrentRecordSize*() <= recordNumbers) {

System.***out***.println(name\_txt.getText() + sizeOfRecord + recordNumbers);

telephoneRecords[TelephoneRecord.*currentRecordSize*].setName(name\_txt.getText());

telephoneRecords[TelephoneRecord.*currentRecordSize*]

.setPhoneNumber(Integer.*parseInt*(phone\_txt.getText()));

telephoneRecords[TelephoneRecord.*currentRecordSize*].setAreaCode(area\_txt.getText());

sizeOfRecord += 1;

TelephoneRecord.*setCurrentRecordSize*(sizeOfRecord);

JOptionPane.*showMessageDialog*(frame, "Data Inserted", "Successfull", JOptionPane.***PLAIN\_MESSAGE***);

name\_txt.setText("");

phone\_txt.setText("");

area\_txt.setText("");

} **else** {

JOptionPane.*showMessageDialog*(frame, "Record Limit Exceeds " + sizeOfRecord + ".", "Exceeds Error",

JOptionPane.***ERROR\_MESSAGE***);

name\_txt.setText("");

phone\_txt.setText("");

area\_txt.setText("");

}

}

});

btnNewButton.setBounds(96, 244, 121, 36);

panel.add(btnNewButton);

JPanel panel\_1 = **new** JPanel();

tabbedPane.addTab("Display", **null**, panel\_1, **null**);

panel\_1.setLayout(**null**);

JLabel lblNewLabel\_3 = **new** JLabel("Enter Name");

lblNewLabel\_3.setBounds(10, 55, 76, 27);

panel\_1.add(lblNewLabel\_3);

display\_txt = **new** JTextField();

display\_txt.setBounds(116, 59, 96, 19);

panel\_1.add(display\_txt);

display\_txt.setColumns(10);

JButton btnNewButton\_1 = **new** JButton("Show Record");

btnNewButton\_1.addMouseListener(**new** MouseAdapter() {

@Override

**public** **void** mouseClicked(MouseEvent e) {

**boolean** found = **false**;

**for** (**int** i = 0; i < TelephoneRecord.*currentRecordSize*; i++) {

**if** (telephoneRecords[i].getName() == display\_txt.getText()) {

JOptionPane.*showMessageDialog*(frame,

"User Record\nName: " + telephoneRecords[i].getName() + "\nArea: "

+ telephoneRecords[i].getAreaCode() + "\nPhoneNumber: "

+ telephoneRecords[i].getPhoneNumber() + "",

"Display Record", JOptionPane.***PLAIN\_MESSAGE***);

found = **true**;

**break**;

}

}

**if** (!found) {

JOptionPane.*showMessageDialog*(frame, "Can not find Record", "Error", JOptionPane.***ERROR\_MESSAGE***);

}

}

});

btnNewButton\_1.setBounds(86, 154, 129, 32);

panel\_1.add(btnNewButton\_1);

JPanel panel\_2 = **new** JPanel();

tabbedPane.addTab("Update", **null**, panel\_2, **null**);

panel\_2.setLayout(**null**);

JLabel lblNewLabel\_4 = **new** JLabel("Enter Name");

lblNewLabel\_4.setBounds(10, 33, 82, 24);

panel\_2.add(lblNewLabel\_4);

update\_record\_txt = **new** JTextField();

update\_record\_txt.setBounds(139, 36, 96, 19);

panel\_2.add(update\_record\_txt);

update\_record\_txt.setColumns(10);

JButton btnNewButton\_2 = **new** JButton("Search");

btnNewButton\_2.setBounds(304, 35, 85, 21);

panel\_2.add(btnNewButton\_2);

JLabel lblNewLabel\_5 = **new** JLabel("New PhoneNumber");

lblNewLabel\_5.setBounds(10, 114, 113, 24);

panel\_2.add(lblNewLabel\_5);

textField = **new** JTextField();

textField.setBounds(139, 117, 96, 19);

panel\_2.add(textField);

textField.setColumns(10);

JButton btnNewButton\_3 = **new** JButton("Update");

btnNewButton\_3.setBounds(139, 178, 96, 39);

panel\_2.add(btnNewButton\_3);

btnNewButton\_3.setVisible(**false**);

textField.setVisible(**false**);

lblNewLabel\_5.setVisible(**false**);

record\_btn.addMouseListener(**new** MouseAdapter() {

@Override

**public** **void** mouseClicked(MouseEvent e) {

recordNumbers = Integer.*parseInt*(record\_txt.getText());

telephoneRecords = **new** TelephoneRecord[recordNumbers];

sizeOfRecord = 0;

JOptionPane.*showMessageDialog*(frame, "Record List Created", "Success", JOptionPane.***PLAIN\_MESSAGE***);

record\_btn.setEnabled(**false**);

}

});

btnNewButton.addActionListener(**new** ActionListener() {

**public** **void** actionPerformed(ActionEvent e) {

}

});

btnNewButton\_2.addMouseListener(**new** MouseAdapter() {

@Override

**public** **void** mouseClicked(MouseEvent e) {

**boolean** found = **false**;

**for** (**int** i = 0; i < TelephoneRecord.*currentRecordSize*; i++) {

**if** (telephoneRecords[i].getName() == update\_record\_txt.getText()) {

found = **true**;

btnNewButton\_3.setVisible(**true**);

textField.setVisible(**true**);

lblNewLabel\_5.setVisible(**true**);

JOptionPane.*showMessageDialog*(frame, "Found Record", "Found", JOptionPane.***PLAIN\_MESSAGE***);

**break**;

}

}

**if** (!found) {

JOptionPane.*showMessageDialog*(frame, "Can not find Record", "Error", JOptionPane.***ERROR\_MESSAGE***);

}

}

});

// Update Record

btnNewButton\_3.addMouseListener(**new** MouseAdapter() {

@Override

**public** **void** mouseClicked(MouseEvent e) {

**for** (**int** i = 0; i < TelephoneRecord.*currentRecordSize*; i++) {

**if** (telephoneRecords[i].getName() == update\_record\_txt.getText()) {

telephoneRecords[i].setPhoneNumber(Integer.*parseInt*(textField.getText()));

JOptionPane.*showMessageDialog*(frame, "Updated Record", "Update", JOptionPane.***PLAIN\_MESSAGE***);

btnNewButton\_3.setVisible(**false**);

textField.setVisible(**false**);

lblNewLabel\_5.setVisible(**false**);

**break**;

}

}

}

});

}

}

**Q3**

package swing;

import java.awt.EventQueue;

import javax.swing.JFrame;

import javax.swing.JLabel;

import javax.swing.JTextField;

import javax.swing.JButton;

import java.awt.event.MouseAdapter;

import java.awt.event.MouseEvent;

public class Task3 {

private JFrame frame;

private JTextField record\_txt;

private TelephoneRecord []telephoneRecord;

/\*\*

\* Launch the application.

\*/

public static void main(String[] args) {

EventQueue.invokeLater(new Runnable() {

public void run() {

try {

Task3 window = new Task3();

window.frame.setVisible(true);

} catch (Exception e) {

e.printStackTrace();

}

}

});

}

/\*\*

\* Create the application.

\*/

public Task3() {

initialize();

}

/\*\*

\* Initialize the contents of the frame.

\*/

private void initialize() {

frame = new JFrame();

frame.setBounds(100, 100, 534, 464);

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

frame.getContentPane().setLayout(null);

JLabel lblNewLabel = new JLabel("Record Size");

lblNewLabel.setBounds(38, 55, 102, 26);

frame.getContentPane().add(lblNewLabel);

record\_txt = new JTextField();

record\_txt.setBounds(256, 59, 96, 19);

frame.getContentPane().add(record\_txt);

record\_txt.setColumns(10);

JButton AddBtn = new JButton("Add Record");

AddBtn.setBounds(38, 131, 137, 42);

frame.getContentPane().add(AddBtn);

JButton btnUpdateRecord = new JButton("Update Record");

btnUpdateRecord.setBounds(38, 297, 137, 42);

frame.getContentPane().add(btnUpdateRecord);

JButton DisplayBtn = new JButton("Display Record");

DisplayBtn.setBounds(38, 215, 137, 42);

frame.getContentPane().add(DisplayBtn);

JButton btnNewButton = new JButton("Submit");

btnNewButton.addMouseListener(new MouseAdapter() {

@Override

public void mouseClicked(MouseEvent e) {

telephoneRecord = new TelephoneRecord[Integer.parseInt(record\_txt.getText())];

}

});

btnNewButton.setBounds(393, 58, 85, 21);

frame.getContentPane().add(btnNewButton);

}

}