**LAB NO #04**

**package** gh;

**import** java.awt.BorderLayout;

**import** java.awt.EventQueue;

**import** javax.swing.JFrame;

**import** javax.swing.JPanel;

**import** javax.swing.border.EmptyBorder;

**import** javax.swing.JButton;

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

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

**import** javax.swing.JTextField;

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

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

**import** java.awt.Font;

**import** javax.swing.SwingConstants;

**import** java.awt.Color;

**import** java.awt.SystemColor;

**import** java.awt.event.KeyAdapter;

**import** java.awt.event.KeyEvent;

**public** **class** Calculator **extends** JFrame {

**private** JPanel contentPane;

**private** JTextField textField;

**private** JTextField dispaly;

**double** first;

**double** second;

**double** result;

String operation;

String answer;

**private** JTextField txtCalculator;

/\*\*

\* Launch the application.

\*/

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

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

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

**try** {

Calculator frame = **new** Calculator();

frame.setVisible(**true**);

}

**catch** (Exception e) {

e.printStackTrace();

}

}

});

}

/\*\*

\* Create the frame.

\*/

**public** Calculator() {

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

setBounds(100, 100, 297, 462);

contentPane = **new** JPanel();

contentPane.setBorder(**new** EmptyBorder(5, 5, 5, 5));

contentPane.setLayout(**new** BorderLayout(0, 0));

setContentPane(contentPane);

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

panel.setBackground(Color.***BLACK***);

contentPane.add(panel, BorderLayout.***CENTER***);

JButton btnNewButton = **new** JButton("1");

btnNewButton.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton.getText();

textField.setText(number);

}

});

btnNewButton.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

btnNewButton.setBounds(10, 147, 58, 52);

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

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

{

String number = textField.getText() + btnNewButton.getText();

textField.setText(number);

}

});

panel.setLayout(**null**);

panel.add(btnNewButton);

JButton btnNewButton\_1 = **new** JButton("2");

btnNewButton\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

btnNewButton\_1.addActionListener(**new** ActionListener(){

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

String number = textField.getText() + btnNewButton\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1.setBounds(78, 147, 58, 52);

panel.add(btnNewButton\_1);

JButton btnNewButton\_1\_1 = **new** JButton("4");

btnNewButton\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1.setBounds(10, 209, 58, 46);

panel.add(btnNewButton\_1\_1);

JButton btnNewButton\_1\_1\_1 = **new** JButton("5");

btnNewButton\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

/////////////////////////////////////////////

String number = textField.getText() + btnNewButton\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

btnNewButton\_1\_1\_1.addActionListener(**new** ActionListener(){

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

}

});

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1.setBounds(78, 209, 58, 46);

panel.add(btnNewButton\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1 = **new** JButton("7");

btnNewButton\_1\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1.setBounds(10, 265, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1\_1 = **new** JButton("8");

btnNewButton\_1\_1\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1.getText();

}

});

btnNewButton\_1\_1\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1.setBounds(78, 265, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1 = **new** JButton("3");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.addActionListener(**new** ActionListener(){

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

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1.setBounds(146, 147, 58, 52);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1 = **new** JButton("6");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1.setBounds(146, 209, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1 = **new** JButton("9");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

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

@Override

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

String number = textField.getText() + btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.getText();

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.setBounds(146, 265, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1 = **new** JButton("+");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + "+";

textField.setText(number);

}

});

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

@Override

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

String number = textField.getText() + "+";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.setFont(**new** Font("Tahoma", Font.***BOLD***, 30));

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.addActionListener(**new** ActionListener(){

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

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1.setBounds(214, 321, 59, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1\_1);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2 = **new** JButton("/");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + "/";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2.addMouseListener(**new** MouseAdapter(){

@Override

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

String number = textField.getText() + "/";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2.setFont(**new** Font("Tahoma", Font.***BOLD***, 20));

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2.setBounds(214, 264, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_2);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3 = **new** JButton("\*");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + "\*";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3.addMouseListener(**new** MouseAdapter(){

@Override

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

String number = textField.getText() + "\*";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3.setFont(**new** Font("Tahoma", Font.***BOLD***, 30));

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3.setBounds(214, 209, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3);

JButton btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1 = **new** JButton("-");

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + "-";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1.setFont(**new** Font("Tahoma", Font.***BOLD***, 40));

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1.addMouseListener(**new** MouseAdapter(){

@Override

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

String number = textField.getText() + "-";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1.addActionListener(**new** ActionListener(){

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

}

});

btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1.setBounds(214, 147, 58, 52);

panel.add(btnNewButton\_1\_1\_1\_1\_1\_1\_1\_1\_1\_3\_1);

JButton btnNewButton\_1\_1\_1\_1\_2 = **new** JButton("0");

btnNewButton\_1\_1\_1\_1\_2.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + "0";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_2.addActionListener(**new** ActionListener(){

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

}

});

btnNewButton\_1\_1\_1\_1\_2.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_2.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

btnNewButton\_1\_1\_1\_1\_2.addMouseListener(**new** MouseAdapter(){

@Override

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

String number = textField.getText() + "0";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_2.setBounds(10, 321, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_2);

textField = **new** JTextField();

textField.setFont(**new** Font("Tahoma", Font.***BOLD***, 20));

textField.setBackground(SystemColor.***activeCaptionBorder***);

textField.setBounds(10, 37, 251, 84);

panel.add(textField);

textField.setColumns(10);

JButton btnNewButton\_1\_1\_1\_1\_2\_1 = **new** JButton("=");

btnNewButton\_1\_1\_1\_1\_2\_1.addMouseListener(**new** MouseAdapter(){

@Override

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

String a = textField.getText();

**char** c = 0;

**int** r = 0;

String s = **null**,s1 = **null**;

**boolean** flag = **true**;

**for** (**int** i = 0; i < a.length(); i++)

{

**if** ((a.charAt(i) != '+' && a.charAt(i) != '-' && a.charAt(i) != '\*' && a.charAt(i) != '/') && flag == **true**)

{

s += a.charAt(i);

}

**if** (a.charAt(i) == '+' || a.charAt(i) == '-' || a.charAt(i) == '\*' || a.charAt(i) == '/')

{

c = a.charAt(i);

flag = **false**;

}

**if** ((a.charAt(i) != '+' && a.charAt(i) != '-' && a.charAt(i) != '\*' && a.charAt(i) != '/') && flag == **false**)

{

s1 += a.charAt(i);

}

}

String n = s.replace("null", "");

String n1 = s1.replace("null", "");

**int** ch = Integer.*parseInt*(n);

**int** ch1 = Integer.*parseInt*(n1);

**if** (c == '+')

{

r = ch + ch1;

String f = Integer.*toString*(r);

textField.setText(f);

}

**else** **if** (c == '\*')

{

r = ch \* ch1;

String f = Integer.*toString*(r);

textField.setText(f);

}

**else** **if** (c == '-')

{

r = ch - ch1;

String f = Integer.*toString*(r);

textField.setText(f);

}

**else** **if** (c == '/')

{

r = ch \* ch1;

String f = Integer.*toString*(r);

textField.setText(f);

}

}

});

btnNewButton\_1\_1\_1\_1\_2\_1.setFont(**new** Font("Tahoma", Font.***BOLD***, 30));

btnNewButton\_1\_1\_1\_1\_2\_1.setBackground(SystemColor.***activeCaptionBorder***);

//btnNewButton\_1\_1\_1\_1\_2\_1.addMouseListener(new MouseAdapter() {

btnNewButton\_1\_1\_1\_1\_2\_1.addActionListener(**new** ActionListener(){

**public** **void** actionPerformed(ActionEvent arg0) {

}

});

btnNewButton\_1\_1\_1\_1\_2\_1.setBounds(10, 377, 126, 32);

panel.add(btnNewButton\_1\_1\_1\_1\_2\_1);

JButton btnNewButton\_1\_1\_1\_1\_2\_2 = **new** JButton(".");

btnNewButton\_1\_1\_1\_1\_2\_2.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + ".";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_2\_2.addMouseListener(**new** MouseAdapter(){

@Override

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

String number = textField.getText() + ".";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_2\_2.addActionListener(**new** ActionListener(){

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

}

});

btnNewButton\_1\_1\_1\_1\_2\_2.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_2\_2.setFont(**new** Font("Times New Roman", Font.***BOLD***, 41));

btnNewButton\_1\_1\_1\_1\_2\_2.setBounds(78, 321, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_2\_2);

JButton btnNewButton\_1\_1\_1\_1\_2\_3 = **new** JButton("00");

btnNewButton\_1\_1\_1\_1\_2\_3.addKeyListener(**new** KeyAdapter(){

@Override

**public** **void** keyPressed(KeyEvent e) {

String number = textField.getText() + "00";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_2\_3.addMouseListener(**new** MouseAdapter(){

@Override

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

String number = textField.getText() + "00";

textField.setText(number);

}

});

btnNewButton\_1\_1\_1\_1\_2\_3.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_2\_3.setFont(**new** Font("Times New Roman", Font.***BOLD***, 22));

btnNewButton\_1\_1\_1\_1\_2\_3.setBounds(146, 321, 58, 46);

panel.add(btnNewButton\_1\_1\_1\_1\_2\_3);

JButton btnNewButton\_1\_1\_1\_1\_2\_1\_1 = **new** JButton("<-");

JButton btnClear = **new** JButton("CLE");

btnNewButton\_1\_1\_1\_1\_2\_1\_1.addActionListener(**new** ActionListener(){

**public** **void** actionPerformed(ActionEvent arg0) {

textField.setText(**null**);

}

});

btnNewButton\_1\_1\_1\_1\_2\_1\_1.setFont(**new** Font("Tahoma", Font.***BOLD***, 30));

btnNewButton\_1\_1\_1\_1\_2\_1\_1.setBackground(SystemColor.***activeCaptionBorder***);

btnNewButton\_1\_1\_1\_1\_2\_1\_1.setBounds(146, 377, 126, 32);

panel.add(btnNewButton\_1\_1\_1\_1\_2\_1\_1);

txtCalculator = **new** JTextField();

txtCalculator.setForeground(SystemColor.***text***);

txtCalculator.setFont(**new** Font("Tahoma", Font.***BOLD***, 16));

txtCalculator.setBackground(SystemColor.***textInactiveText***);

txtCalculator.setHorizontalAlignment(SwingConstants.***CENTER***);

txtCalculator.setText("CALCULATOR ");

txtCalculator.setBounds(10, 6, 140, 20);

panel.add(txtCalculator);

txtCalculator.setColumns(10);

}

}

Text, calendar

Description automatically generated with medium confidenceText

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