public class MainFrame extends javax.swing.JFrame {

public MainFrame() {

initComponents();

enabledBtn("Oct");

enabledBtn("StaClose");

}

private void btn0ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("0");

}

private void btn1ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("1");

}

private void btn2ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("2");

}

private void btn3ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("3");

}

private void btn4ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("4");

}

private void btn5ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("5");

}

private void btn6ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("6");

}

private void btn7ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("7");

}

private void btn8ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("8");

}

private void btn9ActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("9");

private void btnResultActionPerformed(java.awt.event.ActionEvent evt) {

operate("=");

System.out.println("(=)resultNum : " + resultNum);

jTextField1.setText(Double.toString(resultNum));

//init("=");

}

private void btnAddActionPerformed(java.awt.event.ActionEvent evt) {

operate("+");

jTextField1.setText("0");

}

private void btnSubActionPerformed(java.awt.event.ActionEvent evt) {

operate("-");

jTextField1.setText("0");

}

private void btnMultiActionPerformed(java.awt.event.ActionEvent evt) {

operate("\*");

jTextField1.setText("0");

}

private void btnDiviActionPerformed(java.awt.event.ActionEvent evt) {

operate("/");

jTextField1.setText("0");

}

private void btnClearEntryActionPerformed(java.awt.event.ActionEvent evt) {

jTextField1.setText("0");

init("ClearEntry");

}

private void btnMCActionPerformed(java.awt.event.ActionEvent evt) {

jTextField1.setText("0");

init("ClearMemory");

}

private void btnMRActionPerformed(java.awt.event.ActionEvent evt) {

jTextField1.setText(Double.toString(memoryNum));

}

private void btnMSActionPerformed(java.awt.event.ActionEvent evt) {

memoryNum = Double.parseDouble(jTextField1.getText());

}

private void btnMpActionPerformed(java.awt.event.ActionEvent evt) {

double num = Double.parseDouble(jTextField1.getText());

if(num < 0) {

num = num \* -1;

}

memoryNum = num;

}

private void btnChsActionPerformed(java.awt.event.ActionEvent evt) {

resultNum \*= -1;

}

private void btnBackspaceActionPerformed(java.awt.event.ActionEvent evt) {

if(jTextField1.getText().equals("0") || jTextField1.getText().length() <= 1) {

jTextField1.setText("0");

} else if (jTextField1.getText().length() > 0) {

String subString = jTextField1.getText().substring(0, jTextField1.getText().length() - 1);

jTextField1.setText(subString);

}

}

private void bntModActionPerformed(java.awt.event.ActionEvent evt) {

operate("%");

jTextField1.setText("0");

}

private void btnAndActionPerformed(java.awt.event.ActionEvent evt) {

operate("&");

jTextField1.setText("0");

}

private void btnOrActionPerformed(java.awt.event.ActionEvent evt) {

operate("|");

jTextField1.setText("0");

}

private void btnXorActionPerformed(java.awt.event.ActionEvent evt) {

operate("^");

jTextField1.setText("0");

}

private void btnLshActionPerformed(java.awt.event.ActionEvent evt) {

operate("<");

jTextField1.setText("0");

}

private void btnNotActionPerformed(java.awt.event.ActionEvent evt) {

// 비트별 역수 구하기

// operate("Not");

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = ~(int)currentNum;

jTextField1.setText(Double.toString(resultNum));

}

private void btnIntActionPerformed(java.awt.event.ActionEvent evt) {

// int형으로 변환

currentNum = Double.parseDouble(jTextField1.getText());

int temp = (int)currentNum;

resultNum = (int)currentNum;

jTextField1.setText(Double.toString(temp));

}

private void btn2squareActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = currentNum \* currentNum;

jTextField1.setText(Double.toString(resultNum));

}

private void btn3squareActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = currentNum \* currentNum \* currentNum;

jTextField1.setText(Double.toString(resultNum));

}

private void btnYsquareActionPerformed(java.awt.event.ActionEvent evt) {

operate("y");

jTextField1.setText("0");

}

private void btnFountainValueActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = 1 / currentNum;

jTextField1.setText(Double.toString(resultNum));

}

private void btnFactorialActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble((jTextField1.getText()));

double tempNum = 1.0;

while(currentNum > 1.0) {

tempNum \*= currentNum;

currentNum--;

}

jTextField1.setText(Double.toString(resultNum));

}

private void btnLogActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = Math.log10(currentNum);

jTextField1.setText(Double.toString(resultNum));

}

private void btnLnActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = Math.log(currentNum);

jTextField1.setText(Double.toString(resultNum));

}

private void btnExpActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = Math.exp(currentNum);

jTextField1.setText(Double.toString(resultNum));

}

private void btnSinActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = Math.sin(Math.toRadians(currentNum));

jTextField1.setText(Double.toString(resultNum));

}

private void btnCosActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = Math.cos(Math.toRadians(currentNum));

jTextField1.setText(Double.toString(resultNum));

}

private void btnTanActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Double.parseDouble(jTextField1.getText());

resultNum = Math.tan(Math.toRadians(currentNum));

jTextField1.setText(Double.toString(resultNum));

}

private void btnFEActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

}

private void btnDmsActionPerformed(java.awt.event.ActionEvent evt) {

// TODO add your handling code here:

}

private void btnPiActionPerformed(java.awt.event.ActionEvent evt) {

currentNum = Math.PI;

jTextField1.setText(Double.toString(currentNum));

}

private void radioHexActionPerformed(java.awt.event.ActionEvent evt) {

enabledBtn("Hex");

}

private void radioDecActionPerformed(java.awt.event.ActionEvent evt) {

enabledBtn("Dec");

}

private void radioOctActionPerformed(java.awt.event.ActionEvent evt) {

enabledBtn("Oct");

}

private void radioBinActionPerformed(java.awt.event.ActionEvent evt) {

enabledBtn("Bin");

}

private void btnStaActionPerformed(java.awt.event.ActionEvent evt) {

enabledBtn("Sta");

}

private void btnAActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("A");

currentNum += 10;

}

private void btnBActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("B");

}

private void btnCActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("C");

}

private void btnDActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("D");

}

private void btnEActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("E");

}

private void btnFActionPerformed(java.awt.event.ActionEvent evt) {

input\_screen("F");

}

public static void main(String args[]) {

/\* Set the Nimbus look and feel \*/

//<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">

/\* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.

\* For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html

\*/

try {

for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {

if ("Nimbus".equals(info.getName())) {

javax.swing.UIManager.setLookAndFeel(info.getClassName());

break;

}

}

} catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

}

//</editor-fold>

/\* Create and display the form \*/

java.awt.EventQueue.invokeLater(new Runnable() {

public void run() {

new MainFrame().setVisible(true);

}

});

}

private double resultNum = 0; //결과값을 저장할 전역변수

private double currentNum = 0; //현재값을 저장할 전역변수

private String currentOper = ""; //현재 연산자를 저장할 변수 null로 할 경우 에러

boolean isPeriod = false; // "."의 중복 제거

private double memoryNum = 0;

private void init(String i) {

if(i.equals("Clear")) {

resultNum = 0;

currentNum = 0;

currentOper = "";

memoryNum = 0;

} else if (i.equals("ClearEntry")) {

currentNum = 0;

} else if (i.equals("ClearMemory")) {

memoryNum = 0;

}

}

private void input\_screen(String num) {

String str = jTextField1.getText();

System.out.println(isPeriod);

if(str.equals("0") && num.equals("0")) { // 0 중복 불가

jTextField1.setText("0");

} else if(isPeriod == true && num.equals(".")) {

} else if (str.equals("0") && num.equals(".")) { //0일 때 .를 입력하면 0. 으로 출력

jTextField1.setText("0.");

isPeriod = true;

} else if(str.equals("0") && !num.equals("0")) { //0일 때 다른 숫자를 입력할 경우 0을 제거 하고 숫자 입력

jTextField1.setText(num);

} else {

jTextField1.setText(str + num);

}

if (num.equals(".")) {

isPeriod = true;

}

}

public void operate(String oper) {

currentNum = Double.parseDouble(jTextField1.getText());

System.out.println("연산전 currentNum : " + currentNum);

System.out.println("연산전 resultNum : " + resultNum);

System.out.println("oper : " + oper);

System.out.println("currentOper : " + currentOper);

isPeriod = false; // .을 사용할 수 있게 해줌

switch(currentOper) {

case "+" : // 덧셈

resultNum += currentNum;

currentOper = oper;

break;

case "-" : // 뺄셈

resultNum -= currentNum;

currentOper = oper;

break;

case "\*" : // 곱셈

resultNum \*= currentNum;

currentOper = oper;

break;

case "/" : // 나눗셈

resultNum /= currentNum;

currentOper = oper;

break;

case "%" : // Mod

resultNum %= currentNum;

currentOper = oper;

break;

case "&" : // And

resultNum = (int)resultNum & (int)currentNum;

break;

case "|" : // Or

resultNum = (int)resultNum | (int)currentNum;

break;

case "^" : // Xor

resultNum = (int)resultNum ^ (int)currentNum;

break;

case "<" : // Lsh

resultNum = (int)resultNum << (int)currentNum;

break;

case "y" : // x^y

resultNum = Math.pow(resultNum, currentNum);

break;

default:

resultNum = currentNum;

currentOper = oper;

break;

}

System.out.println("연산 끝 resultNum : " + resultNum);

// if(oper.equals("=")) {

// currentOper = "";

// System.out.println(currentOper);

// }

}

public void enabledBtn(String e) {

if(e.equals("Sta")) {

btnAve.setEnabled(true);

btnSum.setEnabled(true);

btnS.setEnabled(true);

btnDat.setEnabled(true);

jFrameSta.setSize(400, 300);

jFrameSta.setVisible(true);

} else if(e.equals("StaClose")) {

btnAve.setEnabled(false);

btnSum.setEnabled(false);

btnS.setEnabled(false);

btnDat.setEnabled(false);

}

if(e.equals("Hex")) {

btn0.setEnabled(true);

btn1.setEnabled(true);

btn2.setEnabled(true);

btn3.setEnabled(true);

btn4.setEnabled(true);

btn5.setEnabled(true);

btn6.setEnabled(true);

btn7.setEnabled(true);

btn8.setEnabled(true);

btn9.setEnabled(true);

btnA.setEnabled(true);

btnB.setEnabled(true);

btnC.setEnabled(true);

btnD.setEnabled(true);

btnE.setEnabled(true);

btnF.setEnabled(true);

} else if(e.equals("Dec")) {

btn0.setEnabled(true);

btn1.setEnabled(true);

btn2.setEnabled(true);

btn3.setEnabled(true);

btn4.setEnabled(true);

btn5.setEnabled(true);

btn6.setEnabled(true);

btn7.setEnabled(true);

btn8.setEnabled(true);

btn9.setEnabled(true);

btnA.setEnabled(true);

btnB.setEnabled(true);

btnC.setEnabled(false);

btnD.setEnabled(false);

btnE.setEnabled(false);

btnF.setEnabled(false);

} else if(e.equals("Bin")) {

btn0.setEnabled(true);

btn1.setEnabled(true);

btn2.setEnabled(false);

btn3.setEnabled(false);

btn4.setEnabled(false);

btn5.setEnabled(false);

btn6.setEnabled(false);

btn7.setEnabled(false);

btn8.setEnabled(false);

btn9.setEnabled(false);

btnA.setEnabled(false);

btnB.setEnabled(false);

btnC.setEnabled(false);

btnD.setEnabled(false);

btnE.setEnabled(false);

btnF.setEnabled(false);

} else { // "Oct"

btn0.setEnabled(true);

btn1.setEnabled(true);

btn2.setEnabled(true);

btn3.setEnabled(true);

btn4.setEnabled(true);

btn5.setEnabled(true);

btn6.setEnabled(true);

btn7.setEnabled(true);

btn8.setEnabled(true);

btn9.setEnabled(true);

btnA.setEnabled(false);

btnB.setEnabled(false);

btnC.setEnabled(false);

btnD.setEnabled(false);

btnE.setEnabled(false);

btnF.setEnabled(false);

}

}





