20. write a program to create arithmetics math calculator using applet class and event handling

import java.applet.Applet;

import java.awt.\*;

import java.awt.event.\*;

public class ArithmeticCalculator extends Applet implements ActionListener {

// Declare components

TextField num1, num2, result;

Button add, subtract, multiply, divide;

Label label1, label2, label3;

public void init() {

// Set layout

setLayout(new GridLayout(5, 2));

// Initialize components

label1 = new Label("First Number:");

num1 = new TextField(10);

label2 = new Label("Second Number:");

num2 = new TextField(10);

label3 = new Label("Result:");

result = new TextField(10);

result.setEditable(false);

add = new Button("Add");

subtract = new Button("Subtract");

multiply = new Button("Multiply");

divide = new Button("Divide");

// Add components to applet

add(label1);

add(num1);

add(label2);

add(num2);

add(label3);

add(result);

add(add);

add(subtract);

add(multiply);

add(divide);

// Register event listeners

add.addActionListener(this);

subtract.addActionListener(this);

multiply.addActionListener(this);

divide.addActionListener(this);

}

public void actionPerformed(ActionEvent e) {

double n1 = 0, n2 = 0, res = 0;

String str1 = num1.getText();

String str2 = num2.getText();

// Input validation

try {

n1 = Double.parseDouble(str1);

n2 = Double.parseDouble(str2);

} catch (NumberFormatException ex) {

result.setText("Invalid input");

return;

}

// Perform operation based on the button clicked

if (e.getSource() == add) {

res = n1 + n2;

} else if (e.getSource() == subtract) {

res = n1 - n2;

} else if (e.getSource() == multiply) {

res = n1 \* n2;

} else if (e.getSource() == divide) {

if (n2 != 0) {

res = n1 / n2;

} else {

result.setText("Cannot divide by zero");

return;

}

}

// Display result

result.setText(String.valueOf(res));

}

}