8. customized exception

**import** java.util.Scanner;

@SuppressWarnings("serial")

**class** MyException **extends** Exception

{

**public** MyException(String s)

{

**super**(s);

}

}

**class** student{

String name,dob,usn;

student(String n,String d,String u)

{

name=n;

dob=d;

usn=u;

}

**public** **void** showStudent()

{

System.***out***.println("\nthe student details are :\n");

System.***out***.println("Name: "+name+"\nDate Of Birth: "+dob+"\nUSN: "+usn);

}

}

**public** **class** customized\_exception {

**static** **boolean** isLeap(**int** year)

{

**return** (((year % 4 == 0) &&

(year % 100 != 0)) ||

(year % 400 == 0));

}

**static** **boolean** isValidDate(**int** d,

**int** m,

**int** y)

{

**if** (m < 1 || m > 12)

**return** **false**;

**if** (d < 1 || d > 31)

**return** **false**;

**if** (m == 2)

{

**if** (*isLeap*(y))

**return** (d <= 29);

**else**

**return** (d <= 28);

}

**if** (m == 4 || m == 6 ||

m == 9 || m == 11)

**return** (d <= 30);

**return** **true**;

}

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

{

@SuppressWarnings("resource")

Scanner myObj = **new** Scanner(System.***in***);

String name,dob,usn;

**int** d,m,y;

System.***out***.println("Enter your name");

name = myObj.nextLine();

System.***out***.println("Enter your Usn");

usn = myObj.nextLine();

**try**

{

System.***out***.println("Enter the day");

d = myObj.nextInt();

System.***out***.println("Enter the month");

m = myObj.nextInt();

System.***out***.println("Enter the year");

y = myObj.nextInt();

**if**(*isValidDate*(d,m,y)==**false**)

{

**throw** **new** MyException("Invalid Date of Birth");

}

**else** {

dob=String.*valueOf*(d)+"-"+String.*valueOf*(m)+"-"+String.*valueOf*(y);

student s=**new** student(name,dob,usn);

s.showStudent();

}

}

**catch** (MyException ex)

{

System.***out***.println("Exception Caught");

System.***out***.println(ex.getMessage());

}

}

}

9. multithearding

**import** java.util.Scanner;

**class** OddThread **extends** Thread

{

**int** limit;

**public** OddThread(**int** limit)

{

**this**.limit = limit;

}

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

{

**int** oddNumber = 1; //First odd number is 1

**while** (oddNumber <= limit)

{

System.***out***.println(Thread.*currentThread*().getName()+" : "+oddNumber); //Calling printOdd() method of SharedPrinter class

oddNumber = oddNumber + 2; //Incrementing to next odd number

}

}

}

**class** EvenThread **extends** Thread

{

**int** limit;

**public** EvenThread(**int** limit)

{

**this**.limit = limit;

}

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

{

**int** evenNumber = 2; //First even number is 2

**while** (evenNumber <= limit)

{

System.***out***.println(Thread.*currentThread*().getName()+" : "+evenNumber);; //Calling printEven() method of SharedPrinter class

evenNumber = evenNumber + 2; //Incrementing to next even number

}

}

}

**public** **class** thread {

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

{

**int** number;

@SuppressWarnings("resource")

Scanner s = **new** Scanner(System.***in***);

System.***out***.println("Enter the limit\n");

number=s.nextInt();

OddThread oddThread = **new** OddThread(number);

oddThread.setName("Odd-Thread");

EvenThread evenThread = **new** EvenThread(number);

evenThread.setName("Even-Thread");

oddThread.start();

evenThread.start();

}

}

10. simple calculator layout

**import** java.awt.\*;

**public** **class** simple\_calculator

{

**int** c,n;

String s1,s2,s3,s4,s5;

Frame f;

Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16,b17;

Panel p;

TextField tf;

GridLayout g;

simple\_calculator()

{

f = **new** Frame("My calculator");

p = **new** Panel();

f.setLayout(**new** FlowLayout());

b1 = **new** Button("0");

b2 = **new** Button("1");

b3 = **new** Button("2");

b4 = **new** Button("3");

b5 = **new** Button("4");

b6 = **new** Button("5");

b7 = **new** Button("6");

b8 = **new** Button("7");

b9 = **new** Button("8");

b10 = **new** Button("9");

b11 = **new** Button("+");

b12 = **new** Button("-");

b13 = **new** Button("\*");

b14 = **new** Button("/");;

b15 = **new** Button("%");

b16 = **new** Button("=");

b17 = **new** Button("C");

tf = **new** TextField(20);

f.add(tf);

g = **new** GridLayout(4,4,10,20);

p.setLayout(g);

p.add(b1);p.add(b2);p.add(b3);p.add(b4);p.add(b5);p.add(b6);p.add(b7);p.add(b8);p.add(b9);

p.add(b10);p.add(b11);p.add(b12);p.add(b13);p.add(b14);p.add(b15);p.add(b16);p.add(b17);

f.add(p);

f.setSize(300,300);

f.setVisible(**true**);

}

**public** **static** **void** main(String[] abc)

{

simple\_calculator v = **new** simple\_calculator();

}

}

11. event handling

**import** java.awt.\*;

**import** java.awt.event.\*;

**public** **class** event\_handling **implements** ActionListener

{

**int** c,n;

String s1,s2,s3,s4,s5;

Frame f;

Button b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16,b17;

Panel p;

TextField tf;

GridLayout g;

event\_handling()

{

f = **new** Frame("My calculator");

p = **new** Panel();

f.setLayout(**new** FlowLayout());

b1 = **new** Button("0");

b1.addActionListener(**this**);

b2 = **new** Button("1");

b2.addActionListener(**this**);

b3 = **new** Button("2");

b3.addActionListener(**this**);

b4 = **new** Button("3");

b4.addActionListener(**this**);

b5 = **new** Button("4");

b5.addActionListener(**this**);

b6 = **new** Button("5");

b6.addActionListener(**this**);

b7 = **new** Button("6");

b7.addActionListener(**this**);

b8 = **new** Button("7");

b8.addActionListener(**this**);

b9 = **new** Button("8");

b9.addActionListener(**this**);

b10 = **new** Button("9");

b10.addActionListener(**this**);

b11 = **new** Button("+");

b11.addActionListener(**this**);

b12 = **new** Button("-");

b12.addActionListener(**this**);

b13 = **new** Button("\*");

b13.addActionListener(**this**);

b14 = **new** Button("/");

b14.addActionListener(**this**);

b15 = **new** Button("%");

b15.addActionListener(**this**);

b16 = **new** Button("=");

b16.addActionListener(**this**);

b17 = **new** Button("C");

b17.addActionListener(**this**);

tf = **new** TextField(20);

f.add(tf);

g = **new** GridLayout(4,4,10,20);

p.setLayout(g);

p.add(b1);p.add(b2);p.add(b3);p.add(b4);p.add(b5);p.add(b6);p.add(b7);p.add(b8);p.add(b9);

p.add(b10);p.add(b11);p.add(b12);p.add(b13);p.add(b14);p.add(b15);p.add(b16);p.add(b17);

f.add(p);

f.setSize(300,300);

f.setVisible(**true**);

}

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

**if**(e.getSource()==b1)

{

s3 = tf.getText();

s4 = "0";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b2)

{

s3 = tf.getText();

s4 = "1";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b3)

{

s3 = tf.getText();

s4 = "2";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b4)

{

s3 = tf.getText();

s4 = "3";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b5)

{

s3 = tf.getText();

s4 = "4";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b6)

{

s3 = tf.getText();

s4 = "5";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b7)

{

s3 = tf.getText();

s4 = "6";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b8)

{

s3 = tf.getText();

s4 = "7";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b9)

{

s3 = tf.getText();

s4 = "8";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b10)

{

s3 = tf.getText();

s4 = "9";

s5 = s3+s4;

tf.setText(s5);

}

**if**(e.getSource()==b11)

{

s1 = tf.getText();

tf.setText("");

c=1;

}

**if**(e.getSource()==b12)

{

s1 = tf.getText();

tf.setText("");

c=2;

}

**if**(e.getSource()==b13)

{

s1 = tf.getText();

tf.setText("");

c=3;

}

**if**(e.getSource()==b14)

{

s1 = tf.getText();

tf.setText("");

c=4;

}

**if**(e.getSource()==b15)

{

s1 = tf.getText();

tf.setText("");

c=5;

}

**if**(e.getSource()==b16)

{

s2 = tf.getText();

**if**(c==1)

{

n = Integer.*parseInt*(s1)+Integer.*parseInt*(s2);

tf.setText(String.*valueOf*(n));

}

**else**

**if**(c==2)

{

n = Integer.*parseInt*(s1)-Integer.*parseInt*(s2);

tf.setText(String.*valueOf*(n));

}

**else**

**if**(c==3)

{

n = Integer.*parseInt*(s1)\*Integer.*parseInt*(s2);

tf.setText(String.*valueOf*(n));

}

**if**(c==4)

{

**try**

{

**int** p=Integer.*parseInt*(s2);

**if**(p!=0)

{

n = Integer.*parseInt*(s1)/Integer.*parseInt*(s2);

tf.setText(String.*valueOf*(n));

}

**else**

tf.setText("infinite");

}

**catch**(Exception i){}

}

**if**(c==5)

{

n = Integer.*parseInt*(s1)%Integer.*parseInt*(s2);

tf.setText(String.*valueOf*(n));

}

}

**if**(e.getSource()==b17)

{

tf.setText("");

}

}

**public** **static** **void** main(String[] abc)

{

event\_handling v = **new** event\_handling();

}

}