

# 1 Program

```
1 import java.awt.*;
2 import java.awt.event.*;
3
4 import java.util.*;
5
6 public
7     class JInterface
8     extends Frame
9     implements MouseListener{
10
11     private Vector db = new Vector();
12
13     public static void main(String [] args){
14         new JInterface();
15     }
16
17     public JInterface(){
18         addMouseListener(this);
19
20         setSize( 640, 480);
21         setVisible(true);
22     }
23
24     public void paint(Graphics g){
25         Wrysowywalny w = null;
26         for( int i = 0; i < db.size(); i++){
27             w = (Wrysowywalny) db.elementAt(i);
28             w.rysowalny(g);
29         }
30     }
31
32     public void addWrysowywalny(Figura fig){
33         if( db != null)
34             db.add(fig);
35     }
36
37     public void mouseClicked(MouseEvent evt){
38         Figura fig = null;
39
40         switch(evt.getButton()){
41             case MouseEvent.BUTTON1:
42                 fig = new Kolo(
43                     evt.getX(),
44                     evt.getY(),
45                     new Color(
46                         (int)(Math.random()*255),
47                         (int)(Math.random()*255),
```

```

48         (int)(Math.random()*255)
49     )
50 );
51 this.addWrysowywalny(fig);
52 break;
53
54 case MouseEvent.BUTTON3:
55     fig = new Kwadrat(
56         evt.getX(),
57         evt.getY(),
58         new Color(
59             (int)(Math.random()*255),
60             (int)(Math.random()*255),
61             (int)(Math.random()*255)
62         )
63     );
64     this.addWrysowywalny(fig);
65     break;
66 default:
67     System.out.println("Inny klawisz myszki");
68     break;
69 }
70 repaint();
71 }
72
73 public void mouseEntered(MouseEvent arg0){
74 }
75 public void mouseExited(MouseEvent arg0){
76 }
77 public void mousePressed(MouseEvent arg0){
78 }
79 public void mouseReleased(MouseEvent arg0){
80 }
81 }
82
83 interface Wrysowywalny{
84     public void rysowalny(Graphics g);
85 }
86
87 abstract
88 class Figura
89 implements Wrysowywalny{
90     public int x, y;
91     public Color color;
92
93     public Figura(int x, int y, Color c){
94         this.x = x;
95         this.y = y;
96         this.color = c;

```

```

97     }
98 }
99
100 class Kolo
101     extends Figura{
102
103     public Kolo(int x, int y, Color c) {
104         super(x, y, c);
105     }
106
107     public void rysowalny(Graphics g){
108         g.setColor(color);
109         g.fillOval( x, y, 50, 50);
110     }
111 }
112
113 class Kwadrat
114     extends Figura
115     implements Wrysowywalny{
116
117     public Kwadrat(int x, int y, Color c) {
118         super(x, y, c);
119     }
120
121     public void rysowalny(Graphics g) {
122         g.setColor(color);
123         g.fillRect( x, y, 50, 50);
124     }
125 }

```

## 2 Program

```
1 public
2   class Watek
3     extends Thread{
4
5     public static void main(String[] args){
6         Watek w1 = new Watek('a');
7         Watek w2 = new Watek('b');
8         Watek w3 = new Watek('c');
9
10        w1.start();
11        w2.start();
12        w3.start();
13    }
14
15    private char chr;
16    private int numer;
17
18    public Watek( char chr){
19        this.chr = chr;
20        this.numer = 0;
21    }
22
23    public void run(){
24        while( numer < 10){
25            System.out.println(chr + " " + numer);
26            numer++;
27        }
28    }
29 }
```

### 3 Program

```
1 import java.io.*;
2 import java.net.*;
3
4 public
5     class ServerKlientMain{
6
7     public static void main(String[] args){
8         new Klient();
9     }
10 }
11
12 class Server{
13     private ServerSocket ss;
14
15     public Server(){
16         try {
17             ss = new ServerSocket(1701);
18
19             Socket soc = ss.accept();
20             OutputStream os = soc.getOutputStream();
21
22             os.write('H');
23             os.write('e');
24             os.write('l');
25             os.write('l');
26             os.write('o');
27         } catch (IOException e) {
28             e.printStackTrace();
29         }
30     }
31 }
32
33 class Klient{
34     public Klient(){
35         try {
36             Socket soc = new Socket("127.0.0.1", 1701);
37
38             InputStream is = soc.getInputStream();
39
40             System.out.println((char)is.read());
41             System.out.println((char)is.read());
42             System.out.println((char)is.read());
43             System.out.println((char)is.read());
44             System.out.println((char)is.read());
45
46             is.close();
47             soc.close();
```

```
48     } catch (UnknownHostException e) {
49         System.out.println("Nieznany host "+e);
50     } catch (IOException e) {
51         e.printStackTrace();
52     }
53 }
54 }
```

## 4 Program

```
1 import java.awt.*;
2 import java.awt.event.*;
3
4 import java.util.*;
5
6 public
7     class JInterface
8     extends Frame{
9
10    public static void main(String[] args){
11        new JInterface();
12    }
13
14    public JInterface(){
15
16        this.setLayout(new BorderLayout());
17
18        this.add(new MyPanel(), "North");
19        this.add(new MyPanel(), "South");
20        this.add(new MyFlowPanel(), "East");
21        this.add(new MyGridPanel(), "West");
22        this.add(new MyPanel(), "Center");
23
24        setSize( 640, 480);
25        setVisible(true);
26    }
27
28 }
29
30 class MyPanel
31     extends Panel{
32
33     public MyPanel(){
34         this.setBackground(
35             new Color(
36                 (int)(Math.random()*255),
37                 (int)(Math.random()*255),
38                 (int)(Math.random()*255)
39             )
40         );
41     }
42 }
43
44 class MyGridPanel
45     extends Panel{
46
47     public MyGridPanel(){
```

```

48     this.setLayout(new GridLayout(3, 4));
49     for(int i=0; i < 12; i++){
50         Button b = new Button(""+i);
51         this.add(b);
52     }
53 }
54 }
55
56 class MyFlowPanel
57 extends Panel{
58
59     public MyFlowPanel(){
60         this.setLayout(new FlowLayout());
61         for(int i=0; i < 4; i++){
62             Button b = new Button(""+i);
63             this.add(b);
64         }
65     }
66 }

```