# 温州大学计算机与人工智能学院
## Java程序设计（17网工）　课程作业

| 实验名称 | 使用按钮移动小球 | | | | |
|---|---|---|---|---|---|
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| 实验地点 | | 实验时间 | 2020-12-28,22:02:41 | 指导老师 | |

## 一、问题编号：

1740

地址：http://10.132.254.54/problem/1740/

## 二、问题描述：

编写一个程序，在面板显示四个按钮，分别为"向上"，"向下"，"向左"，"向右"，然后实现上下左右移动小球。

定义一个面板类来显示小球，
当按下"向下"按钮时，实现小球向下移动；
当按下"向左"按钮时，实现小球的向左移动；
当按下"向右"按钮时，实现小球的向右移动；
当按下"向上"按钮时，实现小球的向上移动；

界面如下图：

## 三、输入说明：

## 四、输出说明：

## 五、输入样列：

## 六、输出样列：

## 七、解答内容：

**所用语言：**

**源代码：**

```
01. import java.awt.BorderLayout;
02. import java.awt.Color;
03. import java.awt.Graphics;
04. import java.awt.event.ActionEvent;
05. import java.awt.event.ActionListener;
06.
07. import javax.swing.JButton;
08. import javax.swing.JFrame;
09. import javax.swing.JPanel;
10.
11. public class Main extends JFrame {
12.     private JButton mBtnUp = null;
13.     private JButton mBtnDown = null;
14.     private JButton mBtnLeft = null;
15.     private JButton mBtnRight = null;
16.     CirclePanel circlePanel = new CirclePanel();
17.
18.     public Main() {
19.         JPanel jPanel = new JPanel();
20.         mBtnUp = new JButton("向上");
21.         mBtnDown = new JButton("向下");
22.         mBtnLeft = new JButton("向左");
23.         mBtnRight = new JButton("向右");
```

```
24.        jPanel.add(mBtnUp);
25.        jPanel.add(mBtnDown);
26.        jPanel.add(mBtnLeft);
27.        jPanel.add(mBtnRight);
28.
29.        OnClick onClick = new OnClick();
30.        mBtnDown.addActionListener(onClick);
31.        mBtnUp.addActionListener(onClick);
32.        mBtnLeft.addActionListener(onClick);
33.        mBtnRight.addActionListener(onClick);
34.
35.        add(circlePanel, BorderLayout.CENTER);
36.        add(jPanel, BorderLayout.SOUTH);
37.        setSize(400, 300);
38.        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
39.    }
40.
41.    public static void main(String[] args) {
42.        Main window = new Main();
43.        window.setVisible(true);
44.    }
45.
46.    class OnClick implements ActionListener {
47.        @Override
48.        public void actionPerformed(ActionEvent actionEvent) {
49.            if (mBtnUp.equals(actionEvent.getSource())) {
50.                circlePanel.MoveToUp();
51.            }
52.            if (mBtnDown.equals(actionEvent.getSource())) {
53.                circlePanel.MoveToDown();
54.            }
55.            if (mBtnLeft.equals(actionEvent.getSource())) {
56.                circlePanel.MoveToLeft();
57.            }
58.            if (mBtnRight.equals(actionEvent.getSource())) {
59.                circlePanel.MoveToRight();
60.            }
61.        }
62.    }
63.
64.    class CirclePanel extends JPanel {
65.        private int x = 10;
66.        private int y = 10;
67.
68.        @Override
69.        public void paint(Graphics g) {
70.            super.paint(g);
71.            g.setColor(Color.BLUE);
72.            g.fillOval(x, y, 20, 20);
73.        }
74.
75.        public void MoveToUp() {
76.            y -= 10;
77.            repaint();
78.        }
79.        public void MoveToDown() {
80.            y += 10;
81.            repaint();
82.        }
83.        public void MoveToLeft() {
84.            x -= 10;
85.            repaint();
86.        }
87.        public void MoveToRight() {
88.            x += 10;
89.            repaint();
90.        }
91.    }
92. }
```

## 八、判题结果

### RE - 运行错误

**判题结果补充说明：**

test id:3270,result:RE, usedtime:148MS, usedmem:3356KB,score:50 Exception in thread "main" java.awt.HeadlessException: No X11

DISPLAY variable was set, but this program performed an operation which requires it. at java.awt.GraphicsEnvironment.checkHeadless(GraphicsEnvironment.java:173) at java.awt.Window.<init>(Window.java:547) at java.awt.Frame.<init>(Frame.java:419) at java.awt.Frame.<init>(Frame.java:384) at javax.swing.JFrame.<init>(JFrame.java:174) at Main. <init>(Main.java:18) at Main.main(Main.java:42) test id:3271,result:RE, usedtime:148MS, usedmem:3368KB,score:50 Exception in thread "main" java.awt.HeadlessException: No X11 DISPLAY variable was set, but this program performed an operation which requires it. at java.awt.GraphicsEnvironment.checkHeadless(GraphicsEnvironment.java:173) at java.awt.Window.<init>(Window.java:547) at java.awt.Frame.<init>(Frame.java:419) at java.awt.Frame.<init>(Frame.java:384) at javax.swing.JFrame.<init>(JFrame.java:174) at Main. <init>(Main.java:18) at Main.main(Main.java:42)