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	使用键盘移动小球				
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实验地点		实验时间	2020-12-28,22:19:13	指导老师	

一、问题编号：

1763

地址：http://10.132.254.54/problem/1763/

二、问题描述：

编写一个程序，在面板上下左右移动小球。
定义一个面板类来显示小球，当按下键盘的“↑”键时，实现小球向上移动；当按下“↓”键时，实现小球的向下移动。

注意：按钮也要控制小球的上、下、左、右移动！！！

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：

```java
import java.awt.BorderLayout;
import java.awt.Color;
import java.awt.Graphics;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;

import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JPanel;

public class Main extends JFrame {
    private JButton mBtnUp = null;
    private JButton mBtnDown = null;
    private JButton mBtnLeft = null;
    private JButton mBtnRight = null;
    CirclePanel circlePanel = new CirclePanel();

    public Main() {
        JPanel jPanel = new JPanel();
        mBtnUp = new JButton("向上");
        mBtnDown = new JButton("向下");
        mBtnLeft = new JButton("向左");
        mBtnRight = new JButton("向右");
        jPanel.add(mBtnUp);
        jPanel.add(mBtnDown);
        jPanel.add(mBtnLeft);
        jPanel.add(mBtnRight);

        OnClick onClick = new OnClick();
        mBtnDown.addActionListener(onClick);
        mBtnUp.addActionListener(onClick);
        mBtnLeft.addActionListener(onClick);
        mBtnRight.addActionListener(onClick);

        addKeyListener(new KeyClick());
        setFocusable(true);
        add(circlePanel, BorderLayout.CENTER);
        add(jPanel, BorderLayout.SOUTH);
        setSize(400, 300);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

    public static void main(String[] args) {
        Main window = new Main();
        window.setVisible(true);
    }

    class OnClick implements ActionListener {
        @Override
        public void actionPerformed(ActionEvent actionEvent) {
            if (mBtnUp.equals(actionEvent.getSource())) {
                circlePanel.MoveToUp();
            }
            if (mBtnDown.equals(actionEvent.getSource())) {
                circlePanel.MoveToDown();
            }
            if (mBtnLeft.equals(actionEvent.getSource())) {
                circlePanel.MoveToLeft();
            }
            if (mBtnRight.equals(actionEvent.getSource())) {
                circlePanel.MoveToRight();
            }
        }
    }

    class KeyClick implements KeyListener {

        @Override
        public void keyTyped(KeyEvent keyEvent) {

        }

        @Override
        public void keyPressed(KeyEvent e) {
            if (e.getKeyCode() == KeyEvent.VK_UP) {
                circlePanel.MoveToUp();
            }
            if (e.getKeyCode() == KeyEvent.VK_DOWN) {
                circlePanel.MoveToDown();
            }
            if (e.getKeyCode() == KeyEvent.VK_LEFT) {

                circlePanel.MoveToLeft();
            }
            if (e.getKeyCode() == KeyEvent.VK_RIGHT) {

                circlePanel.MoveToRight();
            }
        }

        @Override
        public void keyReleased(KeyEvent keyEvent) {

        }
    }

    class CirclePanel extends JPanel {
        private int x = 10;
        private int y = 10;

        @Override
        public void paint(Graphics g) {
            super.paint(g);
            g.setColor(Color.BLUE);
            g.fillOval(x, y, 20, 20);
        }

        public void MoveToUp() {
            y -= 10;
            repaint();
        }

        public void MoveToDown() {
            y += 10;
            repaint();
        }

        public void MoveToLeft() {
            x -= 10;
            repaint();
        }

        public void MoveToRight() {
            x += 10;
            repaint();
        }
    }
}
```

八、判题结果

RE - 运行错误

判题结果补充说明:

test id:3314,result:RE, usedtime:148MS, usedmem:3360KB,score:100 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:20) at Main.main(Main.java:46)