[Date]

ADVANCE PROGRAMMING

LAB 9

FAHEEM AZFAR

F-43030

BS(se)\_22-b

**Q1.**

**a)** Write a java program that creates an Applet that displays a panel that displays the string "Java!" while pressing the mouse each time on the panel in 5 different colors, fonts, and positions.

**i)** On each release change the font.

**ii)** On each press change the color. (After 5 presses it should reset the font and colors to initial values).

**iii)** When the user exits the component it should clear the panel. (Do not clear the previous text until the mouse exits.)

**b)** Use Inner class that implements MouseListener to handle the mouse events and pass that inner class object in addMouseListener of the panel.

SOLUTION:

import java.awt.BorderLayout;

import java.awt.Color;

import java.awt.Container;

import java.awt.Graphics;

import java.awt.GridLayout;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.awt.event.MouseEvent;

import java.awt.event.MouseListener;

import java.awt.event.MouseMotionListener;

import javax.swing.JApplet;

import javax.swing.JButton;

import javax.swing.JPanel;

public class Question1 extends JApplet implements ActionListener,MouseListener,MouseMotionListener

{

static int x1,x2,y1,y2;

static int flag;

JButton b1,b2,b3,b4,b5,b6,b7,b8,b9;

JPanel p1=new JPanel();

Drawing p;

public void init()

{

setSize(300,300);

p=new Drawing();

b1=new JButton("");

b1.setBackground(Color.black);

b1.addActionListener(this);

b2=new JButton("");

b2.setBackground(Color.BLUE);

b2.addActionListener(this);

b3=new JButton("");

b3.setBackground(Color.GREEN);

b3.addActionListener(this);

b4=new JButton("");

b4.setBackground(Color.RED);

b4.addActionListener(this);

b5=new JButton("");

b5.setBackground(Color.CYAN);

b5.addActionListener(this);

b6=new JButton("");

b6.setBackground(Color.GRAY);

b6.addActionListener(this);

b7=new JButton("");

b7.setBackground(Color.orange);

b7.addActionListener(this);

b8=new JButton("");

b8.setBackground(Color.magenta);

b8.addActionListener(this);

b9=new JButton("ERASE");

b9.addActionListener(this);

GridLayout g=new GridLayout(9,1);

p1.setLayout(g);

p1.add(b1);

p1.add(b2);

p1.add(b3);

p1.add(b4);

p1.add(b5);

p1.add(b6);

p1.add(b7);

p1.add(b8);

p1.add(b9);

Container c=getContentPane();

p.addMouseListener(this);

p.addMouseMotionListener(this);

c.add(p1,BorderLayout.EAST);

c.add(p);

}

public void ActionListener(ActionEvent g)

{

if(g.getSource()==b1)

{

flag=1;

}

else if(g.getSource()==b2)

{

flag=2;

}

else if(g.getSource()==b3)

{

flag=3;

}

else if(g.getSource()==b4)

{

flag=4;

}

else if(g.getSource()==b5)

{

flag=5;

}

else if(g.getSource()==b6)

{

flag=6;

}

else if(g.getSource()==b7)

{

flag=7;

}

else if(g.getSource()==b8)

{

flag=8;

}

else

{

flag=9;

}

}

public void mouseClicked(MouseEvent arg0) {}

public void mouseEntered(MouseEvent arg0) {}

public void mouseExited(MouseEvent arg0) {}

public void mousePressed(MouseEvent e)

{

x1=getX();

y1=getY();

}

public void mouseReleased(MouseEvent arg0) {}

public void actionPerformed(ActionEvent arg0) {}

public void mouseDragged(MouseEvent e)

{

x2=getX();

y2=getY();

p.repaint();

x1=x2;

y1=y2;

}

public void mouseMoved(MouseEvent arg0) {}

}

class Drawing extends JPanel

{

public void paint (Graphics g)

{

if(Question1.flag==1)

{

g.setColor(Color.BLACK);

g.drawLine(Question1.x1,Question1.y1,Question1.x2,Question1.y2);

}

else if(Question1.flag==2)

{

g.setColor(Color.BLUE);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==3)

{

g.setColor(Color.GREEN);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==4)

{

g.setColor(Color.RED);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==5)

{

g.setColor(Color.CYAN);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==6)

{

g.setColor(Color.GRAY);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==7)

{

g.setColor(Color.ORANGE);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==8)

{

g.setColor(Color.MAGENTA);

g.drawLine(Question1.x1, Question1.y1, Question1.x2,Question1. y2);

}

else if(Question1.flag==9)

{

g.setColor(getBackground());

g.fillRect(Question1.x1,Question1.y1, 10, 10);

}

}

}

PART B:

**import** java.awt.BorderLayout;

**import** java.awt.Color;

**import** java.awt.Container;

**import** java.awt.Graphics;

**import** java.awt.GridLayout;

**import** java.awt.event.ActionEvent;

**import** java.awt.event.ActionListener;

**import** java.awt.event.MouseEvent;

**import** java.awt.event.MouseListener;

**import** java.awt.event.MouseMotionListener;

**import** javax.swing.JButton;

**import** javax.swing.JFrame;

**import** javax.swing.JPanel;

**public** **class** Question1\_2 **extends** JFrame **implements** MouseListener,ActionListener,MouseMotionListener

{

paintd p1;

**static** **int** *x1*,*x2*,*y1*,*y2*;

**static** **int** *flag*;

JButton b1,b2,b3,b4,b5,b6,b7,b8,b9;

JPanel p=**new** JPanel();

Question1\_2()

{

p1=**new** paintd();

setSize(300,300);

b1=**new** JButton("");

b1.setBackground(Color.***black***);

b1.addActionListener(**this**);

b2=**new** JButton("");

b2.setBackground(Color.***BLUE***);

b2.addActionListener(**this**);

b3=**new** JButton("");

b3.setBackground(Color.***GREEN***);

b3.addActionListener(**this**);

b4=**new** JButton("");

b4.setBackground(Color.***RED***);

b4.addActionListener(**this**);

b5=**new** JButton("");

b5.setBackground(Color.***CYAN***);

b5.addActionListener(**this**);

b6=**new** JButton("");

b6.setBackground(Color.***GRAY***);

b6.addActionListener(**this**);

b7=**new** JButton("");

b7.setBackground(Color.***orange***);

b7.addActionListener(**this**);

b8=**new** JButton("");

b8.setBackground(Color.***magenta***);

b8.addActionListener(**this**);

b9=**new** JButton("ERASE");

b9.addActionListener(**this**);

GridLayout g=**new** GridLayout(9,1);

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);

Container c=getContentPane();

c.add(p,BorderLayout.***EAST***);

c.add(p1);

}

**public** **void** mouseClicked(MouseEvent arg0) {}

**public** **void** mouseDragged(MouseEvent arg0)

{

*x2*=getX();

*y2*=getY();

p.repaint();

*x1*=*x2*;

*y1*=*y2*;

}

**public** **void** mouseMoved(MouseEvent arg0) {}

**public** **void** mouseEntered(MouseEvent arg0) {}

**public** **void** mouseExited(MouseEvent arg0) {}

**public** **void** mousePressed(MouseEvent arg0)

{

*x1*=getX();

*y1*=getY();

}

**public** **void** mouseReleased(MouseEvent arg0) {}

**public** **void** actionPerformed(ActionEvent g)

{

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

{

*flag*=1;

}

**else** **if**(g.getSource()==b2)

{

*flag*=2;

}

**else** **if**(g.getSource()==b3)

{

*flag*=3;

}

**else** **if**(g.getSource()==b4)

{

*flag*=4;

}

**else** **if**(g.getSource()==b5)

{

*flag*=5;

}

**else** **if**(g.getSource()==b6)

{

*flag*=6;

}

**else** **if**(g.getSource()==b7)

{

*flag*=7;

}

**else** **if**(g.getSource()==b8)

{

*flag*=8;

}

**else**

{

*flag*=9;

}

}

**class** paintd **extends** JPanel

{

**public** **void** paint(Graphics g)

{

**if**(Question1.*flag*==1)

{

g.setColor(Color.***BLACK***);

g.drawLine(Question1\_2.*x1*,Question1\_2.*y1*,Question1\_2.*x2*,Question1\_2.*y2*);

}

**else** **if**(Question1.*flag*==2)

{

g.setColor(Color.***BLUE***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==3)

{

g.setColor(Color.***GREEN***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==4)

{

g.setColor(Color.***RED***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==5)

{

g.setColor(Color.***CYAN***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==6)

{

g.setColor(Color.***GRAY***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==7)

{

g.setColor(Color.***ORANGE***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==8)

{

g.setColor(Color.***MAGENTA***);

g.drawLine(Question1\_2.*x1*, Question1\_2.*y1*, Question1\_2.*x2*,Question1\_2. *y2*);

}

**else** **if**(Question1.*flag*==9)

{

g.setColor(getBackground());

g.fillRect(Question1\_2.*x1*,Question1\_2.*y1*, 10, 10);

}

}

}

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

{

Question1\_2 q=**new** Question1\_2();

q.setVisible(**true**);

}

}

**Q2.**

**a)** Write a java program using JApplet that provides a simple demonstration of MouseEvents. Shapes are drawn on a black background of the panel(created using separate top-level class) when the user clicks on the panel.

(Handle these in MouseClicked event using Anonymous MouseAdapter Class)

**i)** If the user double-clicks the panel, the panel should be cleared. (use getClickCount() returns an int)

**ii)** If the user right-clicks the panel, a blue oval is drawn with black boundary.(use isMetaDown() returns true if right clicked otherwise false)

**iii)** Otherwise, when the user clicks (single left\_click), a red rectangle is drawn.

1. Modify part a by creating panel using inner class.

SOLUTION:

import java.awt.Color;

import java.awt.Container;

import java.awt.Font;

import java.awt.Graphics;

import java.awt.event.MouseEvent;

import java.awt.event.MouseListener;

import javax.swing.JApplet;

import javax.swing.JPanel;

public class Question2 extends JApplet implements MouseListener

{

Stringpanel s;

static int check=0,check1=0;

public void init()

{

s=new Stringpanel();

Container c=getContentPane();

c.add(s);

s.addMouseListener(this);

}

public void mousePressed(MouseEvent e)

{

s.x=e.getX();

s.y=e.getY();

s.repaint();

check=check+1;

}

public void mouseReleased(MouseEvent e)

{

s.x1=s.x;

s.y1=s.y;

check1=check1+1;

s.repaint();

}

public void mouseClicked(MouseEvent arg0) {}

public void mouseEntered(MouseEvent arg0) {}

public void mouseExited(MouseEvent arg0) {}

}

class Stringpanel extends JPanel

{

public int x,y,x1,y1;

public void paint(Graphics g)

{

if(Question2.check==1)

{

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==1)

{

g.setColor(Color.RED);

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

else if(Question2.check==2)

{

Font f=new Font("ITALIC",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==2)

{

g.setColor(Color.GREEN);

Font f=new Font("ITALIC",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

else if(Question2.check==3)

{

Font f=new Font("GREEK",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==3)

{

g.setColor(Color.CYAN);

Font f=new Font("GREEK",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

else if(Question2.check==4)

{

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==4)

{

g.setColor(Color.MAGENTA);

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

}

}

PART B:

import java.awt.Color;

import java.awt.Container;

import java.awt.Font;

import java.awt.Graphics;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.awt.event.MouseEvent;

import java.awt.event.MouseListener;

import java.awt.event.MouseMotionListener;

import javax.swing.JFrame;

import javax.swing.JPanel;

public class Question2\_2 extends JFrame implements MouseListener,ActionListener,MouseMotionListener

{

Stringpanel1 s;

static int check=0,check1=0;

public void mouseDragged(MouseEvent arg0) {}

public void mouseMoved(MouseEvent arg0) {}

public void actionPerformed(ActionEvent arg0) {}

public void mouseClicked(MouseEvent arg0) {}

public void mouseEntered(MouseEvent arg0) {}

public void mouseExited(MouseEvent arg0) {

super.repaint();

}

Question2\_2()

{

s=new Stringpanel1();

Container c=getContentPane();

c.add(s);

s.addMouseListener(this);

}

public void mousePressed(MouseEvent e)

{

s.x=e.getX();

s.y=e.getY();

s.repaint();

check=check+1;

}

public void mouseReleased(MouseEvent e)

{

s.x1=s.x;

s.y1=s.y;

check1=check1+1;

s.repaint();

}

}

class Stringpanel1 extends JPanel

{

public int x,y,x1,y1;

public void paint(Graphics g)

{

if(Question2.check==1)

{

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==1)

{

g.setColor(Color.RED);

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

else if(Question2.check==2)

{

Font f=new Font("ITALIC",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==2)

{

g.setColor(Color.GREEN);

Font f=new Font("ITALIC",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

else if(Question2.check==3)

{

Font f=new Font("GREEK",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==3)

{

g.setColor(Color.CYAN);

Font f=new Font("GREEK",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

else if(Question2.check==4)

{

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("JAVA",x,y);

}

else if(Question2.check1==4)

{

g.setColor(Color.MAGENTA);

Font f=new Font("ARIAL",Font.BOLD,16);

g.setFont(f);

g.drawString("java", x1, y1);

}

}

public static void main(String args[])

{

Question2\_2 b=new Question2\_2();

b.setVisible(true);

}

}

**Q2.**

**a)** Write a java program using JApplet that provides a simple demonstration of MouseEvents. Shapes are drawn on a black background of the panel(created using separate top-level class) when the user clicks on the panel.

(Handle these in MouseClicked event using Anonymous MouseAdapter Class)

**i)** If the user double-clicks the panel, the panel should be cleared. (use getClickCount() returns an int)

**ii)** If the user right-clicks the panel, a blue oval is drawn with black boundary.(use isMetaDown() returns true if right clicked otherwise false)

**iii)** Otherwise, when the user clicks (single left\_click), a red rectangle is drawn.

1. Modify part a by creating panel using inner class.

SOLUTION:

import java.awt.Color;

import java.awt.Container;

import java.awt.Graphics;

import java.awt.event.MouseEvent;

import java.awt.event.MouseListener;

import java.awt.event.MouseMotionListener;

import javax.swing.JApplet;

import javax.swing.JPanel;

public class Question3 extends JApplet implements MouseListener,MouseMotionListener

{

static int check=0;

static int check1=0;

static int check2=0;

Panel s;

public void init()

{

s=new Panel();

Container c=getContentPane();

c.add(s);

s.addMouseListener(this);

s.addMouseMotionListener(this);

}

public void mouseDragged(MouseEvent arg0) {}

public void mouseMoved(MouseEvent arg0) {}

public void mouseClicked(MouseEvent e)

{

{

if(e.getClickCount()==2)

{

check=check+1;

}

else if(e.isMetaDown()==true)

{

check1=check1+1;

}

else if(e.isMetaDown()==false)

{

check2=check2+1;

}

}

}

public void mouseEntered(MouseEvent arg0) {}

public void mouseExited(MouseEvent arg0) {}

public void mousePressed(MouseEvent e){}

public void mouseReleased(MouseEvent arg0) {}

}

class Panel extends JPanel

{

public void paint(Graphics g )

{

if(Question3.check==1)

{

setBackground(Color.WHITE);

}

else if(Question3.check1==1)

{

setBackground(Color.BLACK);

g.setColor(Color.BLUE);

g.fillOval(10, 10, 10, 10);

}

else if(Question3.check2==1)

{

g.setColor(Color.RED);

g.fillRect(20, 20, 150, 150);

}

}

}

PART B:

import java.awt.Color;

import java.awt.Container;

import java.awt.Graphics;

import java.awt.event.MouseEvent;

import java.awt.event.MouseListener;

import java.awt.event.MouseMotionListener;

import javax.swing.JFrame;

import javax.swing.JPanel;

public class Question3\_3 extends JFrame implements MouseListener,MouseMotionListener

{

static int check=0;

static int check1=0;

static int check2=0;

Panel s;

public void mouseDragged(MouseEvent e) {}

public void mouseMoved(MouseEvent e) {}

public void mouseClicked(MouseEvent e)

{

{

if(e.getClickCount()==2)

{

check=check+1;

}

else if(e.isMetaDown()==true)

{

check1=check1+1;

}

else if(e.isMetaDown()==false)

{

check2=check2+1;

}

}

}

public void mouseEntered(MouseEvent e) {}

public void mouseExited(MouseEvent e) {}

public void mousePressed(MouseEvent e) {}

public void mouseReleased(MouseEvent e) {}

Question3\_3()

{

{

s=new Panel();

Container c=getContentPane();

c.add(s);

s.addMouseListener(this);

s.addMouseMotionListener(this);

}

}

class Panel extends JPanel

{

public void paint(Graphics g )

{

if(Question3.check==1)

{

setBackground(Color.WHITE);

}

else if(Question3.check1==1)

{

setBackground(Color.BLACK);

g.setColor(Color.BLUE);

g.fillOval(10, 10, 10, 10);

}

else if(Question3.check2==1)

{

g.setColor(Color.RED);

g.fillRect(20, 20, 150, 150);

}

}

}

public static void main(String arr[])

{

Question3\_3 a=new Question3\_3();

a.setVisible(true);

}

}