

PERTEMUAN 14

APLIKASI GRAFIKA KOMPUTER

A. TUJUAN PEMBELAJARAN

Setelah menyelesaikan materi pada pertemuan ini, mahasiswa mampu membuat aplikasi grafika komputer.

B. URAIAN MATERI

1. Aplikasi Grafika komputer

Contoh Soal Membuat Aplikasi Grafika Komputer beserta pemograman nya, gambarkan animasi menggunakan Pemograman Java2d

Tambahkan lah menu label UAS .

Untuk source code nya, silahkan ketik source code berikut :

```
/*
```

```
* To change this license header, choose License Headers in Project Properties.
```

```
* To change this template file, choose Tools | Templates
```

```
* and open the template in the editor.
```

```
*/
```

```
package UJIAN;
```

```
/**
```

```
*
```

```
* @author lenovo
```

```
*/
```

```
import java.awt.BasicStroke;
```

```
import java.awt.Color;
```

```
import java.awt.Dimension;

import java.awt.Font;

import java.awt.Graphics;

import java.awt.Graphics2D;

import java.awt.geom.Ellipse2D;

import java.awt.geom.GeneralPath;

import javax.swing.JFrame;

import javax.swing.JPanel;

import javax.swing.SwingUtilities;

/**
 *
 * @author lenovo
 */

public class animasi extends JPanel {

    //Membuat variabel thread

    Thread animasi, repaint;

    int x=10,y=10,a=10, batas = 240;

    int xOrang = -100, yOrang = 100, v = 1;

    public animasi() {

        setPreferredSize(new Dimension(500, 300));

        setFocusable(true);

        setBackground(Color.black);

        requestFocusInWindow();

        initThread();
```

```

//untuk memulai thread

animasi.start();

repaint.start();
}

```

```

@Override

protected void paintComponent(Graphics g) {

    super.paintComponent(g);

    Graphics2D g2 = (Graphics2D) g;

    drawText(g2);

    drawOrang(g2, xOrang, yOrang, v);

}

```

```

//method untuk menampung thread

public void initThread() {

    animasi = new Thread(new Runnable() {

        public void run() {

            while (true) {

                // <editor-fold defaultstate="collapsed" desc="menggerakkan
Orang">

                if (xOrang < 500) {

                    if (v == 1) {

                        xOrang = xOrang + 10;

                        v = 2;

                    } else {

                        xOrang = xOrang + 10;

```

```

        v = 1;
    }
} else {
    xOrang = -100;
}
// </editor-fold>
try {
    //untuk mengatur kecepatan thread, semakin kecil nilai
semakin cepat

    Thread.sleep(150);
} catch (Exception e) {
}
}
}
});

```

```

repaint = new Thread(new Runnable() {

    public void run() {
        while (true) {
            // <editor-fold defaultstate="collapsed" desc="Untuk mengacak
warna">

            if(a<batas){
                a=a+15;
                batas=240;
            }else{
                a=a-15;
            }
        }
    }
});

```

```

        batas=15;
    }
// </editor-fold>

// <editor-fold defaultstate="collapsed" desc="menggerakkan
text">

x=(int)(Math.random()*10);
y=(int)(Math.random()*10);
// </editor-fold>

try {
    //untuk mengatur kecepatan thread, semakin kecil nilai
semakin cepat

    Thread.sleep(10);
} catch (Exception e) {
}

//untuk memanggil repaint
SwingUtilities.invokeLater(new Runnable() {

    public void run() {
        repaint();
    }
});
}

});
}

public void drawText(Graphics2D g2) {

```

```

        g2.setFont(new Font("Comic sans ms", 1, 35));

        g2.setColor(new Color((int)(Math.random()*250),
(int)(Math.random()*250), (int)(Math.random()*250), a));

        g2.drawString("DWI SUTIKNO", 20+x, 50+y);
    }

    public void drawOrang(Graphics2D g2, int x, int y, int v) {
        g2.setStroke(new BasicStroke(6, BasicStroke.CAP_ROUND,
BasicStroke.JOIN_ROUND));

        Ellipse2D kepala = new Ellipse2D.Double(x + 38, y + 10, 20, 20);

        GeneralPath gp = new GeneralPath();

        gp.moveTo(x + 46, y + 32);
        gp.lineTo(x + 34, y + 52);
        gp.lineTo(x + 27, y + 73);
        gp.moveTo(x + 46, y + 32);
        gp.lineTo(x + 54, y + 55);
        gp.lineTo(x + 71, y + 72);
        gp.moveTo(x + 46, y + 32);
        gp.lineTo(x + 46, y + 69);
        gp.lineTo(x + 46, y + 93);
        gp.lineTo(x + 26, y + 112);
        gp.moveTo(x + 46, y + 69);
        gp.lineTo(x + 59, y + 93);
        gp.lineTo(x + 66, y + 118);

        //=====
        =====

        Ellipse2D kepala1 = new Ellipse2D.Double(x + 42, y + 10, 20, 20);

        GeneralPath gp1 = new GeneralPath();

        gp1.moveTo(x + 46, y + 29);

```

```
gp1.lineTo(x + 40, y + 48);
gp1.lineTo(x + 40, y + 77);
gp1.moveTo(x + 46, y + 29);
gp1.lineTo(x + 49, y + 58);
gp1.lineTo(x + 51, y + 74);
gp1.moveTo(x + 46, y + 29);
gp1.lineTo(x + 46, y + 68);
gp1.lineTo(x + 52, y + 90);
gp1.lineTo(x + 46, y + 120);
gp1.moveTo(x + 46, y + 68);
gp1.lineTo(x + 60, y + 92);
gp1.lineTo(x + 38, y + 106);

g2.setPaint(Color.white);

if (v == 1) {
    g2.fill(kepala);
    g2.draw(gp);
    g2.draw(kepala);
} else if (v == 2) {
    g2.fill(kepala1);
    g2.draw(gp1);
    g2.draw(kepala1);
}
}

public void xplay() {
```

```
java.awt.EventQueue.invokeLater(new Runnable() {  
    public void run() {  
        final JFrame frame = new JFrame("Animasi Orang");  
        frame.setDefaultCloseOperation(  
            JFrame.DISPOSE_ON_CLOSE);  
        frame.add(new animasi());  
        frame.pack();  
        frame.setResizable(false);  
        frame.setLocationRelativeTo(null);  
        frame.setVisible(true);  
    }  
});  
  
}  
// </editor-fold>  
public static void main(String salis[]) {  
    new animasi().xplay();  
}  
}
```

Berikut ouput nya



Gambar 14. 1 Output Animasi Orang

Untuk nomor 2 silahkan ketik source code berikut :

```
/*
```

* To change this license header, choose License Headers in Project Properties.

* To change this template file, choose Tools | Templates

* and open the template in the editor.

```
*/
```

```
package UJIAN;
```

```
import java.awt.*;
```

```
import java.awt.event.*;
```

```
import java.awt.geom.*;
```

```
import javax.swing.*;
```

```
/**
```

```
*
```

```
* @author lenovo
```

```
*/
```

```
public class uas extends JPanel{

    public uas(){

        this.setPreferredSize(new Dimension(300,250));

        this.setBackground(Color.WHITE);

    }

    protected void paintComponent(Graphics g){

        super.paintComponent(g);

        Graphics2D g2 = (Graphics2D) g;

        Polygon kotak = new Polygon();

        kotak.addPoint(10,10);

        kotak.addPoint(200,10);

        kotak.addPoint(200,110);

        kotak.addPoint(30,110);

        kotak.addPoint(10,125);

        kotak.addPoint(20,110);

        kotak.addPoint(10,110);

        g2.setColor(Color.yellow);

        g2.fill(kotak);

        g2.setColor(Color.black);

        g2.drawString ("Komputer Grafik 1",50,50);

        g2.draw(kotak);

    }

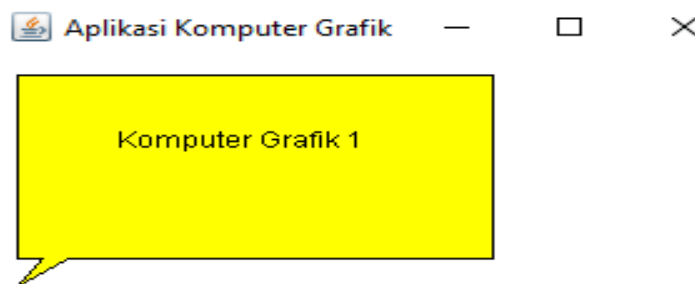
    public static void main(String [] args){

        JFrame frame = new JFrame("Aplikasi Komputer Grafik");

        frame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
```

```
uas asik = new uas();  
frame.getContentPane();  
frame.add(asik);  
frame.pack();  
frame.setVisible(true);  
}  
}
```

Berikut hasil output nya :



Gambar 14. 2 Output Aplikasi Komputer Grafik

Silahkan pelajari pertemuan 10 – 13

2. Bahan UAS

Buat tugas kelompok untuk membuat Source code aplikasi grafika komputer dengan Bahasa python.

C. SOAL LATIHAN/TUGAS

| Latihan | Petunjuk Pengerjaan Tugas |
|-----------------------------|---|
| Latihan Pertemuan 14 | 1. Buatlah Tulisan “Selamat Datang Tangerang” di bingkai Bulat dengan Bahasa pemograman Ruby. |

D. REFERENSI