

Laporan Praktikum

Bahasa Pemrograman 1

Dosen pengampu : (*Dede Husen, M.Kom.*)

Modul 2



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Pre Test

1. Tuliskan bentuk umum struktur program Applet Java

```
/*  
  
 * 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.  
 */  
  
import java.applet.Applet;  
import java.awt.Graphics;  
/**  
 *  
 * @author Muhammad Rizal Nur F  
 */  
public class Applet_Umum extends Applet {  
  
    /**  
     * Initialization method that will be called after the applet is loaded into  
     * the browser.  
     */  
    public void init() {  
        // TODO start asynchronous download of heavy resources  
    }  
    public void start() {  
  
    }  
    public void stop() {  
        // Logika untuk menghentikan applet  
    }  
  
    // Method yang dipanggil saat applet dihancurkan  
    public void destroy() {
```

```

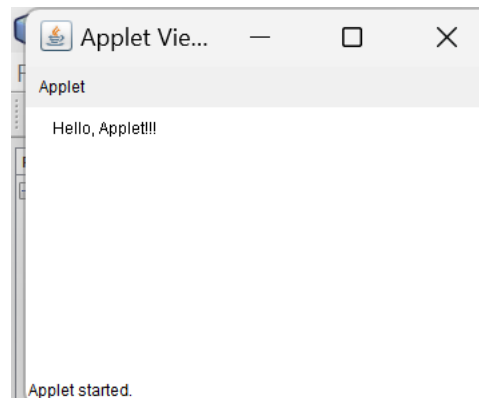
        // Logika untuk membersihkan sebelum applet dihancurkan
    }

    // Method untuk menggambar di applet
    public void paint(Graphics g) {
        // Logika untuk menggambar di layar
        g.drawString("Hello, Applet!!!", 20, 20);
    }
}

// TODO overwrite start(), stop() and destroy() methods

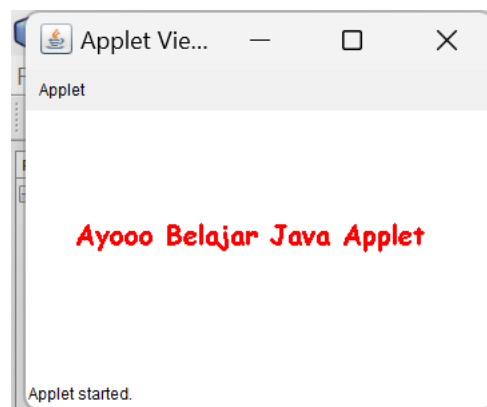
```

Hasil Run:



Praktikum

BP1_M2_P1_Rizal



Script Code : /*

* Click

nbfs://nbhost/SystemFile

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ses/license-default.txt to

change this license

* Click

nbfs://nbhost/SystemFile

System/Templates/Class

es/Applet.java to edit

this template

*/

import

java.applet.Applet;

import java.awt.*;

/**

*

* @author Muhammad

Rizal Nur F

*/

public class

BP1_M2_P1_Rizal

extends Applet {

```
/**  
  
 * Initialization  
method that will be  
called after the applet is  
loaded into  
  
 * the browser.  
  
*/  
  
@Override  
  
public void init() {  
  
    // TODO start  
asynchronous download  
of heavy resources  
  
}  
  
  
    // TODO overwrite  
start(), stop() and  
destroy() methods  
  
@Override  
  
    public void  
paint(Graphics g){  
  
        Font f = new  
Font("Comic Sans MS",  
Font.BOLD, 20);  
  
        g.setFont (f);
```

```

g.setColor(Color.red);

    int xPusat =
this.getSize().width/2;

    int yPusat =
this.getSize().height/2;

    String s =
"Ayooo Belajar Java
Applet!!!";

    FontMetrics fm
= this.getFontMetrics(f);

    int posisiX =
xPusat -
(fm.stringWidth(s)/2);

g.drawString("Ayooo
Belajar Java Applet",
posisiX, yPusat);

    }

}

```

Analisis :

Program Java di atas adalah sebuah applet yang menampilkan teks "Ayooo Belajar Java Applet" di tengah layar dengan font "Comic Sans MS" berukuran 20, berwarna merah, dan bergaya tebal.

Penjelasan tentang kode:

- **Kelas BP1_M2_P1_Rizal** memperluas Applet.
- **Metode init()** untuk inisialisasi, tapi kosong di sini.

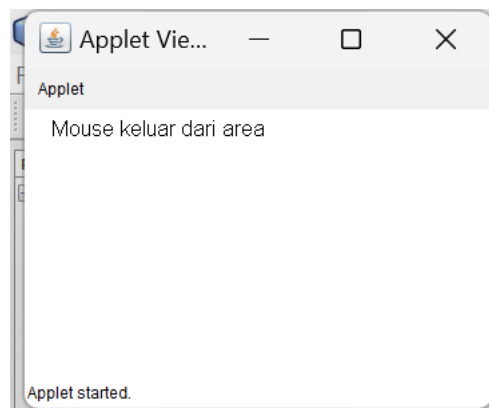
➤ Metode **paint(Graphics g)** digunakan untuk menggambar teks:

- Font diatur ke "Comic Sans MS" dengan warna merah.
- Posisi teks dihitung agar tampil di tengah layar applet.

Hasil ketika dijalankan: Teks ditampilkan di tengah layar applet dengan gaya yang telah ditentukan.

Post Test

1. BP1_M2_PostTest1_Rizal_AppletMouse



Script Code :

```
/*  
  
 * 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.  
 */  
  
import java.applet.Applet;  
import java.awt.*;  
import java.awt.event.*;  
  
/**  
 *  
 * @author Muhammad Rizal Nur F  
 */
```

```
public class BP1_M2_PostTest1_Rizal_AppletMouse extends Applet implements  
MouseListener, MouseMotionListener {
```

```
    private String message = "Arahkan dan klik mouse pada area ini";
```

```
    /**
```

```
     * Initialization method that will be called after the applet is loaded into
```

```
     * the browser.
```

```
    */
```

```
    @Override
```

```
    public void init() {
```

```
        addMouseListener(this);
```

```
        addMouseMotionListener(this);
```

```
        // TODO start asynchronous download of heavy resources
```

```
    }
```

```
    @Override
```

```
    public void paint(Graphics g) {
```

```
        g.setFont(new Font("Arial", Font.PLAIN, 16));
```

```
        g.drawString(message, 20, 20);
```

```
    }
```

```
    // Event handler untuk mouse klik
```

```
    @Override
```

```
    public void mouseClicked(MouseEvent e) {
```

```
        message = "Mouse diklik pada: " + e.getX() + ", " + e.getY();
```

```
        repaint();
```

```
    }
```



```
// Event handler untuk mouse masuk
```

```
@Override
```

```
public void mouseEntered(MouseEvent e) {  
    message = "Mouse masuk area";  
    repaint();  
}
```

```
// Event handler untuk mouse keluar
```

```
@Override
```

```
public void mouseExited(MouseEvent e) {  
    message = "Mouse keluar dari area";  
    repaint();  
}
```

```
// Event handler untuk mouse ditekan
```

```
@Override
```

```
public void mousePressed(MouseEvent e) {}
```

```
// Event handler untuk mouse dilepas
```

```
@Override
```

```
public void mouseReleased(MouseEvent e) {}
```

```
// Event handler untuk pergerakan mouse
```

```
@Override
```

```
public void mouseMoved(MouseEvent e) {  
    message = "Mouse bergerak ke: " + e.getX() + ", " + e.getY();  
    repaint();  
}
```

```

@Override

public void mouseDragged(MouseEvent e) {}

}

// TODO start asynchronous download of heavy resources

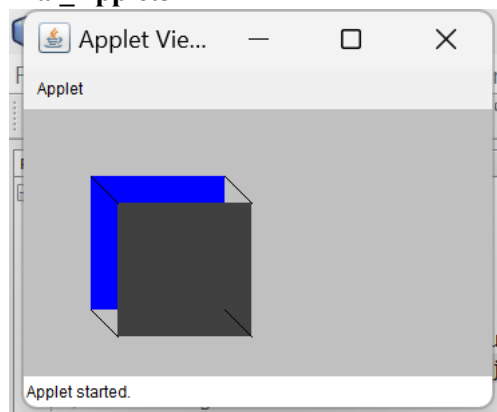
// TODO overwrite start(), stop() and destroy() methods

```

Analisis :

- Program ini menangani beberapa event mouse, termasuk klik, masuk dan keluar dari area applet, serta pergerakan mouse.
- mouseClicked akan menampilkan koordinat klik mouse, sementara mouseMoved akan menampilkan posisi saat mouse bergerak di area applet.
- Event-event mouse yang tidak digunakan didefinisikan sebagai metode kosong.

2. BP1_M2_PostTest2_Rizal_Applet3D



Script Code:

```

/*
 * 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.
 */

import java.applet.Applet;
import java.awt.*;

/**
 *
 * @author Muhammad Rizal Nur F
 */

```

```

public class BP1_M2_PostTest2_Rizal_Applet3D extends Applet {

    /**
     * Initialization method that will be called after the applet is loaded into
     * the browser.
     */
    @Override
    public void paint(Graphics g) {
        setBackground(Color.lightGray);

        g.setColor(Color.blue);
        g.fillRect(50, 50, 100, 100);

        g.setColor(Color.darkGray);
        g.fillRect(70, 70, 100, 100);

        g.setColor(Color.black);
        g.drawLine(50, 50, 70, 70);
        g.drawLine(150, 50, 170, 70);
        g.drawLine(50, 150, 70, 170);
        g.drawLine(150, 150, 170, 170);
    }

    // TODO start asynchronous download of heavy resources
    // TODO overwrite start(), stop() and destroy() methods
}

```

Analisis:

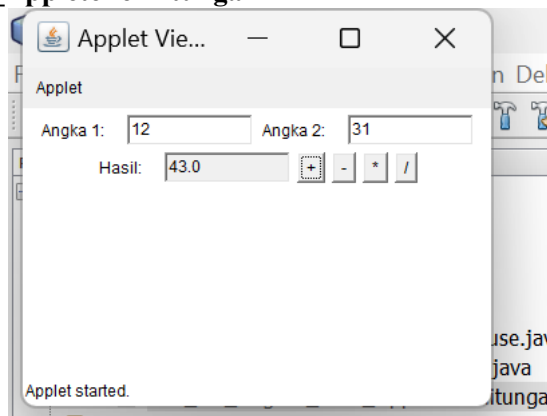
Program ini menggambar dua persegi panjang, satu di belakang dan satu di depan, untuk memberikan ilusi kedalaman.

Garis-garis yang menghubungkan sudut-sudut persegi panjang membantu memperkuat kesan tiga dimensi.

`setBackground(Color.lightGray);` memberi warna latar belakang pada applet.

Tugas

1. BP1_M2_Tugas1_Rizal_AppletPerhitungan



Script Code:

```

/*

```

* 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.

*/

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

```
/**
```

```
 *
```

```
 * @author Muhammad Rizal Nur F
```

```
 */
```

```
public class BP1_M2_Tugas1_Rizal_AppletePerhitungan extends Applet
implements ActionListener {
    TextField input1, input2, result;
    Button add, subtract, multiply, divide;
```

```
/**
```

```
 * Initialization method that will be called after the applet is loaded into
 * the browser.
```

```
 */
```

```
public void init() {
    input1 = new TextField(10);
    input2 = new TextField(10);
    result = new TextField(10);
    result.setEditable(false);

    add = new Button("+");
    subtract = new Button("-");
    multiply = new Button("*");
    divide = new Button("/");

    add.addActionListener(this);
    subtract.addActionListener(this);
    multiply.addActionListener(this);
    divide.addActionListener(this);

    add(new Label("Angka 1:"));
    add(input1);
    add(new Label("Angka 2:"));
    add(input2);
    add(new Label("Hasil:"));
    add(result);
    add(add);
    add(subtract);
    add(multiply);
    add(divide);
```

```

    }

    @Override
    public void actionPerformed(ActionEvent e) {
        try {
            double num1 = Double.parseDouble(input1.getText());
            double num2 = Double.parseDouble(input2.getText());
            double hasil = 0;

            if (e.getSource() == add) {
                hasil = num1 + num2;
            } else if (e.getSource() == subtract) {
                hasil = num1 - num2;
            } else if (e.getSource() == multiply) {
                hasil = num1 * num2;
            } else if (e.getSource() == divide) {
                if (num2 != 0) {
                    hasil = num1 / num2;
                } else {
                    result.setText("Error: Division by zero");
                    return;
                }
            }

            result.setText(String.valueOf(hasil));
        } catch (NumberFormatException ex) {
            result.setText("Input tidak valid");
        }
    }

    // TODO start asynchronous download of heavy resources
    // TODO overwrite start(), stop() and destroy() methods
}

```

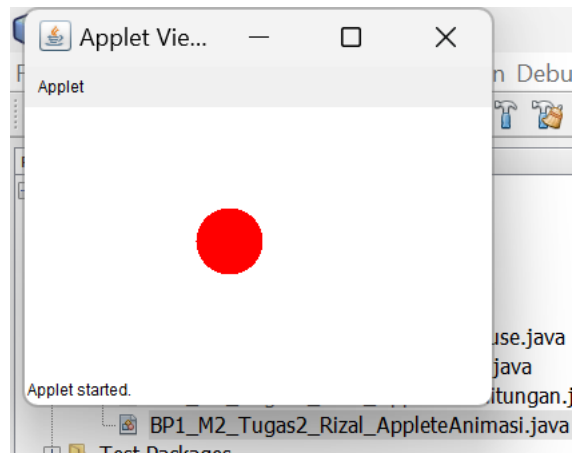
Analisis:

Program ini menggunakan TextField untuk menerima input angka dan menampilkan hasil.

Empat tombol digunakan untuk operasi aritmatika: penjumlahan (+), pengurangan (-), perkalian (*), dan pembagian (/).

Hasil perhitungan ditampilkan di TextField hasil, dan kesalahan input atau pembagian oleh nol ditangani.

2. BP1_M2_Tugas2_Rizal_AppleteAnimasi



Script Code :

```

/*
 * To change this license header, choose License Headers in Project Properties.
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 * and open the template in the editor.
 */

import java.applet.Applet;
import java.awt.*;

/**
 *
 * @author Muhammad Rizal Nur F
 */
public class BP1_M2_Tugas2_Rizal_AppleteAnimasi extends Applet implements Runnable
{
    private int x = 0;
    private int dx = 2;
    private Thread animasiThread;

    /**
     * Initialization method that will be called after the applet is loaded into
     * the browser.
     */

    @Override

```

```
public void init() {  
    setBackground(Color.white);  
}
```

```
@Override  
public void start() {  
    animasiThread = new Thread(this);  
    animasiThread.start();  
}
```

```
@Override  
public void run() {  
    while (true) {  
        x += dx;  
        if (x < 0 || x > getWidth() - 50) {  
            dx = -dx;  
        }  
        repaint();  
        try {  
            Thread.sleep(50);  
        } catch (InterruptedException e) {  
            e.printStackTrace();  
        }  
    }  
}
```

```
@Override  
public void paint(Graphics g) {  
    g.setColor(Color.red);  
    g.fillOval(x, getHeight() / 2 - 25, 50, 50);  
}
```

```
@Override  
public void stop() {  
    animasiThread = null;  
}  
// TODO start asynchronous download of heavy resources  
  
// TODO overwrite start(), stop() and destroy() methods  
}
```

Analisis :

Lingkaran Digambar yang berwarna merah pada posisi x yang berubah seiring waktu untuk menciptakan animasi, dx menentukan kecepatan gerak dan arah lingkaran. Ketika lingkaran mencapai batas kanan atau kiri, arah geraknya dibalik, membuatnya bergerak bolak-balik.