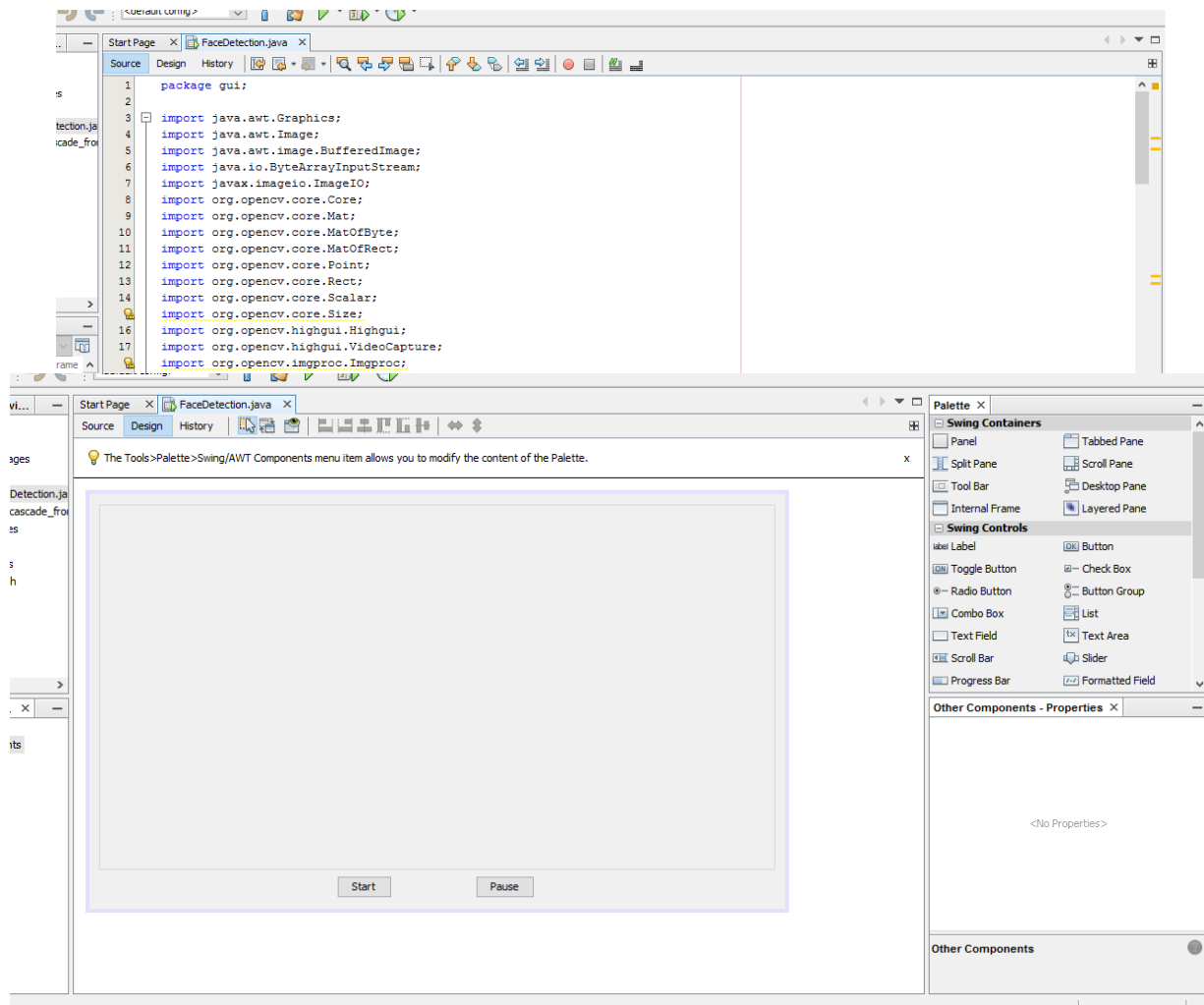


TUGAS JAVA “FACE DETECTION”

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*Screenshot 1



```
package gui;
```

```
import java.awt.Graphics;
```

```
import java.awt.Image;
```

```
import java.awt.image.BufferedImage;
```

```
import java.io.ByteArrayInputStream;
```

```
import javax.imageio.ImageIO;
```

```
import org.opencv.core.Core;
```

```
import org.opencv.core.Mat;
```

```
import org.opencv.core.MatOfByte;
```

```

import org.opencv.core.MatOfRect;
import org.opencv.core.Point;
import org.opencv.core.Rect;
import org.opencv.core.Scalar;
import org.opencv.core.Size;
import org.opencv.highgui.Highgui;
import org.opencv.highgui.VideoCapture;
import org.opencv.imgproc.Imgproc;
import org.opencv.objdetect.CascadeClassifier;

public class FaceDetection extends javax.swing.JFrame {

    private DaemonThread myThread = null;
    int count = 0;
    VideoCapture webSource = null;
    Mat frame = new Mat();
    MatOfByte mem = new MatOfByte();

    CascadeClassifier faceDetector = new
CascadeClassifier(FaceDetection.class.getResource("haarcascade_frontalface_alt.xml").getPath().substri
ng(1));

    MatOfRect faceDetections = new MatOfRect();

    class DaemonThread implements Runnable {

        protected volatile boolean runnable = false;

        @Override
        public void run() {

```

```

synchronized (this) {
    while (runnable) {
        if (webSource.grab()) {
            try {
                webSource.retrieve(frame);

                Graphics g = PanelLayar.getGraphics();

                faceDetector.detectMultiScale(frame, faceDetections);

                for (Rect rect : faceDetections.toArray()) {
                    // System.out.println("ttt");

                    Core.rectangle(frame, new Point(rect.x, rect.y), new Point(rect.x + rect.width, rect.y +
rect.height),

                        new Scalar(0, 255,0));
                }

                Highgui.imencode(".bmp", frame, mem);

                Image im = ImageIO.read(new ByteArrayInputStream(mem.toArray()));

                BufferedImage buff = (BufferedImage) im;

                if (g.drawImage(buff, 0, 0, getWidth(), getHeight()-100 , 0, 0, buff.getWidth(),
buff.getHeight(), null)) {

                    if (runnable == false) {

                        System.out.println("Paused ..... ");

                        this.wait();

                    }

                }

            } catch (Exception ex) {

                System.out.println("Error!!");

                ex.printStackTrace();

            }

        }

    }
}

```

```

    }

}

}

////////

/**
 * Buat form baru FaceDetection
 */
public FaceDetection() {
    initComponents();

    System.out.println(FaceDetection.class.getResource("haarcascade_frontalface_alt.xml").getPath().substring(1));
}

/**
 * This method is called from within the constructor to initialize the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    PanelLayar = new javax.swing.JPanel();
    btnStart = new javax.swing.JButton();
    btnPause = new javax.swing.JButton();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

```

```

javax.swing.GroupLayout PanelLayarLayout = new javax.swing.GroupLayout(PanelLayar);
PanelLayar.setLayout(PanelLayarLayout);
PanelLayarLayout.setHorizontalGroup(
    PanelLayarLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGap(0, 0, Short.MAX_VALUE)
);
PanelLayarLayout.setVerticalGroup(
    PanelLayarLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGap(0, 376, Short.MAX_VALUE)
);

btnStart.setText("Start");
btnStart.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        btnStartActionPerformed(evt);
    }
});

btnPause.setText("Pause");
btnPause.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        btnPauseActionPerformed(evt);
    }
});

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(

```

```

        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addGap(255, 255, 255)
            .addComponent(btnStart)
            .addGap(86, 86, 86)
            .addComponent(btnPause)
            .addContainerGap(258, Short.MAX_VALUE))
        .addGroup(layout.createSequentialGroup()
            .addContainerGap()
            .addComponent(PanelLayar, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addContainerGap())
    );

    layout.setVerticalGroup(
        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
            .addContainerGap()
            .addComponent(PanelLayar, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(btnStart)
                .addComponent(btnPause))
            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
    );

    pack();
} // </editor-fold>

```

```

private void btnPauseActionPerformed(java.awt.event.ActionEvent evt) {

    myThread.runnable = false;      // stop thread

    btnPause.setEnabled(false); // aktifkan tombol start

    btnStart.setEnabled(true);  // nonktifkan tombol pause

    webSource.release(); // berhenti mengambil dari kamera

}

```

```

private void btnStartActionPerformed(java.awt.event.ActionEvent evt) {

    webSource = new VideoCapture(0); // Mengambil video dari default cam

    myThread = new DaemonThread(); //buat objek dari threat class

    Thread t = new Thread(myThread);

    t.setDaemon(true);

    myThread.runnable = true;

    t.start();      //start thrad

    btnStart.setEnabled(false); // nonktifkan tombol start

    btnPause.setEnabled(true); // aktifkan tombol pause

}

```

```

/**
 * @param args the command line arguments
 */
public static void main(String args[]) {

    System.loadLibrary(Core.NATIVE_LIBRARY_NAME);
}

```



```

/* Set the Nimbus look and feel */

//<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">

/* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
 * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
 */

try {

    for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {

        if ("Nimbus".equals(info.getName())) {

            javax.swing.UIManager.setLookAndFeel(info.getClassName());

            break;

        }

    }

    } catch (ClassNotFoundException | InstantiationException | IllegalAccessException |
javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(FaceDetection.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);

    }

//</editor-fold>

//</editor-fold>

/* Create and display the form */

java.awt.EventQueue.invokeLater(new Runnable() {

    @Override

    public void run() {

        new FaceDetection().setVisible(true);

    }

});

```

```
}  
// Variables declaration - do not modify  
private javax.swing.JPanel PanelLayar;  
private javax.swing.JButton btnPause;  
private javax.swing.JButton btnStart;  
// End of variables declaration  
}
```