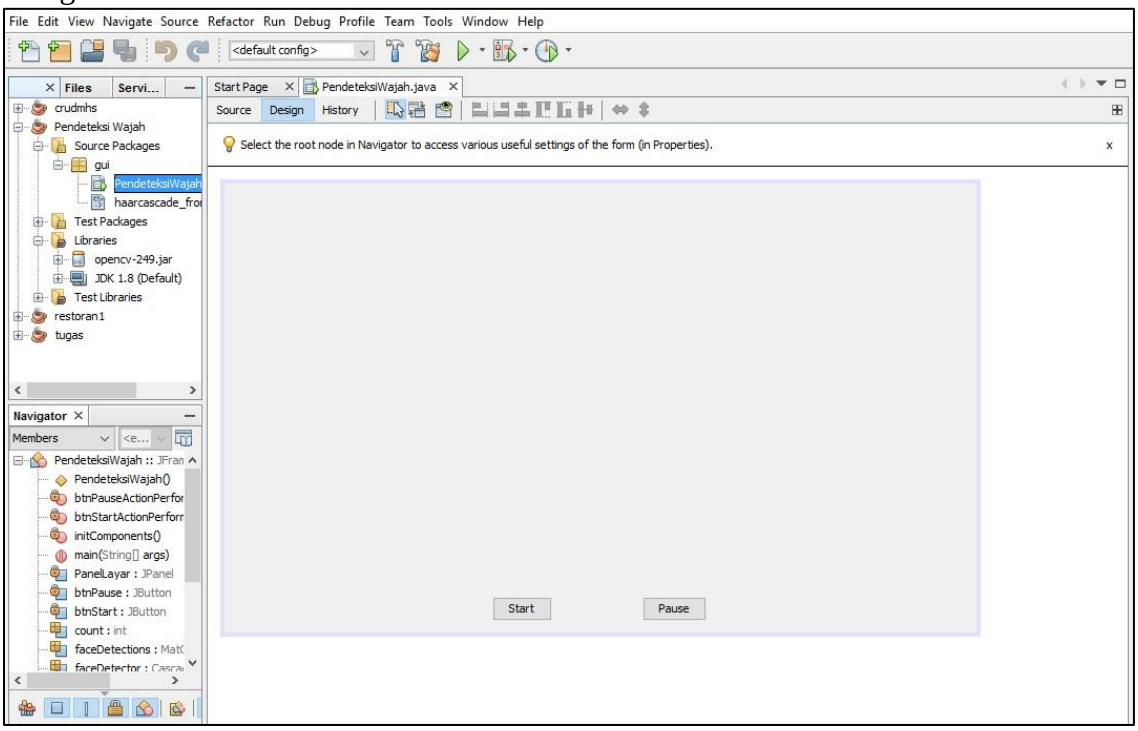
TUGAS
PEMROGRAMAN JAVA

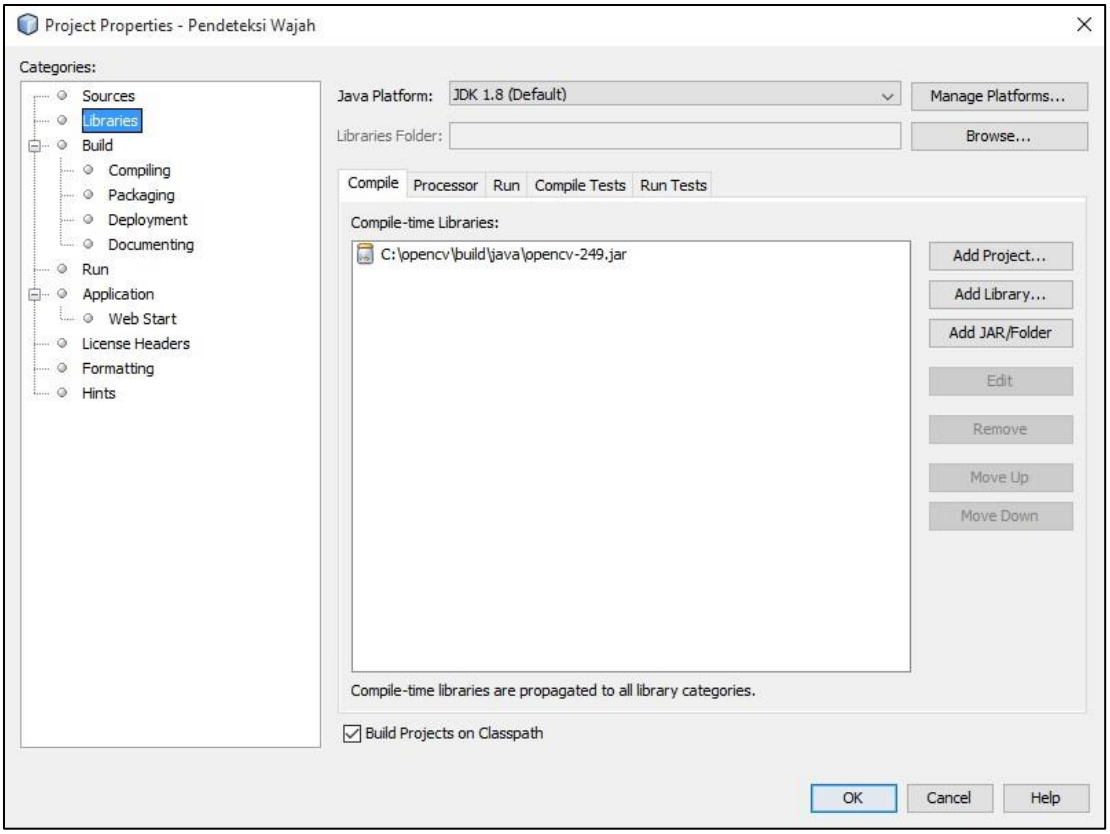
Nama : Firmansyah
NIM : 177200009
Jurusan : Teknik Informatika
Semester : 6

Program Face Detection

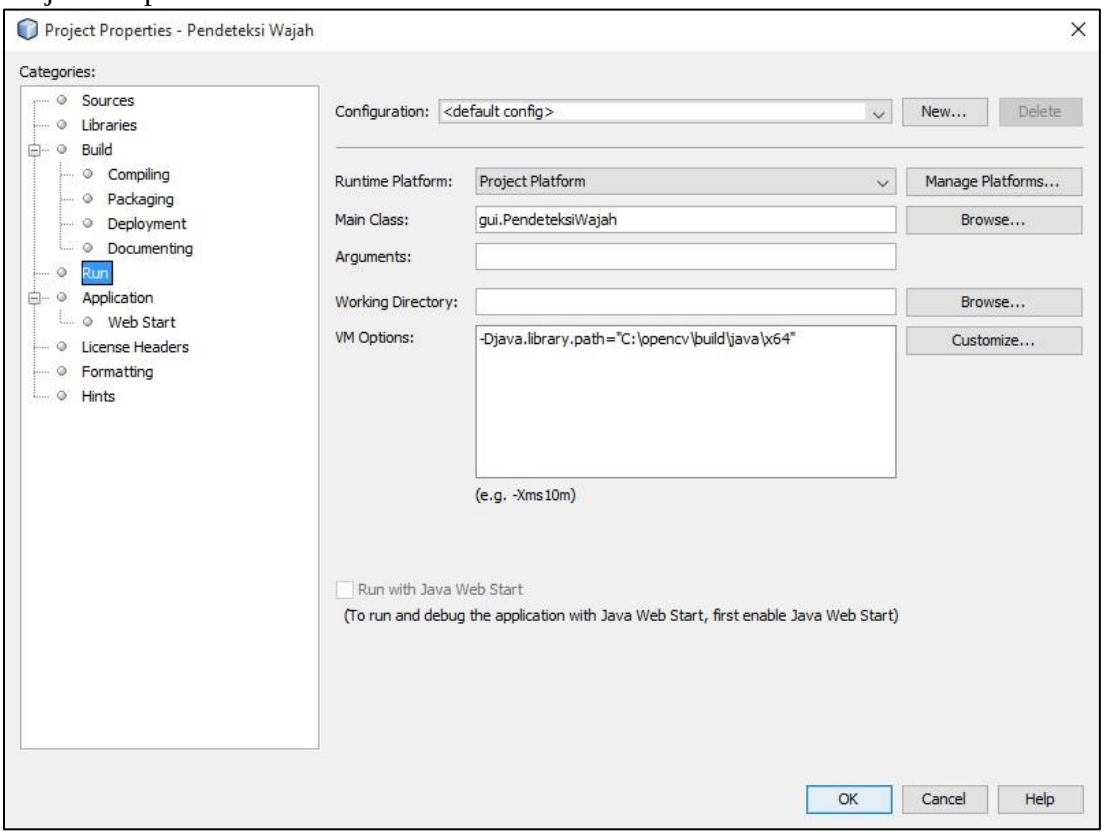
1. Design



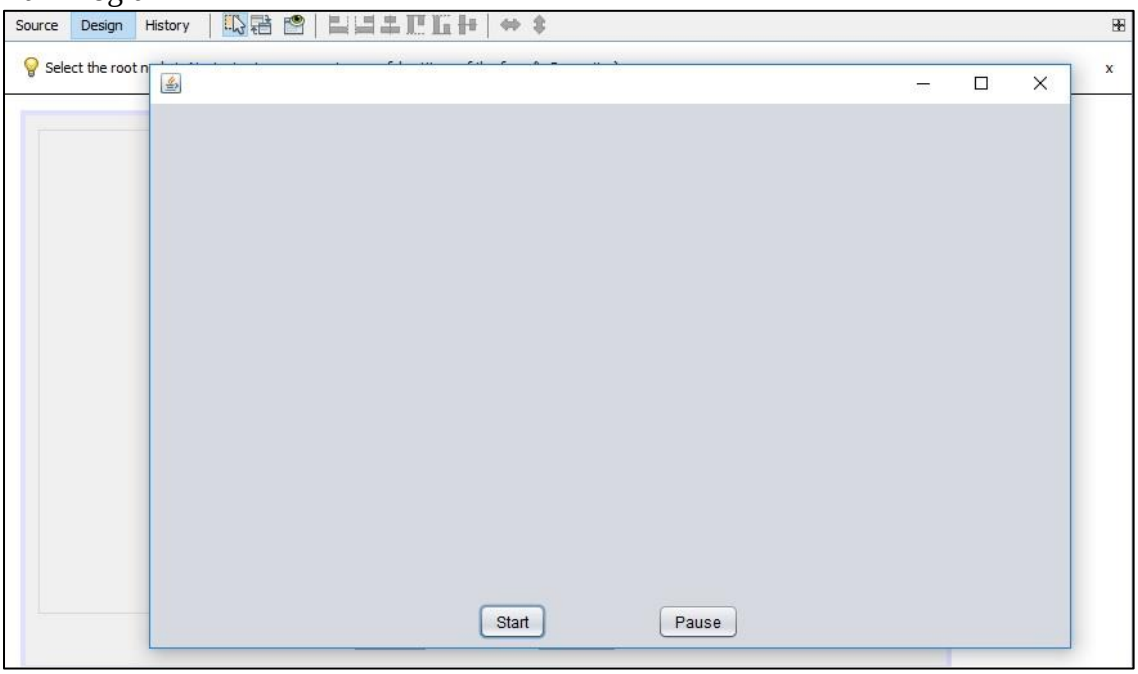
2. Project Properties – Libaries



3. Project Properties – Run

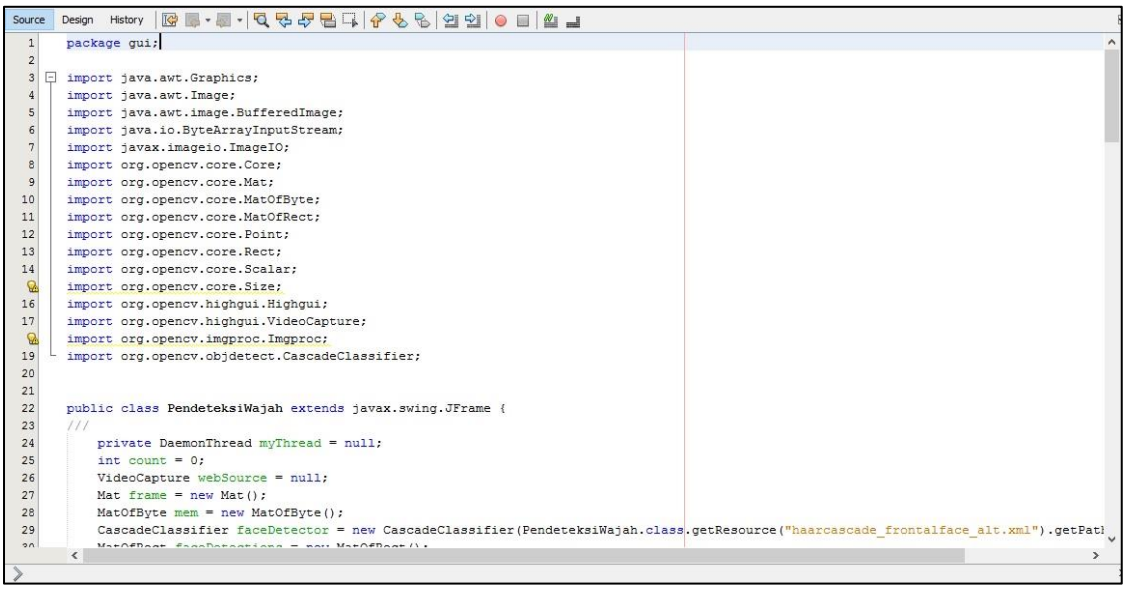


4. Run Program



5. Run Program dan start - hasil mendeteksi wajah

6. Source Code




```
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 PendeteksiWajah 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(PendeteksiWajah.class.getResource("haarcascade_frontalface_alt.xml"
).getPath().substring(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 Pendeteksi Wajah
     */
    public PendeteksiWajah() {
        initComponents();

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

    @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(257, 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 btnStartActionPerformed(java.awt.event.ActionEvent evt) {

        webSource = new VideoCapture(0);
        myThread = new DaemonThread();
        Thread t = new Thread(myThread);
        t.setDaemon(true);
```

```
        myThread.runnable = true;
        t.start();
        btnStart.setEnabled(false);
        btnPause.setEnabled(true);

    }

    private void btnPauseActionPerformed(java.awt.event.ActionEvent evt) {
        myThread.runnable = false;
        btnPause.setEnabled(false);
        btnStart.setEnabled(true);

        webSource.release();

    }

   /**
     * @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(PendeteksiWajah.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        //</editor-fold>
```

```
        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            @Override
            public void run() {
                new PendeteksiWajah().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
}
```