Port City International University

Excellence in Higher Education

UGC & Govt. Approved University at Khulshi in Chittagong

LAB REPORTS

Course Code : CSE 212

Course Title : Object Oriented Programming Sessional

Submitted To

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Topics : 1

Java Environment Setup

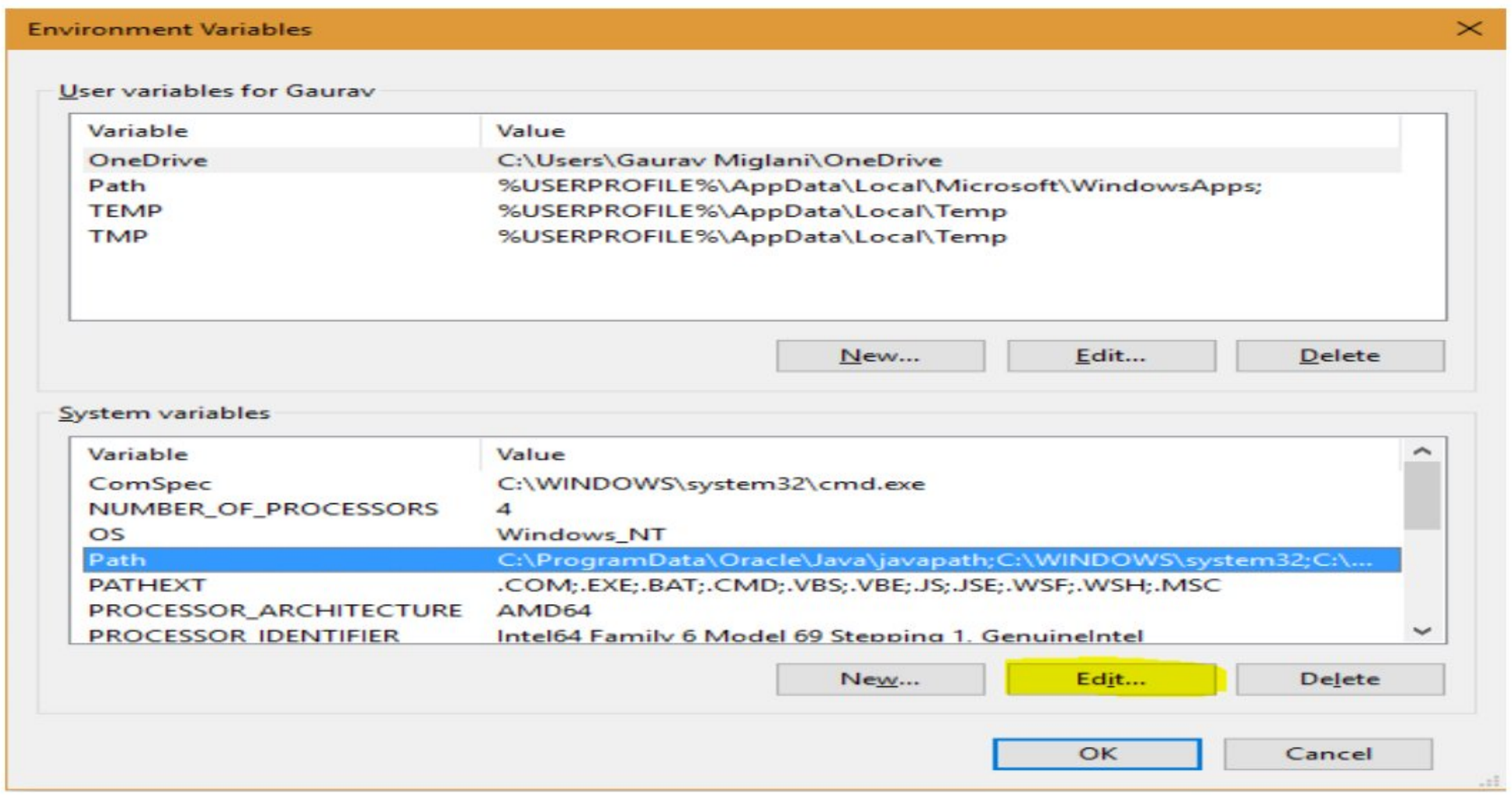
Why do I need to set JAVA _HOME?

The JAVA_HOME environment variable points to the file system location where the JDK or JRE was installed. ... Instead, other programs installed on a desktop computer that require a Java runtime will query the OS for the JAVA_HOME variable to find out where the runtime is installed.

Setting Up the Path for Windows

Assuming you have installed Java in *c:\Program Files\java\jdk* directory −

- Right-click on 'My Computer' and select 'Properties'.
- Click the 'Environment variables' button under the 'Advanced' tab.
- Now, alter the 'Path' variable so that it also contains the path to the Java executable. Example, if the path is currently set to 'C:\WINDOWS\SYSTEM32', then change your path to read 'C:\WINDOWS\SYSTEM32;c:\Program Files\java\jdk\bin'.



. Set JAVA_HOME Environment Varible

if you would prefer to set the JAVA_HOME (or JRE_HOME) variable via the command line:

1. Open Command Prompt (make sure you Run as administrator so you're able to add a system environment variable).
2. Set the value of the environment variable to your JDK (or JRE) installation path as follows:

```
setx -m JAVA_HOME "C:\Progra~1\Java\jdk1.8.0_XX"
```

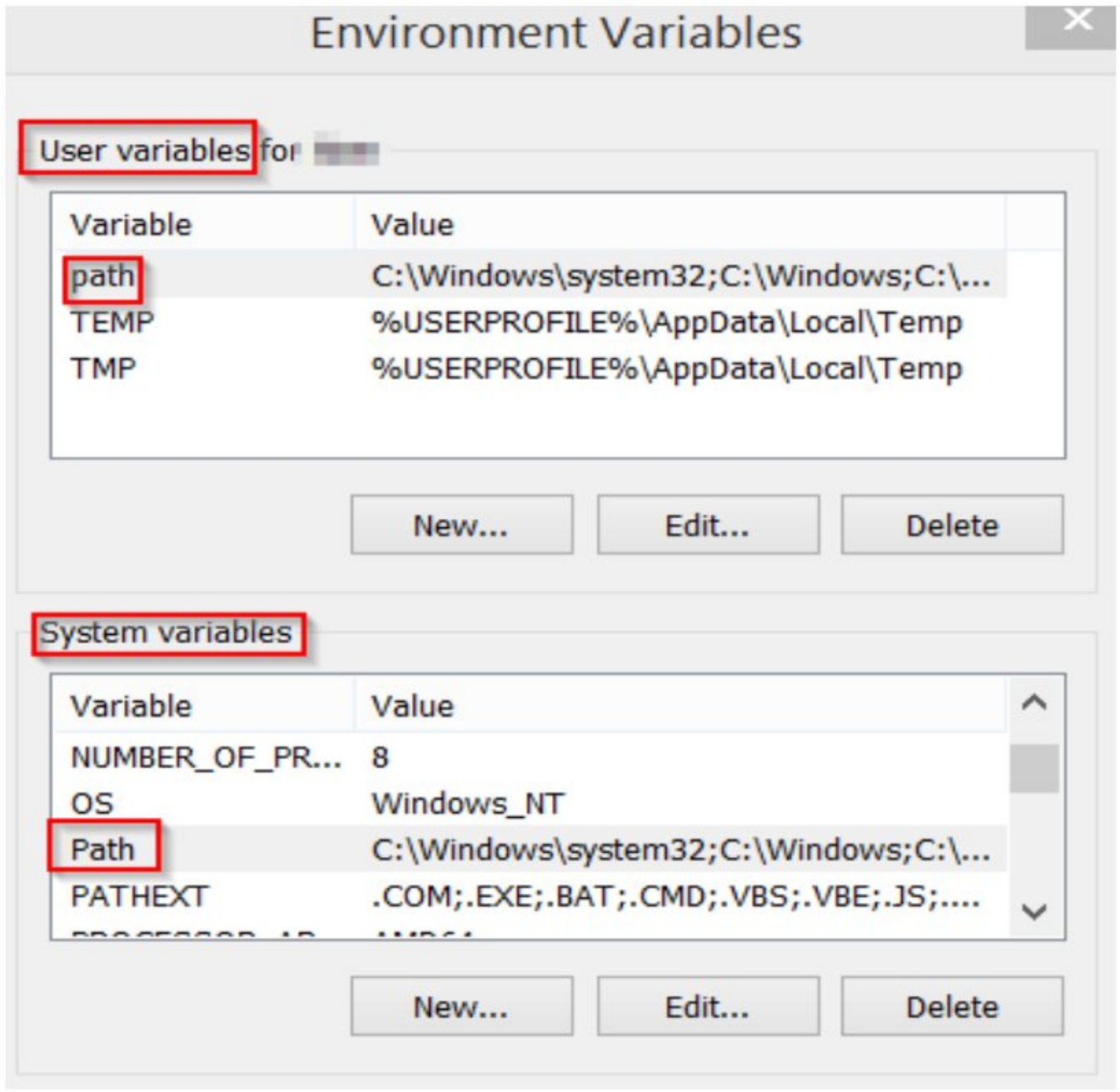
   If the path contains spaces, use the shortened path name.
3. Restart Command Prompt to reload the environment variables then use the following command to check the it's been added correctly.

```
echo %JAVA_HOME%
```

   You should see the path to your JDK (or JRE) installation.

Update System PATH

1. Start the System Control Panel applet (Start - Settings - Control Panel - System).
2. Select the Advanced tab.
3. Click the Environment Variables button.
4. Under System Variables, select Path, then click Edit.



Topic : 2

Calculator Design & Implementation

```
package calculator1;


/**
 *
 * @author user
 */
public class MainFrame extends javax.swing.JFrame {


    double firstnum;
    double secondnum;
    double result;
   String operations;


    public MainFrame() {
        initComponents();
    }


/**
 * 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() {

    jtxtDisplay = new javax.swing.JTextField();
    jBtn2 = new javax.swing.JButton();
    jBtn1 = new javax.swing.JButton();
    jBtn4 = new javax.swing.JButton();
    jBtn3 = new javax.swing.JButton();
    jBtn5 = new javax.swing.JButton();
    jBtn7 = new javax.swing.JButton();
    jBtn8 = new javax.swing.JButton();
    jBtn9 = new javax.swing.JButton();
    jBtn10 = new javax.swing.JButton();
    jBtn6 = new javax.swing.JButton();
    jBtn12 = new javax.swing.JButton();
    jBtn13 = new javax.swing.JButton();
    jBtn14 = new javax.swing.JButton();
    jBtn15 = new javax.swing.JButton();
    jBtn16 = new javax.swing.JButton();
    jBtn18 = new javax.swing.JButton();
    jBtn11 = new javax.swing.JButton();
    jBtn17 = new javax.swing.JButton();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

    jBtn2.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
    jBtn2.setText("2");
    jBtn2.addActionListener(new java.awt.event.ActionListener() {
```

```
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn2ActionPerformed(evt);
    }
});

jBtn1.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn1.setText("1");
jBtn1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn1ActionPerformed(evt);
    }
});

jBtn4.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn4.setText("4");
jBtn4.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn4ActionPerformed(evt);
    }
});

jBtn3.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn3.setText("3");
jBtn3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn3ActionPerformed(evt);
    }
```

```
});

jBtn5.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn5.setText("5");
jBtn5.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn5ActionPerformed(evt);
    }
});

});

jBtn7.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn7.setText("7");
jBtn7.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn7ActionPerformed(evt);
    }
});

jBtn8.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn8.setText("8");
jBtn8.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn8ActionPerformed(evt);
    }
});

jBtn9.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
```

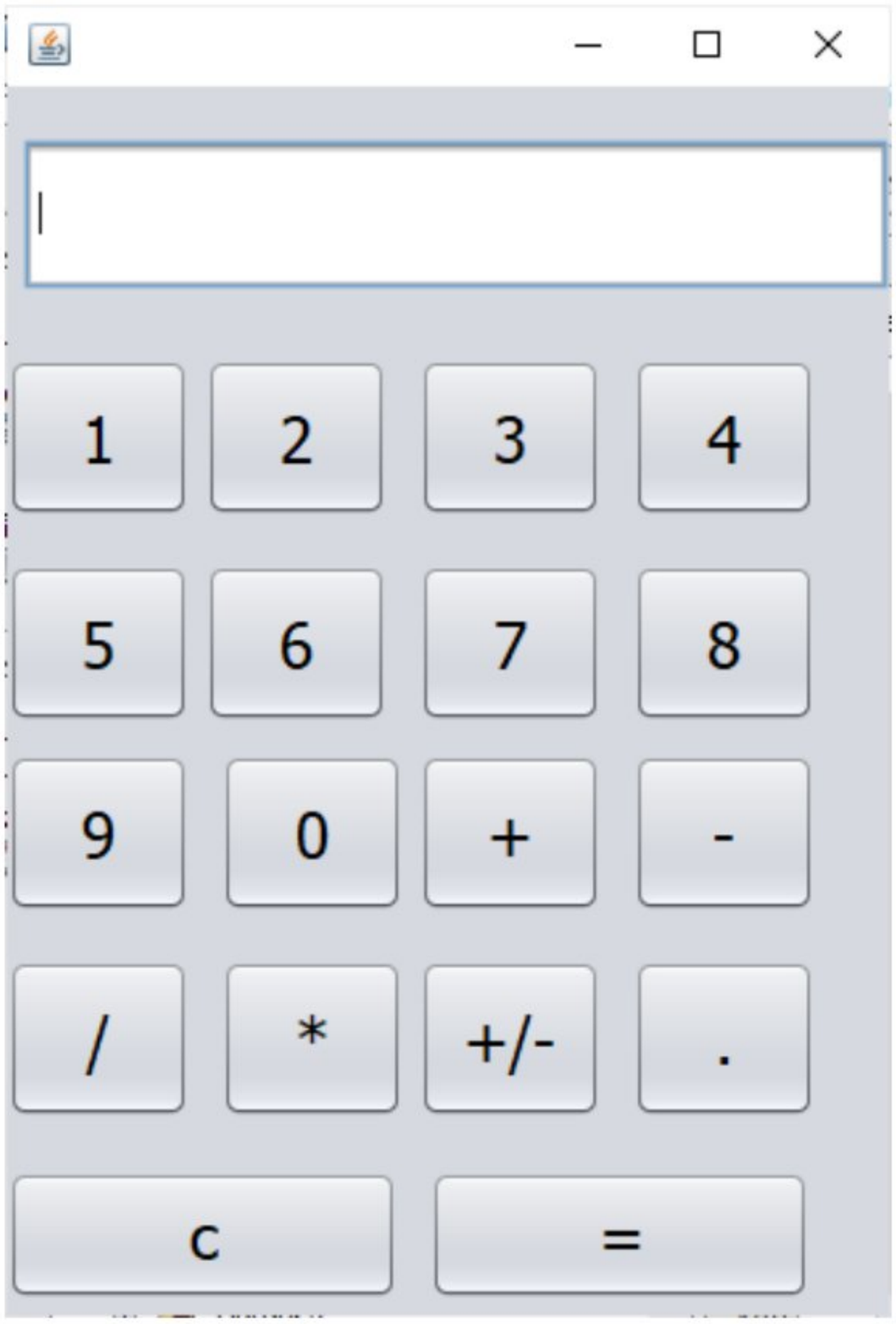
```
jBtn9.setText("9");
jBtn9.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn9ActionPerformed(evt);
    }
});

jBtn10.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn10.setText("0");
jBtn10.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn10ActionPerformed(evt);
    }
});

jBtn6.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn6.setText("6");
jBtn6.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn6ActionPerformed(evt);
    }
});

jBtn12.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn12.setText("-");
jBtn12.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
        jBtn12ActionPerformed(evt);
    }
});

jBtn13.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn13.setText("/");
jBtn13.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn13ActionPerformed(evt);
    }
});

jBtn14.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn14.setText("*");
jBtn14.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn14ActionPerformed(evt);
    }
});

jBtn15.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn15.setText("+/-");
jBtn15.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn15ActionPerformed(evt);
    }
});
```

```
jBtn16.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn16.setText(".");
jBtn16.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn16ActionPerformed(evt);
    }
});

jBtn18.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn18.setText("=");
jBtn18.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn18ActionPerformed(evt);
    }
});

jBtn11.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn11.setText("+");
jBtn11.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jBtn11ActionPerformed(evt);
    }
});

jBtn17.setFont(new java.awt.Font("Tahoma", 0, 24)); // NOI18N
jBtn17.setText("c");
```

```
    jBtn17.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jBtn17ActionPerformed(evt);
        }
    });


// Variables declaration - do not modify
private javax.swing.JButton jBtn1;
private javax.swing.JButton jBtn10;
private javax.swing.JButton jBtn11;
private javax.swing.JButton jBtn12;
private javax.swing.JButton jBtn13;
private javax.swing.JButton jBtn14;
private javax.swing.JButton jBtn15;
private javax.swing.JButton jBtn16;
private javax.swing.JButton jBtn17;
private javax.swing.JButton jBtn18;
private javax.swing.JButton jBtn2;
private javax.swing.JButton jBtn3;
private javax.swing.JButton jBtn4;
private javax.swing.JButton jBtn5;
private javax.swing.JButton jBtn6;
private javax.swing.JButton jBtn7;
private javax.swing.JButton jBtn8;
private javax.swing.JButton jBtn9;
private javax.swing.JTextField jtxtDisplay; }
```

Output

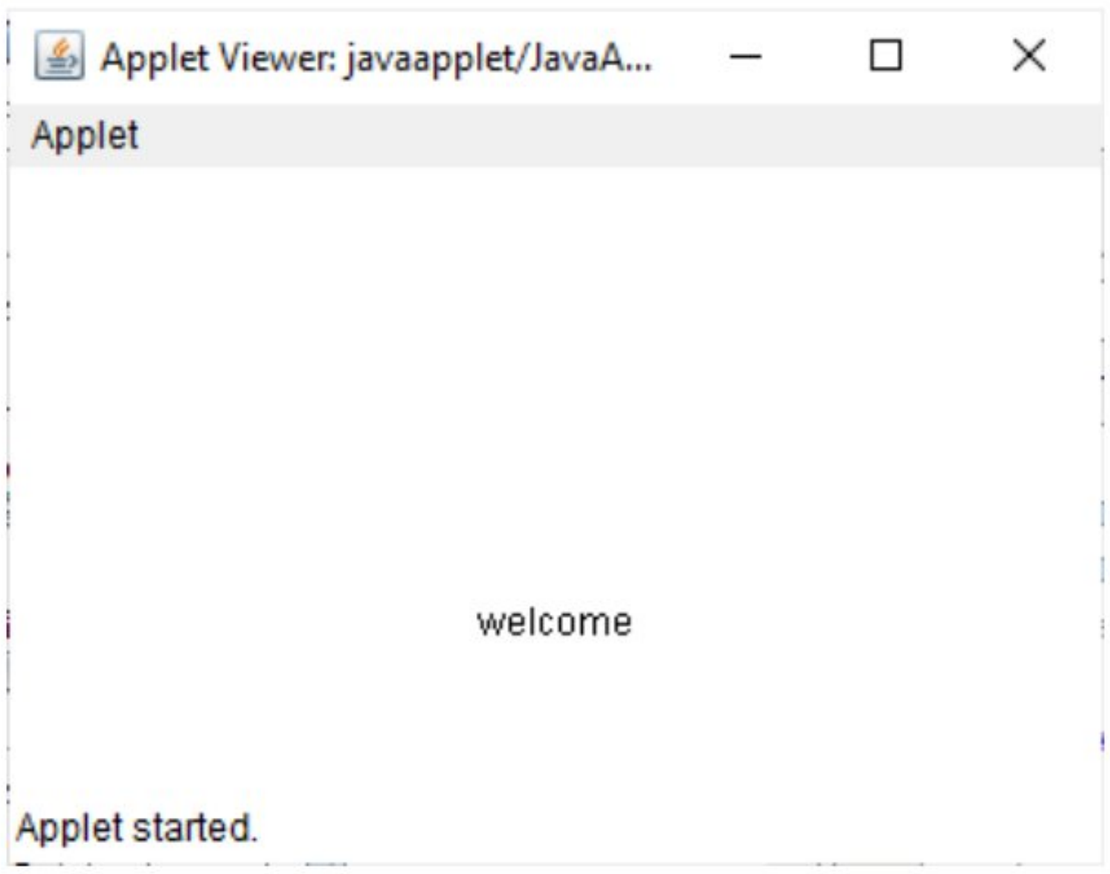


Topic 3

Applet

```
package javaapplet;


/**
 *
 * @author user
 */


 import java.awt.Graphics;
 public class JavaApplet extends java.applet.Applet {


     public void paint(Graphics g){
    g.drawString("welcome", 150, 150);
}
}
```

Output



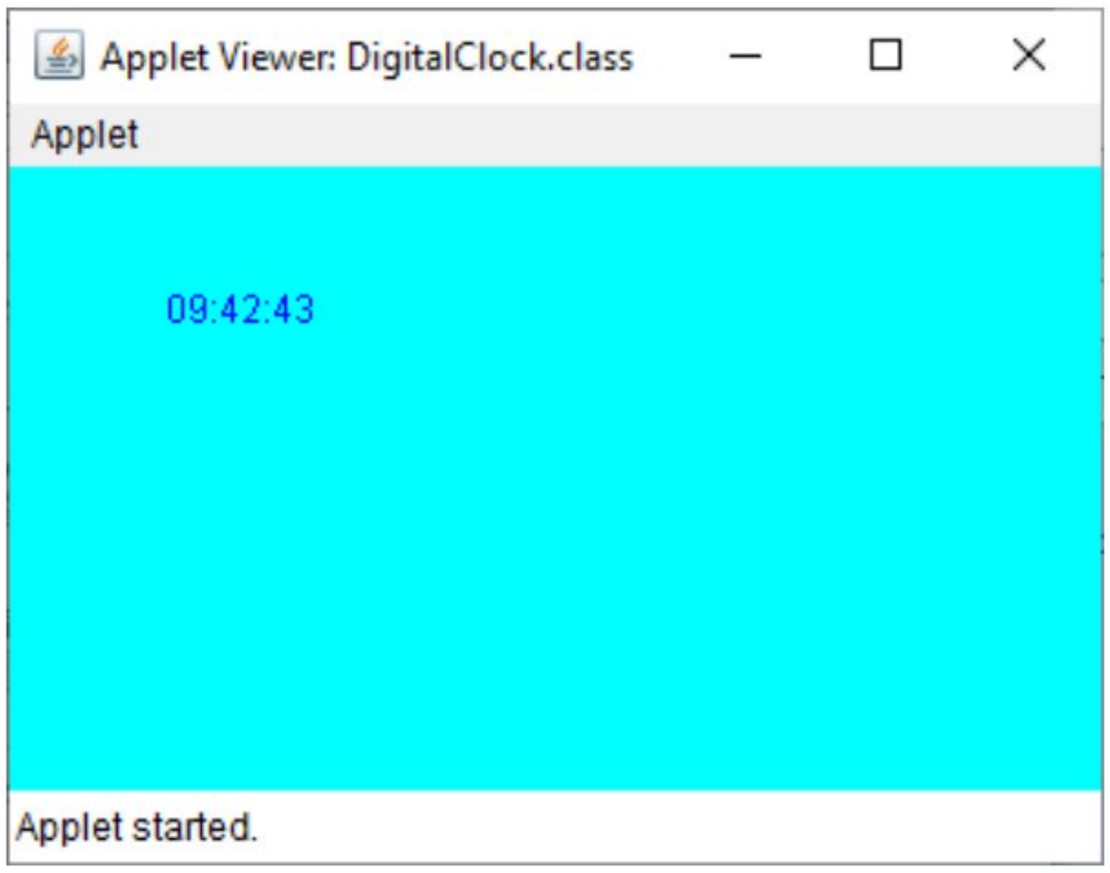
Topic 4

Digital Clock

```
import java.applet.*;

import java.awt.*;

import java.util.*;

import java.text.*;

public class DigitalClock extends Applet implements Runnable{


 Thread t = null;

int hours=0, minutes=0, seconds=0;

String timeString = "";


public void init() {

  setBackground( Color.cyan);

}


public void start() {

    t = new Thread( this );

    t.start();

}



public void run() {

  try {

    while (true) {
```

```
Calendar cal = Calendar.getInstance();
hours = cal.get( Calendar.HOUR_OF_DAY );
if ( hours > 12 ) hours -= 12;
minutes = cal.get( Calendar.MINUTE );
seconds = cal.get( Calendar.SECOND );

SimpleDateFormat formatter = new SimpleDateFormat("hh:mm:ss");
Date date = cal.getTime();
timeString = formatter.format( date );

        repaint();
        t.sleep( 10000 );  // interval given in milliseconds
      }
    }
    catch (Exception e) { }
}

public void paint( Graphics g ) {
    g.setColor( Color.blue );
    g.drawString( timeString, 50, 50 );
  }
}
```

Output



Topic 5

Integer Division :

```
private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {


 }
 private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
   int num1=Integer.parseInt(jTextField1.getText());
  int num2=Integer.parseInt(jTextField2.getText());
  float result=(float)num1/num2;
  jLabel3.setText(" "+result );


}


/**
 * @param args the command line arguments
 */
public static void main(String args[]) {
   /* 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 ex) {
java.util.logging.Logger.getLogger(MainFrame2.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
} catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(MainFrame2.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
} catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(MainFrame2.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(MainFrame2.class.getName()).log(java.util.logging.Level.SEVE
RE, null, ex);
}
//</editor-fold>

/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new MainFrame2().setVisible(true);
    }
});    }
```

```
    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    // End of variables declaration
}
```

Output