

# Temperature Converter



## **Stamford University Bangladesh** **Project Report**

**Course Code: CSI-233**

**Course Title: Advance Programming Sessional**

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## **ABSTRACT**

In our daily life, we used temperature for different reasons. There are also different units to measure temperature. We need different units of temperature for different works.

A temperature converter is an application which is used to covert temperature in different units. A user can insert the current temperature and convert it as desired unit.

This document will discuss each of the underlying technologies to create and implement Temperature application.

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# 1.0 Introduction

A temperature Convert application is useful for various types of users. It helps to convert temperature in any unit. In various reason we need to convert temperature. Students, researchers and other people use temperature for mathematical purposes. In thermodynamics temperature is most common thing to use in every equation. So, converting temperature in different unit by hand is very time consuming and irritating.

In this project a user can convert temperature in any unit. It will help to save users time and do their work easily. It is easy to use and very user friendly. The application architecture is easy to handle and understandable. So, it will help the user to get the conversion of temperature.

## **2.0 OVERALL DESCRIPTION**

Temperature converter application works dynamically. It has some features. It's a GUI based java application.

### **2.1 Main Features:**

The main Features of the application are:

#### **Input data:**

A user can insert data that was value of temperature which user want to convert. It inserts into a text field.

#### **Choose Method:**

This method is to choose which unit to convert the inserted value of temperature.

## **Convert:**

This field is to convert the value of temperature.

## **Result:**

This field is to show the conversion of the given input value. Its shows the output unit of the temperature.

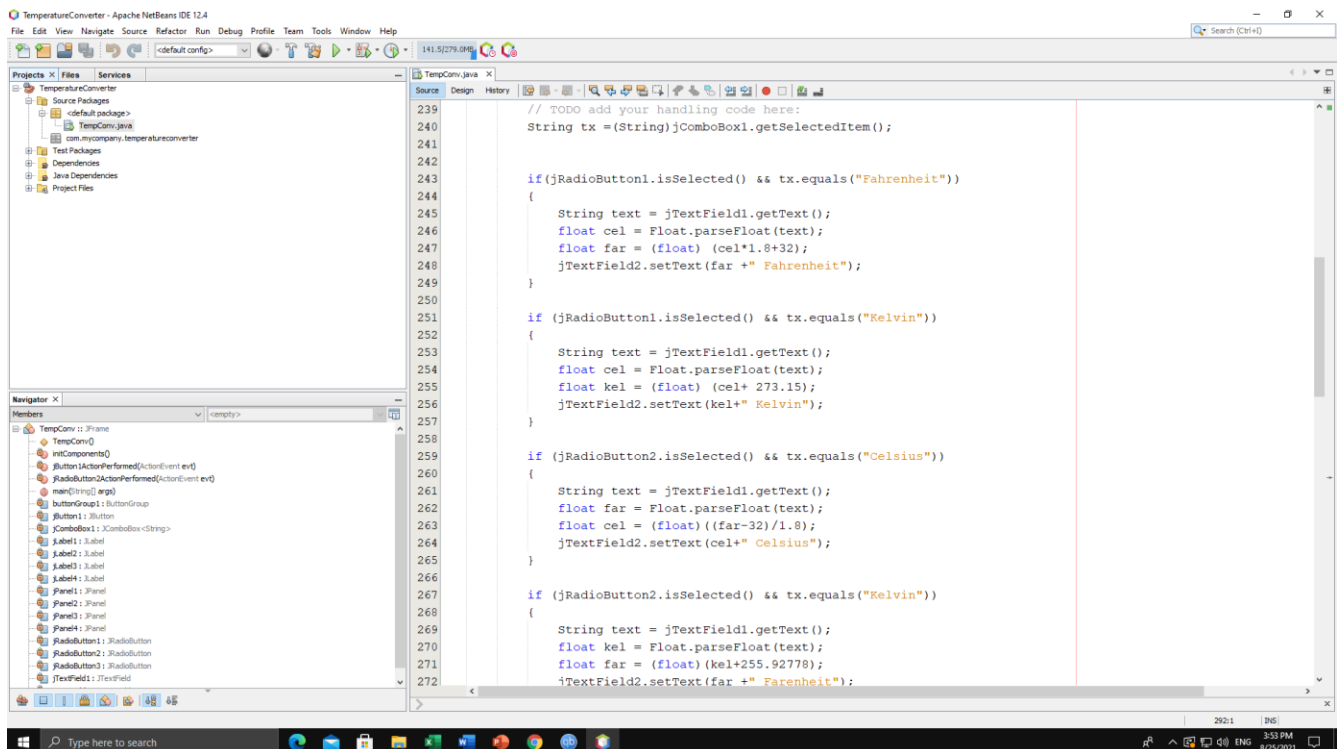
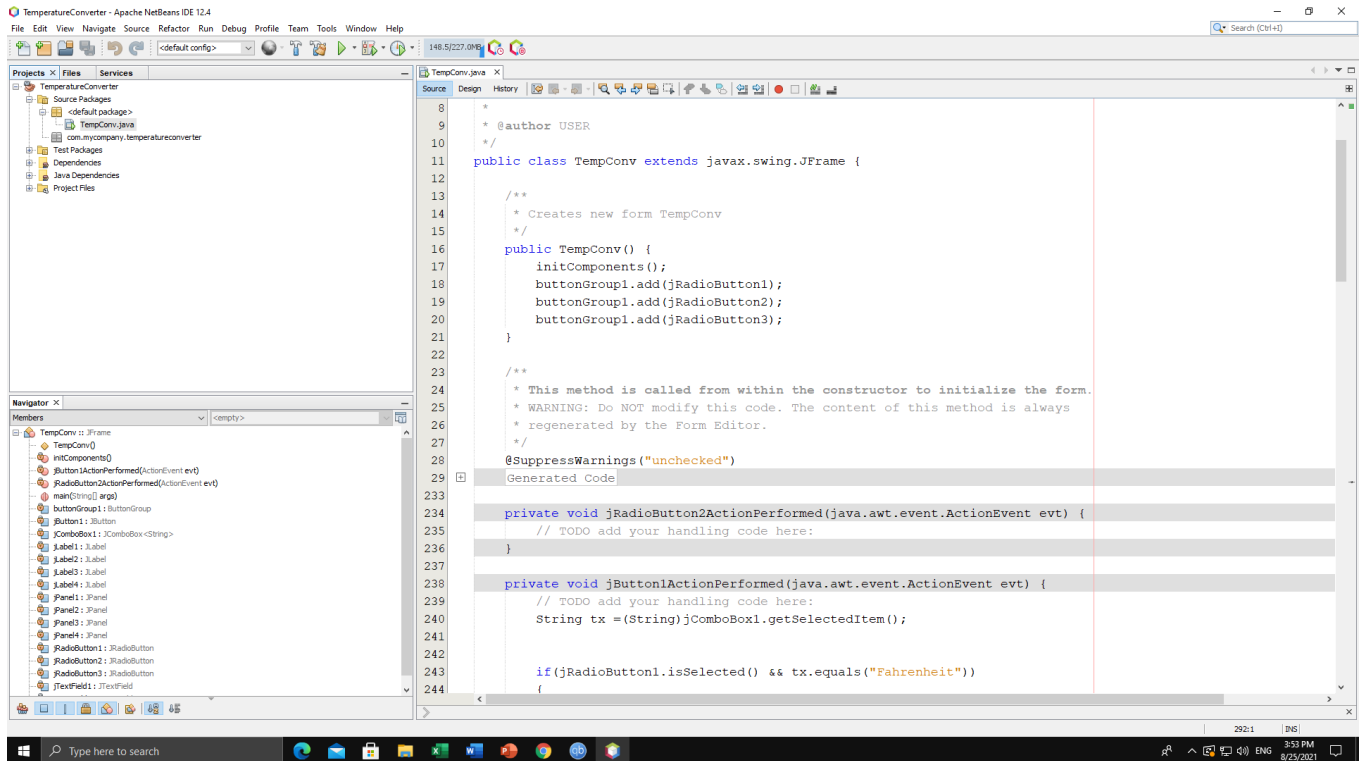
## **2.2 Advantages:**

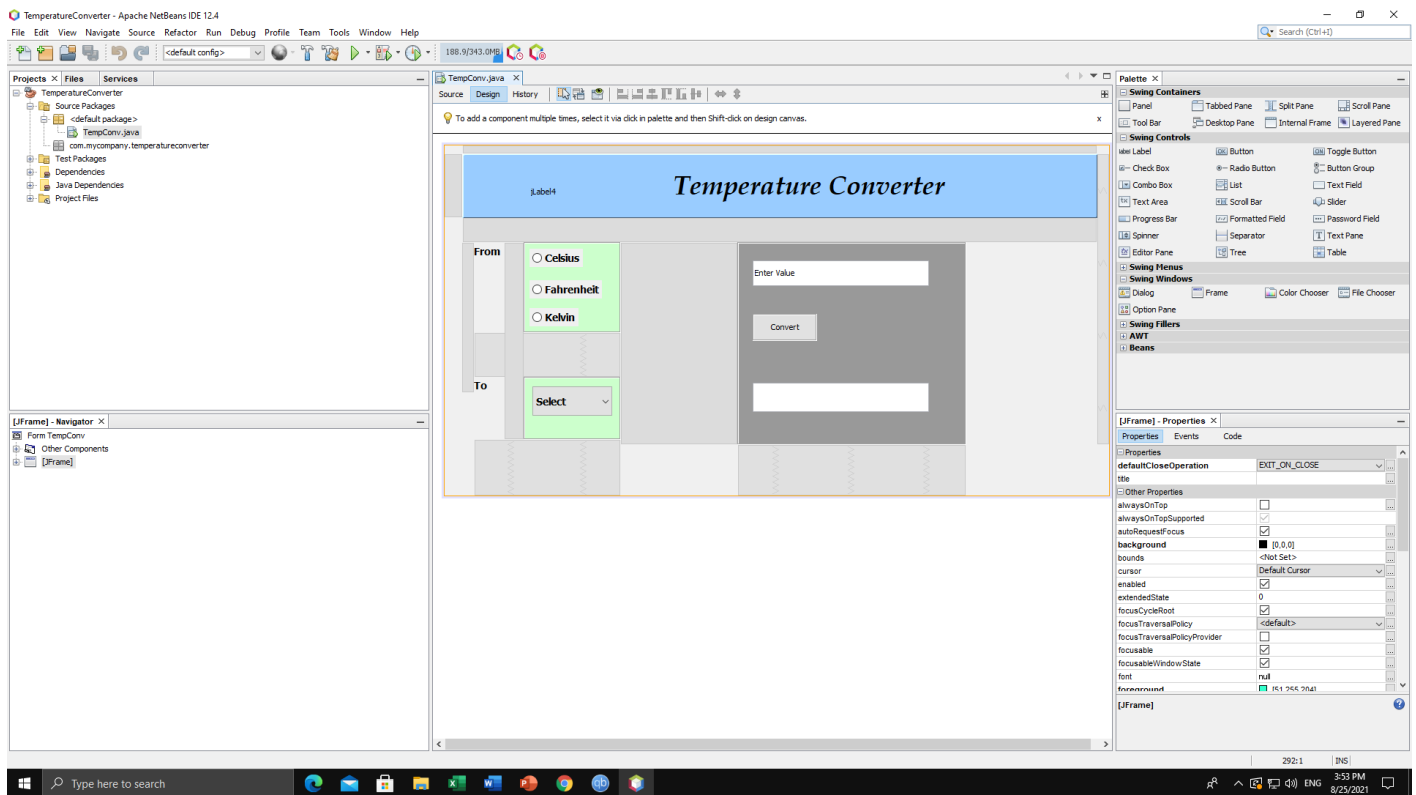
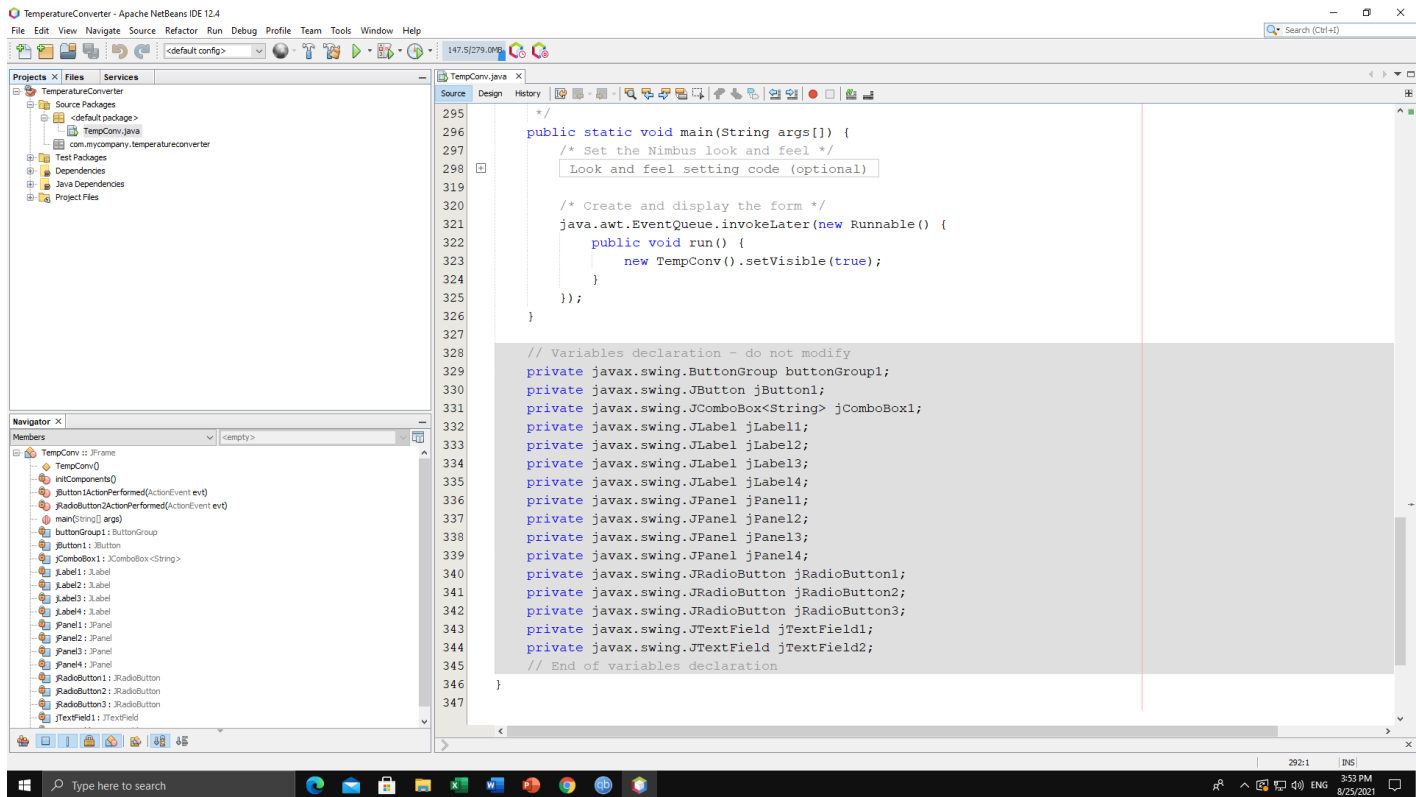
- User Friendly
- Easy to use and understandable
- Less Complexity
- Take less memory

## **2.3 Disadvantages:**

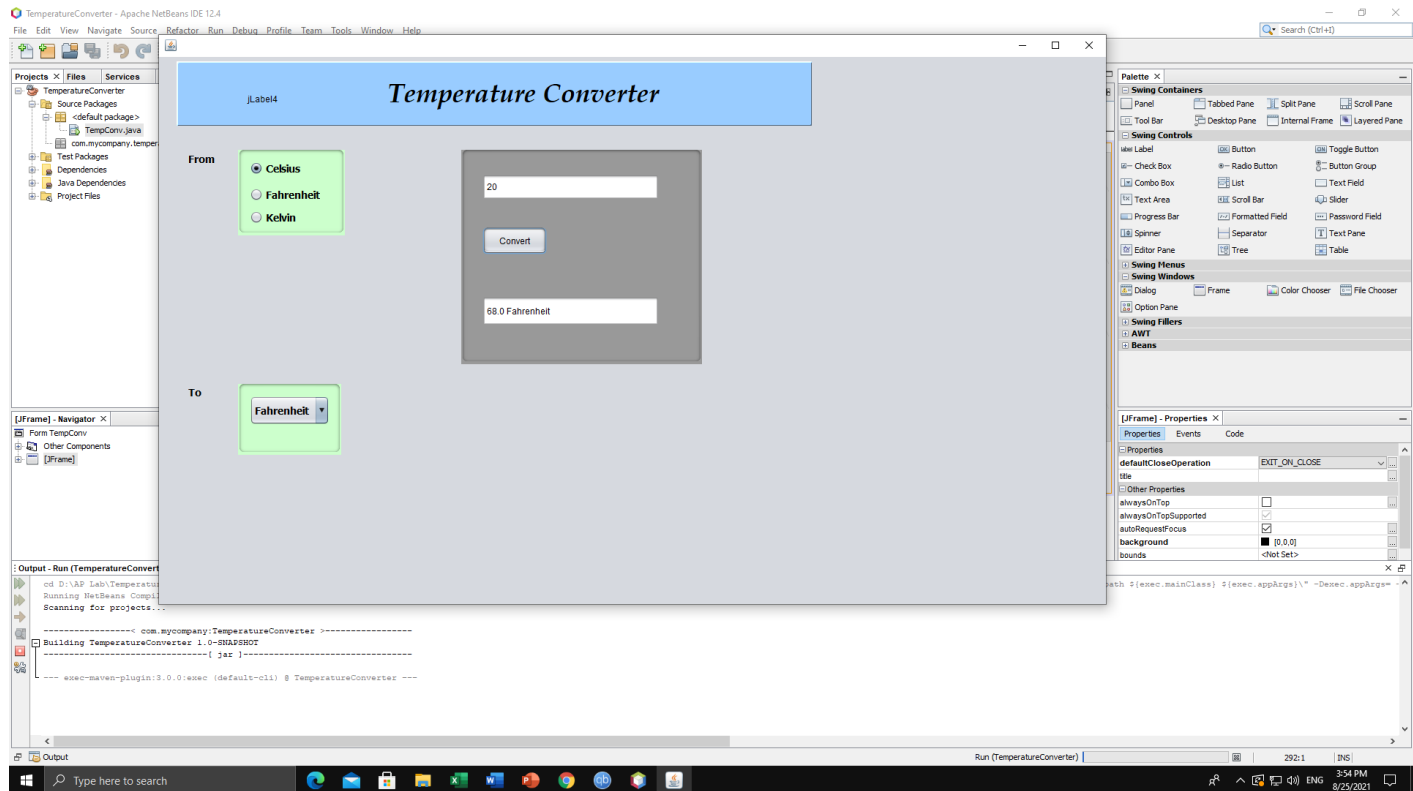
- Can convert only in Celsius, Fahrenheit and kelvin
- Cannot convert in Rankine

# 3.0 SNAPSHOT OF APPLICATION:









## 4.0 INTRIGATION OF OOP CONCEPT:

We have a main class tempconv() and in this class there are many variables that indicate various field of the application such that buttons, labels ,fields etc. We have also included try catch function to handle the exception.

For each variable we have implemented methods, constructors, parameters. We use Java sewing library that inherited by the main class. That's how we implemented OOP concept in our project.

## 5.0 PROJECT SOURCE CODE:

```
public class TempConv extends javax.swing.JFrame {

    /**
     * Creates new form TempConv
     */
    public TempConv() {
        initComponents();
        buttonGroup1.add(jRadioButton1);
        buttonGroup1.add(jRadioButton2);
        buttonGroup1.add(jRadioButton3);
    }

    /**
     * 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() {
```

```
    buttonGroup1 = new javax.swing.ButtonGroup();
```

```
    jPanel1 = new javax.swing.JPanel();
```

```
    jLabel3 = new javax.swing.JLabel();
```

```
    jLabel4 = new javax.swing.JLabel();
```

```
    jPanel2 = new javax.swing.JPanel();
```

```
    jButton1 = new javax.swing.JButton();
```

```
    jButton2 = new javax.swing.JButton();
```

```
    jButton3 = new javax.swing.JButton();
```

```
    jPanel3 = new javax.swing.JPanel();
```

```
    jTextField1 = new javax.swing.JTextField();
```

```
    jPanel4 = new javax.swing.JPanel();
```

```
    jTextField2 = new javax.swing.JTextField();
```

```
    jTextField3 = new javax.swing.JTextField();
```

```
    jButton4 = new javax.swing.JButton();
```

```
    jLabel1 = new javax.swing.JLabel();
```

```
    jLabel2 = new javax.swing.JLabel();
```

```
setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
```

```

setBackground(new java.awt.Color(0, 0, 0));
setForeground(new java.awt.Color(51, 255, 204));

jPanel1.setBackground(new java.awt.Color(153, 204, 255));
jPanel1.setBorder(new
javax.swing.border.SoftBevelBorder(javax.swing.border.BevelBorder.RAISE
D));
jPanel1.setForeground(new java.awt.Color(255, 51, 51));

jLabel3.setFont(new java.awt.Font("Book Antiqua", 3, 36)); // NOI18N
jLabel3.setText("Temperature Converter");

jLabel4.setIcon(new javax.swing.ImageIcon("D:\\download.png")); //
NOI18N
jLabel4.setText("jLabel4");

javax.swing.GroupLayout jPanel1Layout = new
javax.swing.GroupLayout(jPanel1);
jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

```

DING)

```
.addGroup(javax.swing.GroupLayout.Alignment.TRAILING,  
jPanel1Layout.createSequentialGroup()  
    .addGap(91, 91, 91)  
    .addComponent(jLabel4,  
javax.swing.GroupLayout.PREFERRED_SIZE,          177,  
javax.swing.GroupLayout.PREFERRED_SIZE)  
    .addGap(18, 18, 18)  
    .addComponent(jLabel3,  
javax.swing.GroupLayout.PREFERRED_SIZE,          432,  
javax.swing.GroupLayout.PREFERRED_SIZE)  
    .addContainerGap(144, Short.MAX_VALUE))  
);  
jPanel1Layout.setVerticalGroup(
```

```
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)  
DING)
```

```
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)  
    .addComponent(jLabel4, javax.swing.GroupLayout.DEFAULT_SIZE,  
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```

        .addComponent(jLabel3,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
    );

jPanel2.setBackground(new java.awt.Color(204, 255, 204));
jPanel2.setBorder(javax.swing.BorderFactory.createTitledBorder(null,
"",
    javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,
    javax.swing.border.TitledBorder.DEFAULT_POSITION,
    new
    java.awt.Font("Tahoma", 0, 11), new java.awt.Color(0, 255, 51))); // NOI18N

jRadioButton1.setFont(new java.awt.Font("Tahoma", 1, 14)); // NOI18N
jRadioButton1.setText("Celsius");

jRadioButton2.setFont(new java.awt.Font("Tahoma", 1, 14)); // NOI18N
jRadioButton2.setText("Fahrenheit");
jRadioButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jRadioButton2ActionPerformed(evt);
    }
});

```

```
jRadioButton3.setFont(new java.awt.Font("Tahoma", 1, 14)); // NOI18N
jRadioButton3.setText("Kelvin");
```

```

    javax.swing.GroupLayout      jPanel2Layout      =      new
javax.swing.GroupLayout(jPanel2);

    jPanel2.setLayout(jPanel2Layout);
    jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel2Layout.createSequentialGroup()
            .addContainerGap()
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addComponent(jRadioButton1)
                .addComponent(jRadioButton2)
                .addComponent(jRadioButton3))
            .addGap(24, 24, Short.MAX_VALUE))
        .addContainerGap());
    jPanel2Layout.setVerticalGroup(

```

```
jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
    .addGroup(jPanel2Layout.createSequentialGroup()
```

```
        .addContainerGap()
```

```
        .addComponent(jRadioButton1)
```

```
        .addGap(18, 18, 18)
```

```
        .addComponent(jRadioButton2)
```

```
    .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,  
13, Short.MAX_VALUE)
```

```
        .addComponent(jRadioButton3)
```

```
        .addContainerGap())
```

```
);
```

```
jPanel3.setBackground(new java.awt.Color(204, 255, 204));
```

```
jPanel3.setBorder(javax.swing.BorderFactory.createTitledBorder(null,  
"", javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,  
javax.swing.border.TitledBorder.DEFAULT_POSITION, new  
java.awt.Font("Tahoma", 0, 11), new java.awt.Color(102, 255, 153))); // NOI18N
```

```
jComboBox1.setFont(new java.awt.Font("Tahoma", 1, 14)); // NOI18N
```



```
jComboBox1.setModel(new  
javax.swing.DefaultComboBoxModel<>(new String[] { "Select", "Celsius",  
"Fahrenheit", "Kelvin" }));
```

```
javax.swing.GroupLayout jPanel3Layout = new  
javax.swing.GroupLayout(jPanel3);  
jPanel3.setLayout(jPanel3Layout);  
jPanel3Layout.setHorizontalGroup(
```

```
jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
    .addGroup(jPanel3Layout.createSequentialGroup()  
        .addContainerGap()  
        .addComponent(jComboBox1, 0, 109, Short.MAX_VALUE)  
        .addContainerGap()  
    );
```

```
jPanel3Layout.setVerticalGroup(
```

```
jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
    .addGroup(jPanel3Layout.createSequentialGroup()  
        .addContainerGap()
```

```
        .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,           40,
javax.swing.GroupLayout.PREFERRED_SIZE)
        .addContainerGap(31, Short.MAX_VALUE))
    );
```

```
jPanel4.setBackground(new java.awt.Color(153, 153, 153));
jPanel4.setBorder(javax.swing.BorderFactory.createTitledBorder(null,
"",
    javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,
    javax.swing.border.TitledBorder.DEFAULT_POSITION,
    new
    java.awt.Font("Tahoma", 0, 11), new java.awt.Color(51, 255, 51))); //
NOI18N
```

```
jTextField1.setText("Enter Value");
```

```
jButton1.setText("Convert");
jButton1.setBorder(javax.swing.BorderFactory.createTitledBorder(""));
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
```

```

        javax.swing.GroupLayout jPanel4Layout = new
javax.swing.GroupLayout(jPanel4);
        jPanel4.setLayout(jPanel4Layout);
        jPanel4Layout.setHorizontalGroup(

jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

            .addGroup(jPanel4Layout.createSequentialGroup()

                .addGap(19, 19, 19)

                .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

                    .addGroup(jPanel4Layout.createSequentialGroup()

                        .addComponent(jTextField1,
javax.swing.GroupLayout.DEFAULT_SIZE, 241, Short.MAX_VALUE)

                        .addComponent(jTextField2))

                    .addComponent(jButton1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

```

88,

```

        .addContainerGap(49, Short.MAX_VALUE))
    );
    JPanel4Layout.setVerticalGroup(

jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel4Layout.createSequentialGroup()

            .addGap(23, 23, 23)

            .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE,          35,
javax.swing.GroupLayout.PREFERRED_SIZE)

            .addGap(38, 38, 38)

            .addComponent(jButton1,
javax.swing.GroupLayout.PREFERRED_SIZE,          37,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
57, Short.MAX_VALUE)

        .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE,          40,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addGap(43, 43, 43))

```

```
);
```

```
jLabel1.setFont(new java.awt.Font("Tahoma", 1, 14)); // NOI18N
```

```
jLabel1.setText("From");
```

```
jLabel2.setFont(new java.awt.Font("Tahoma", 1, 14)); // NOI18N
```

```
jLabel2.setText("To");
```

```
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(24, 24, 24)
```

```
    .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
        .addComponent(jPanel1,
```

```
javax.swing.GroupLayout.PREFERRED_SIZE,
```

```
javax.swing.GroupLayout.DEFAULT_SIZE,
```

```

javax.swing.GroupLayout.PREFERRED_SIZE)
        .addGroup(layout.createSequentialGroup()
            .addGap(16, 16, 16)

        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
            .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE,           34,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE,           42,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(26, 26, 26)

        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
            .addComponent(jPanel3,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addComponent(jPanel2,
javax.swing.GroupLayout.PREFERRED_SIZE,

```

```

javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
        .addGap(159, 159, 159)
        .addComponent(jPanel4,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)))
        .addContainerGap(16, Short.MAX_VALUE))
);
layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(33, 33, 33)

        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)

```

```
.addGroup(layout.createSequentialGroup())
```

```
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.  
LEADING)
```

```
        .addComponent(jPanel2,  
javax.swing.GroupLayout.PREFERRED_SIZE,  
javax.swing.GroupLayout.DEFAULT_SIZE,  
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
        .addComponent(jLabel1,  
javax.swing.GroupLayout.PREFERRED_SIZE,                25,  
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,  
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.  
LEADING)
```

```
        .addComponent(jPanel3,  
javax.swing.GroupLayout.PREFERRED_SIZE,  
javax.swing.GroupLayout.DEFAULT_SIZE,  
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
        .addComponent(jLabel2,
```



```

javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        .addGroup(layout.createSequentialGroup()
            .addComponent(jPanel4,
                javax.swing.GroupLayout.PREFERRED_SIZE,
                javax.swing.GroupLayout.DEFAULT_SIZE,
                javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap(69, Short.MAX_VALUE))))
    );

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

```

```

private void jButton2ActionPerformed(java.awt.event.ActionEvent
    evt) {
    // TODO add your handling code here:
}

```

```

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

```

```
String tx =(String)jComboBox1.getSelectedItem();
```

```
if(jRadioButton1.isSelected() && tx.equals("Fahrenheit"))
```

```
{
```

```
    String text = jTextField1.getText();
```

```
    float cel = Float.parseFloat(text);
```

```
    float far = (float) (cel*1.8+32);
```

```
    jTextField2.setText(far +" Fahrenheit");
```

```
}
```

```
if (jRadioButton1.isSelected() && tx.equals("Kelvin"))
```

```
{
```

```
    String text = jTextField1.getText();
```

```
    float cel = Float.parseFloat(text);
```

```
    float kel = (float) (cel+ 273.15);
```

```
    jTextField2.setText(kel+" Kelvin");
```

```
}
```

```
if (jRadioButton2.isSelected() && tx.equals("Celsius"))
```

```
{
```

```
    String text = jTextField1.getText();
```

```
float far = Float.parseFloat(text);  
float cel = (float)((far-32)/1.8);  
jTextField2.setText(cel+" Celsius");  
}
```

```
if (jRadioButton2.isSelected() && tx.equals("Kelvin"))  
{  
    String text = jTextField1.getText();  
    float kel = Float.parseFloat(text);  
    float far = (float)(kel+255.92778);  
    jTextField2.setText(far +" Farenheit");  
}
```

```
if (jRadioButton3.isSelected() && tx.equals("Celsius"))  
{  
    String text = jTextField1.getText();  
    float cel = Float.parseFloat(text);  
    float kel = (float)(cel-272.15);  
    jTextField2.setText(kel +" celcius");  
}
```

```
if (jRadioButton3.isSelected() && tx.equals("Fahrenheit"))
```

```

    {
        String text = jTextField1.getText();
        float far = Float.parseFloat(text);
        float kel = (float)(far-457.87);
        jTextField2.setText(kel +" Farhenheit");
    }

}

/**
 * @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. */
    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(TempConv.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(TempConv.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(TempConv.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(TempConv.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
    }
}
//</editor-fold>

```

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

```
// Variables declaration - do not modify  
private javax.swing.ButtonGroup buttonGroup1;  
private javax.swing.JButton jButton1;  
private javax.swing.JComboBox<String> jComboBox1;  
private javax.swing.JLabel jLabel1;  
private javax.swing.JLabel jLabel2;  
private javax.swing.JLabel jLabel3;  
private javax.swing.JLabel jLabel4;  
private javax.swing.JPanel jPanel1;  
private javax.swing.JPanel jPanel2;  
private javax.swing.JPanel jPanel3;  
private javax.swing.JPanel jPanel4;  
private javax.swing.JRadioButton jRadioButton1;
```

```
private javax.swing.JRadioButton jRadioButton2;  
private javax.swing.JRadioButton jRadioButton3;  
private javax.swing.JTextField jTextField1;  
private javax.swing.JTextField jTextField2;  
// End of variables declaration  
}
```

## 6.0 CONCLUSION:

In this report we discuss the implementations of various field in our project and also shows different perspectives.

### 6.1 Limitation's and Future work

- Fix bugs in the source code
- Add new features
- Can convert in Rankine
- Eye catching user interface