Reflection log

Class Definition:

- The `MetricConverter` class is defined to create a simple graphical user interface (GUI) for converting metric measurements.

```
public class MetricConverter {
```

Main Method:

- The `main` method serves as the entry point of the application. It uses `EventQueue.invokeLater` to ensure that the GUI is created on the Event Dispatch Thread, which is a best practice in Java Swing.

```
public static void main(String[] args) {
    EventQueue.invokeLater(new Runnable() {
        public void run() {
            try {
                MetricConverter window = new MetricConverter();
                window.frame.setVisible(true);
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    });
}

/**
 * Create the application.
 */
public MetricConverter() {
    initialize();
}
```

Constructor:

- The constructor (`MetricConverter()`) initializes the GUI by calling the `initialize()` method.

```
public MetricConverter() {
    initialize();
}
```

Initialize Method:

- This method sets up the JFrame, JPanel, JComboBox, and JLabel that make up the user interface.

```
frame = new JFrame();
frame.setBounds(100, 100, 277, 397);
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.getContentPane().setLayout(null);

JPanel panel = new JPanel();
panel.setBackground(Color.GRAY);
panel.setBounds(10, 11, 241, 336);
frame.getContentPane().add(panel);
panel.setLayout(null);

JLabel Formulas = new JLabel("1 Inch = 2.54 Centimeters");
Formulas.setBounds(54, 113, 159, 47);
panel.add(Formulas);

JComboBox Conversions = new JComboBox(ConList);
Conversions.setOpaque(false);
Conversions.setLightWeightPopupEnabled(false);
Conversions.setForeground(Color.BLACK);
Conversions.setFont(new Font("Verdana", Font.BOLD, 10));
Conversions.setBackground(Color.WHITE);
Conversions.setCursor(Cursor.getPredefinedCursor(Cursor.HAND_CURSOR));
Conversions.setBounds(44, 80, 168, 22);
panel.add(Conversions);
Conversions.addActionListener(new ActionListener() {
```

Components:

- **JFrame:** The main window for the application.
- **JPanel:** A container that holds the other components, set with a gray background.
- **JLabel (`Formulas`):** Displays the conversion formula based on user selection.
- **JComboBox (`Conversions`):** Allows the user to select a conversion type from a dropdown list.

ComboBox ActionListener:

```
JComboBox Conversions = new JComboBox(ConList);
Conversions.setOpaque(false);
Conversions.setLightWeightPopupEnabled(false);
Conversions.setForeground(Color.BLACK);
Conversions.setFont(new Font("Verdana", Font.BOLD, 10));
Conversions.setBackground(Color.WHITE);
Conversions.setCursor(Cursor.getPredefinedCursor(Cursor.HAND_CURSOR));
Conversions.setBounds(44, 80, 168, 22);
panel.add(Conversions);
Conversions.addActionListener(new ActionListener() {
```

- An `ActionListener` is added to the JComboBox to respond to user selections.
- When a selection is made, the event listener retrieves the selected item and updates the `Formulas` JLabel with the corresponding conversion formula.
- The `if-else` statements check which conversion was selected and update the label text accordingly.

```
  public void actionPerformed(ActionEvent event)
  {
      JComboBox comboBox = (JComboBox)event.getSource();

      String Conversions = (String)comboBox.getSelectedItem();
         if (Conversions == "Inches to Centrimeters") {
             Formulas.setText("1 Inch = 2.54 Centimeters");
         } else if (Conversions.equals("Feet to Meters")) {
             Formulas.setText("1 Foot = 0.3048 Meters");
         } else if (Conversions.equals("Gallons to Liters")) {
             Formulas.setText("1 Gallon = 4.5461 Liters");
         } else if (Conversions.equals("Pounds to Kilograms")) {
             Formulas.setText("1 Pound = 0.4536 Kilograms");
         }
  }
);
```

Conversions Logic:

- The conversions are hardcoded within the `actionPerformed` method. Each conversion type updates the label with the correct formula when selected.

```
public void actionPerformed(ActionEvent event)
```