Reflection on Code Metric Conversion

Working on the Metric Conversion application revealed a few key areas where errors crept in and needed fixing. Here's a breakdown of the main issues I encountered and how they were addressed.

1. Incorrect Conversion Formula

At first, the conversion from feet to meters was producing incorrect results. After reviewing the formula, I realized I had mistakenly used the wrong conversion factor. The correct formula for converting feet to meters is 1 foot = 0.3048 meters but I had implemented an incorrect factor.

Error Example:

```
// Incorrect formula for feet to meters
resultLabel.setText("1 foot = 0.33 meters"); // Wrong conversion factor
// Correct formula:
resultLabel.setText("1 foot = 0.3048 meters");
```

Fixing this formula ensured that users received the correct result for their conversions.

2. Missing ComboBox Selection

Another issue I had encountered was that users could click the conversion button without selecting a conversion type from the dropdown. This caused the program to crash because it was trying to perform a calculation without knowing which conversion to use.

Error Example:

```
// No validation for ComboBox selection
String conversionType = (String) comboBox.getSelectedItem();
if (conversionType == null) {
    JOptionPane.showMessageDialog(null, "Please select a conversion type.");
    return;
}
```

Adding this validation ensured that users received a prompt to select a conversion type preventing the program from crashing.

3. UI Not Updating Properly

After the first conversion was performed the label displaying the result didn't update for subsequent conversions. This issue was caused by not resetting the label correctly before each new calculation.

Error Example:

// Label not resetting for new calculation
resultLabel.setText(""); // Clear the label before showing new result

By resetting the label before each conversion I ensured that users always saw the correct result for their selected conversion type.