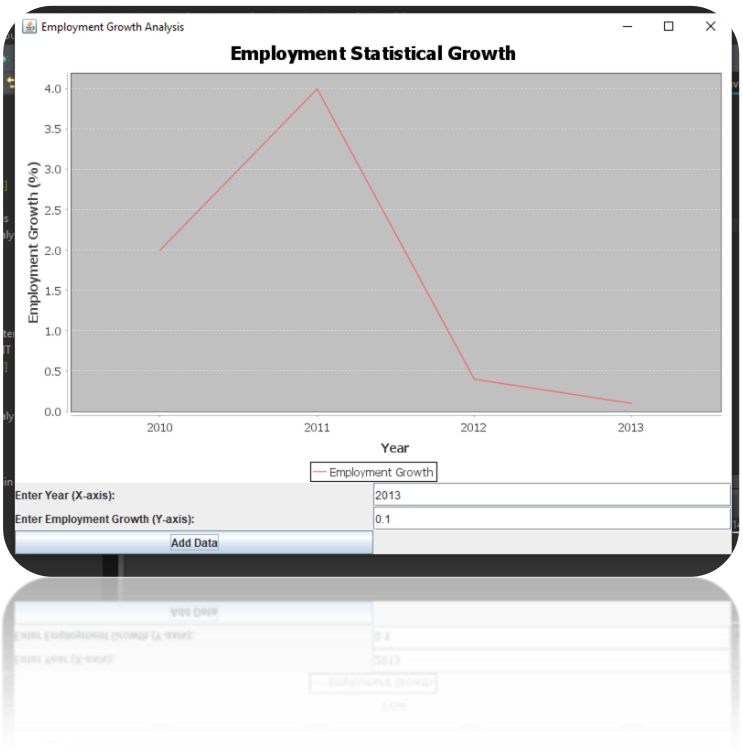
Java Swing application

that analyzes statistical data and represents a graph based on user input for the X and Y axes (in this case, employment statistical growth for a country)

you can use Java Swing for the user interface and JFreeChart for generating the graph.

Github link:
https://github.com/himanshuSinghworkPort/java_swing_application_employement_growth_analysis



Project name:Java_GUI_UI_Stats_EMPLOYEMENT

Package name:stats_graph_x_y

Class name: **EmploymentGrowthAnalysis**

Open eclipse>> create MAVEN PROJECT

For maven projects there is pom.xml file

Edit it and add>>

Set up Maven (optional but recommended):

If you're using Maven to manage dependencies, add JFreeChart to your pom.xml:

```
<dependency>
   <groupId>org.jfree</groupId>
   <artifactId>jfreechart</artifactId>
   <version>1.5.3</version>
</dependency>
```

Or add jar files manually:

Add JFreeChart Manually

1. Download JFreeChart from SourceForge JFreeChart.
2. Extract the ZIP file and locate the jfreechart-x.x.x.jar and jcommon-x.x.x.jar files.
3. In Eclipse, right-click on your project and select **Build Path** -> **Configure Build Path**.
4. Click on the **Libraries** tab and then **Add External JARs**.
5. Select both the jfreechart and jcommon JAR files you downloaded.
6. Click **Apply** and **Close**.

Java source code:

```
import org.jfree.chart.ChartFactory;

import org.jfree.chart.ChartPanel;

import org.jfree.chart.JFreeChart;

import org.jfree.chart.plot.PlotOrientation;

import org.jfree.data.category.DefaultCategoryDataset;

import javax.swing.*;

import java.awt.*;
```

```
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;


public class EmploymentGrowthAnalysis extends JFrame
{
    private JTextField xField;
    private JTextField yField;
    private DefaultCategoryDataset dataset;

    public EmploymentGrowthAnalysis()
{
        setTitle("Employment Growth Analysis");
        setSize(800, 600);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLayout(new BorderLayout());

        // Input Panel
        JPanel inputPanel = new JPanel();
        inputPanel.setLayout(new GridLayout(3, 2));

        inputPanel.add(new JLabel("Enter Year (X-axis): "));
```

```
        xField = new JTextField();
        inputPanel.add(xField);

        inputPanel.add(new JLabel("Enter Employment Growth (Y-axis): "));
        yField = new JTextField();
        inputPanel.add(yField);

        JButton addButton = new JButton("Add Data");
        inputPanel.add(addButton);

        // Graph Panel
        dataset = new DefaultCategoryDataset();
        JFreeChart chart = ChartFactory.createLineChart(
                "Employment Statistical Growth",
                "Year",
                "Employment Growth (%)",
                dataset,
                PlotOrientation.VERTICAL,
                true, true, false);

        ChartPanel chartPanel = new ChartPanel(chart);
```

```
        add(chartPanel, BorderLayout.CENTER);
        add(inputPanel, BorderLayout.SOUTH);


        // Add Button Action Listener
        addButton.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                String year = xField.getText();
                String growth = yField.getText();


                if (!year.isEmpty() && !growth.isEmpty()) {
                    try {
                        double growthValue = Double.parseDouble(growth);
                        dataset.addValue(growthValue, "Employment Growth", year);
                    } catch (NumberFormatException ex) {
                        JOptionPane.showMessageDialog(null, "Please enter a valid
number for employment growth.");
                    }
                } else {
                    JOptionPane.showMessageDialog(null, "Please enter both Year and
Employment Growth.");
```

```
            }
        }
    });
  }

  public static void main(String[] args) {
    SwingUtilities.invokeLater(() -> {
        EmploymentGrowthAnalysis app = new EmploymentGrowthAnalysis();
        app.setVisible(true);
    });
  }
}
```

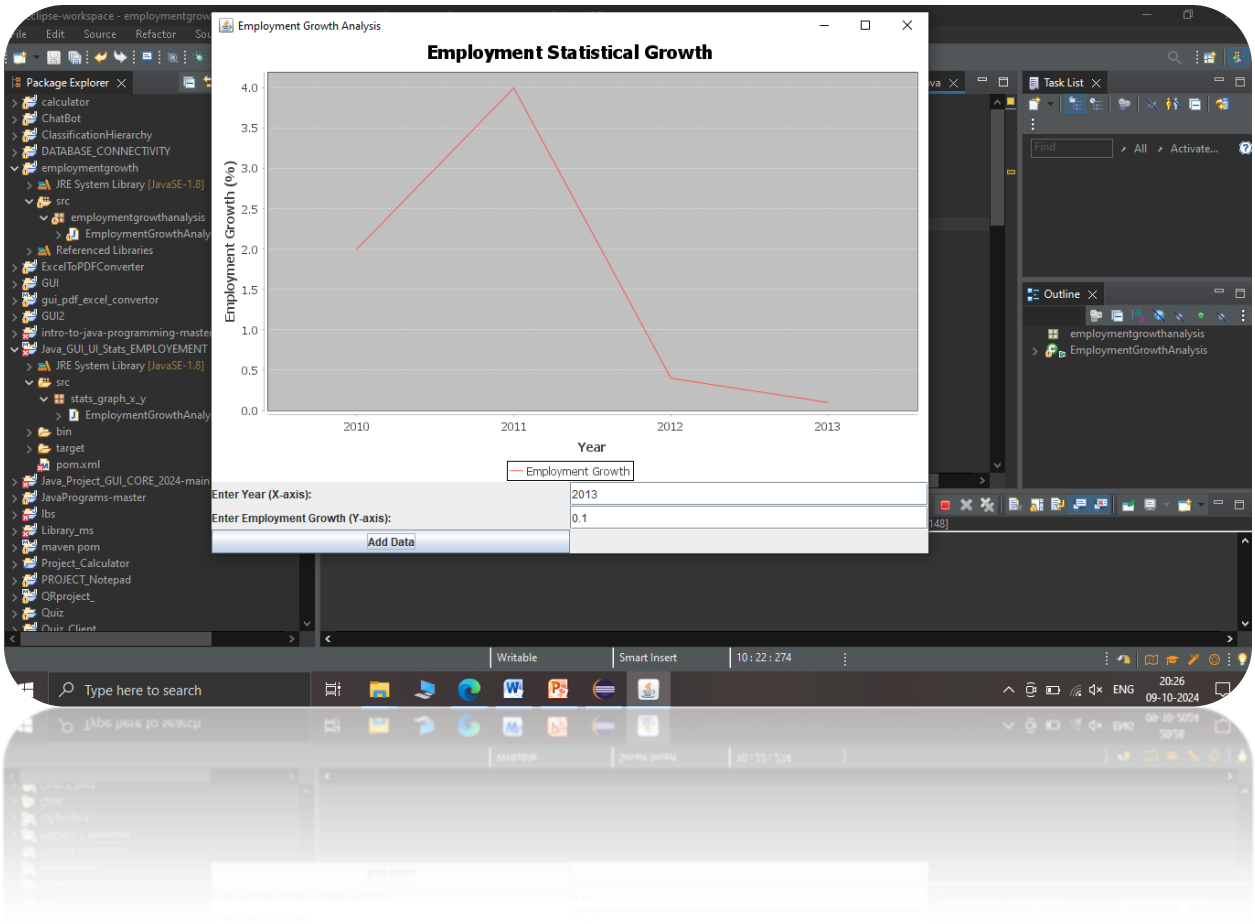
Explanation of Code:

1. **Libraries**:
   - We use JFreeChart to create and display a line chart.
2. **User Interface**:
   - A form with two fields: one for inputting the year (X-axis) and one for the employment growth percentage (Y-axis).
   - A "Add Data" button that allows users to submit the values and update the graph.
3. **Graph Generation**:
   - The JFreeChart library generates the line chart based on the values added to the dataset.
   - The dataset.addValue() method adds data to the chart dynamically when the user inputs values and clicks the button.

Steps to Run:

1. **Download the JFreeChart Library** if you are not using Maven, and add it to your classpath: JFreeChart download.
2. Compile and run the code. When the application starts, enter the year and employment growth rate, and press "Add Data" to plot the graph.

Ctrl+ Alt+ x


Employment Growth Analysis
Employment Statistical Growth
Employment Growth (%)
Year
Employment Growth
Enter Year (X-axis):
2013
Enter Employment Growth (Y-axis):
0.1
Add Data
Package Explorer
Task List
Outline
Writable
Smart Insert
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