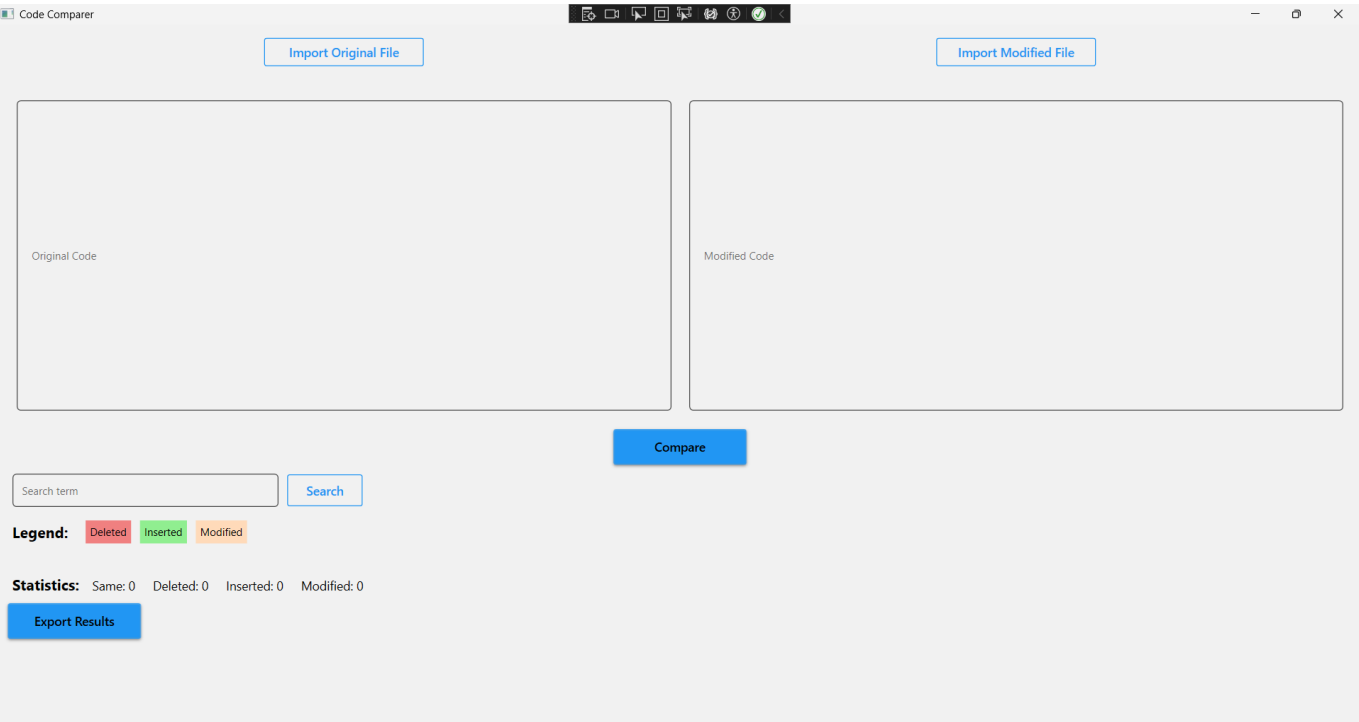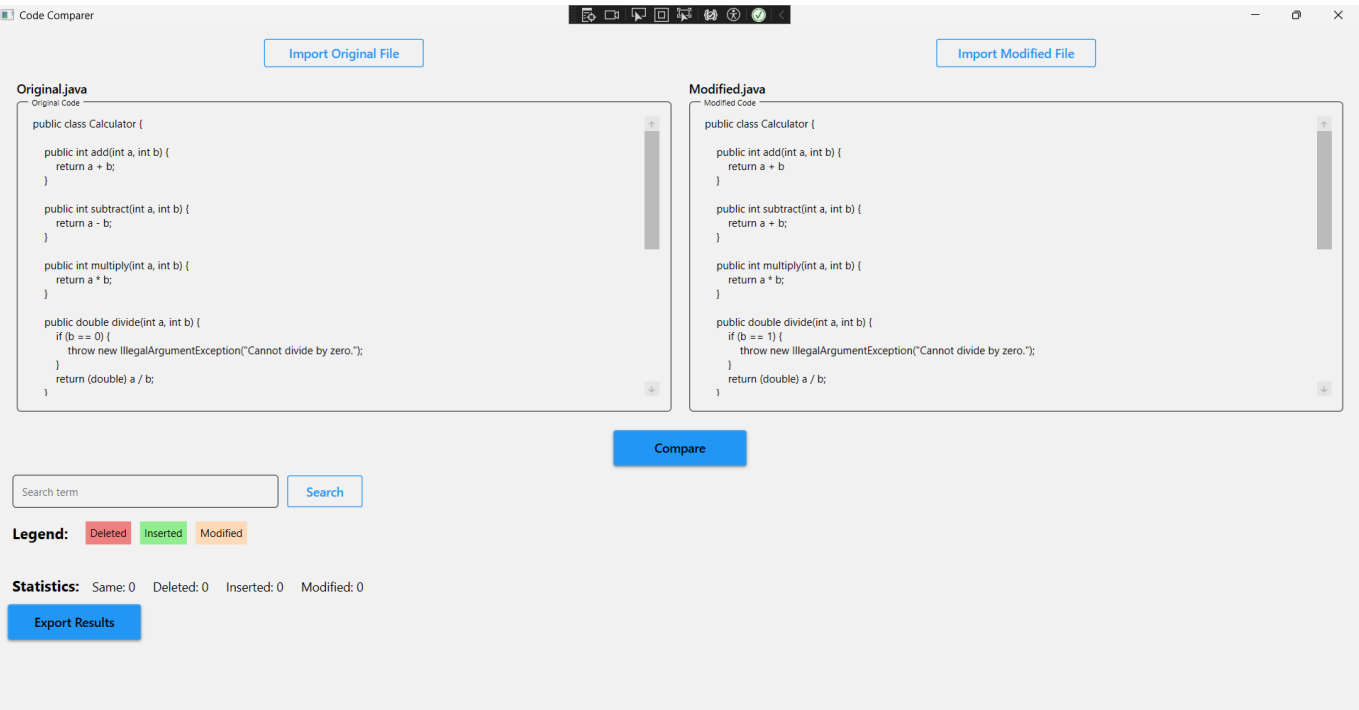# CodeComparer – Code Difference Viewer

CodeComparer is a WPF desktop application for visually comparing differences between two blocks of source code. It highlights changes, shows statistics, supports file import/export, and allows keyword search within code.

✦ Features

◇ Load Code Blocks

- You can **manually paste code** into the input fields or **import code from files** (`.cs`, `.txt`, `.java`, `.py`, etc.).
- The name of the imported file is displayed above each code block for clarity.
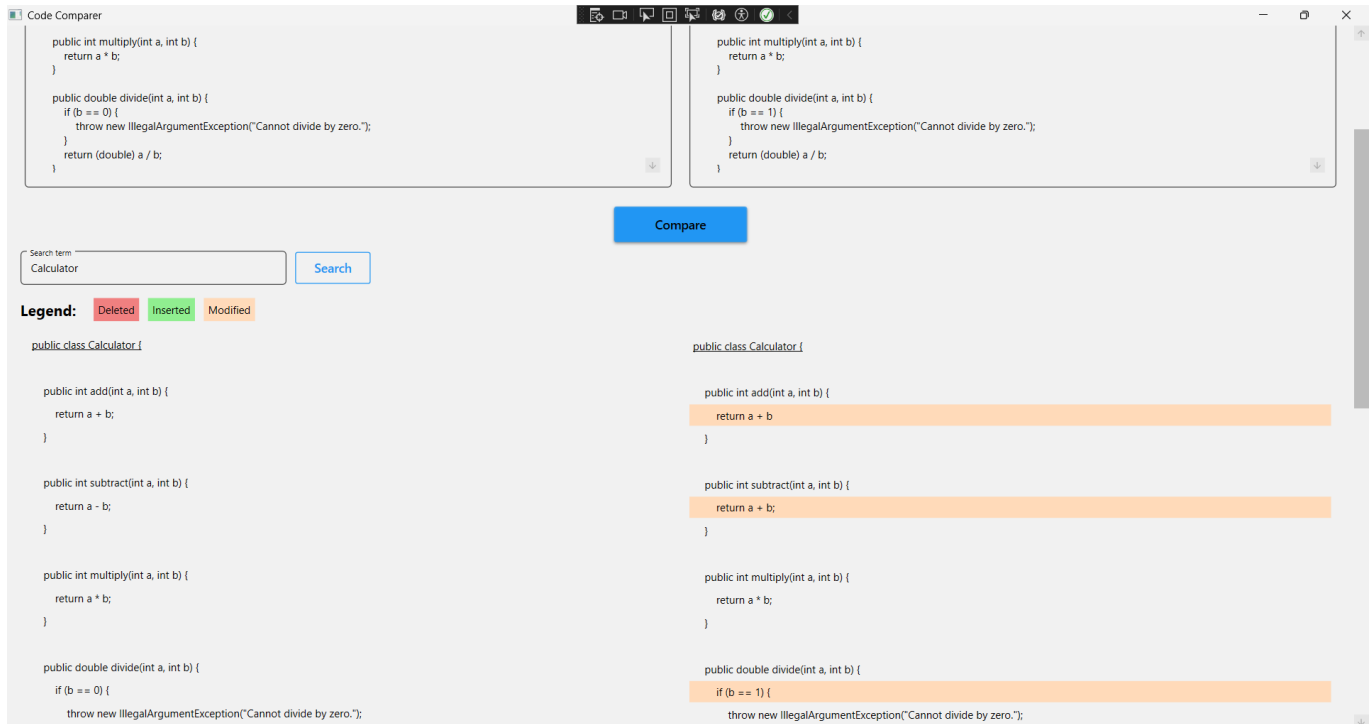
◇ Code Comparison

- The app compares the two blocks line by line and aligns them side-by-side.

- It detects and displays:

    - **Inserted lines** (green),
    - **Deleted lines** (red),
    - **Modified lines** (orange),
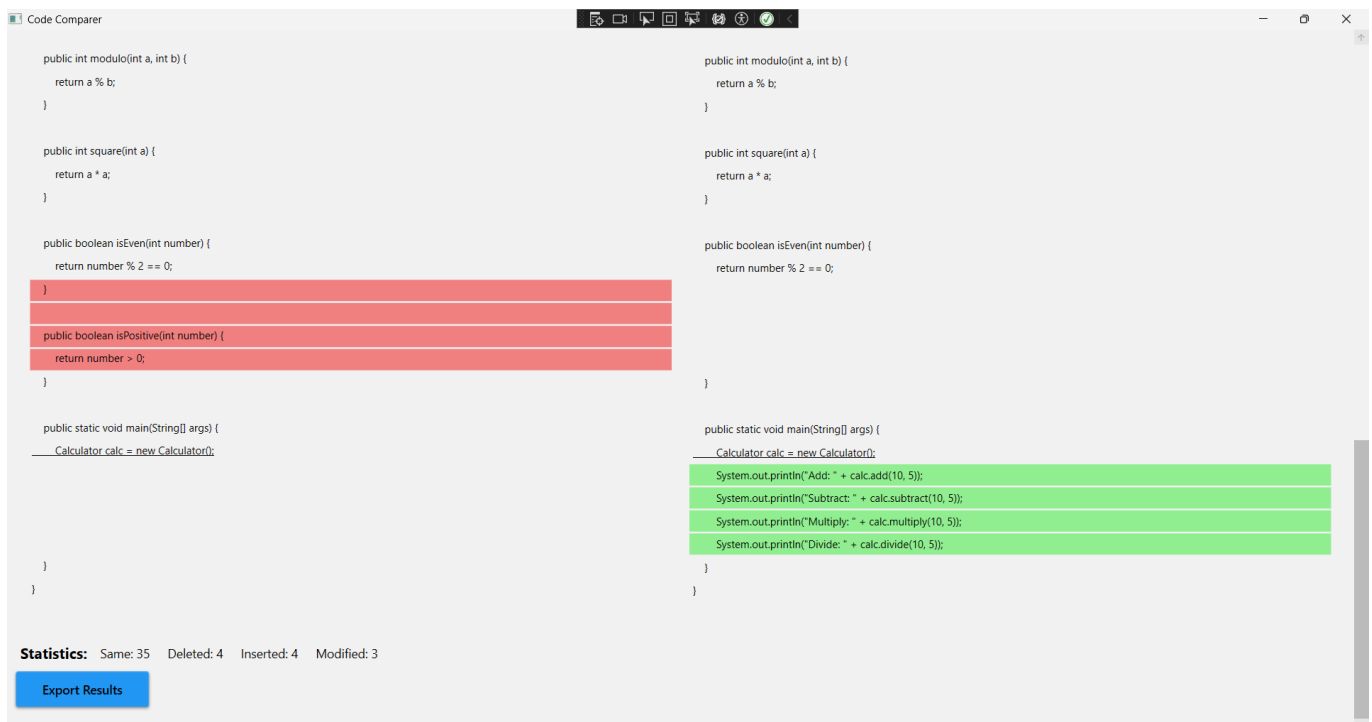   - and unchanged lines.

◇ Visual Highlighting

- Differences are color-coded:

    - ▨ Deleted lines – `LightCoral`
    - ▨ Inserted lines – `LightGreen`
    - ▨ Modified lines – `PeachPuff`

- You can quickly spot where changes occurred.

◇ Search

- You can search for any term or keyword.
- Matching lines are underlined to improve visibility in large files.

◇ Statistics Summary

- The app shows the number of:

    - Same lines
    - Inserted lines
    - Deleted lines
    - Modified lines

◇ Export Results

```
== Code Comparison Results ==
Same Lines: 35
Inserted Lines: 4
Deleted Lines: 4
Modified Lines: 3

== Differences ==

[Same]
Original: public class Calculator {
Modified: public class Calculator {

[Same]
Original:
Modified:                                                    4 / 4

[Same]
Original:     public int add(int a, int b) {
Modified:     public int add(int a, int b) {

[Modified]
Original:         return a + b;
Modified:         return a + b

[Same]
Original:     }
Modified:     }

[Same]
Original:
Modified:

[Same]
Original:     public int subtract(int a, int b) {
Modified:     public int subtract(int a, int b) {

[Modified]
Original:         return a - b;
Modified:         return a + b;
```

- After comparing, you can **export the comparison results** to a `.txt` file.

- The exported file contains:

    - Summary statistics
    - A full list of differences with labels

🛠️ Technologies Used

- **WPF** (Windows Presentation Foundation)
- **MVVM** architecture
- **DiffPlex** for code comparison logic
- **MaterialDesignInXAML** for modern UI components