2 Pass Assembler - Documentation

Introduction

The 2 Pass Assembler is a software tool designed to translate assembly language code into machine code. The assembler operates in two passes:

- Pass 1: Constructs the symbol table and intermediate representation of the assembly code.
- Pass 2: Converts the intermediate code into final machine code by resolving addresses and generating the object code.

This documentation provides instructions on how to use the assembler and the features it offers.

System Requirements

Operating System: Windows

Required Frameworks: Java Development Kit (JDK) version 8 or higher (if Java is required)

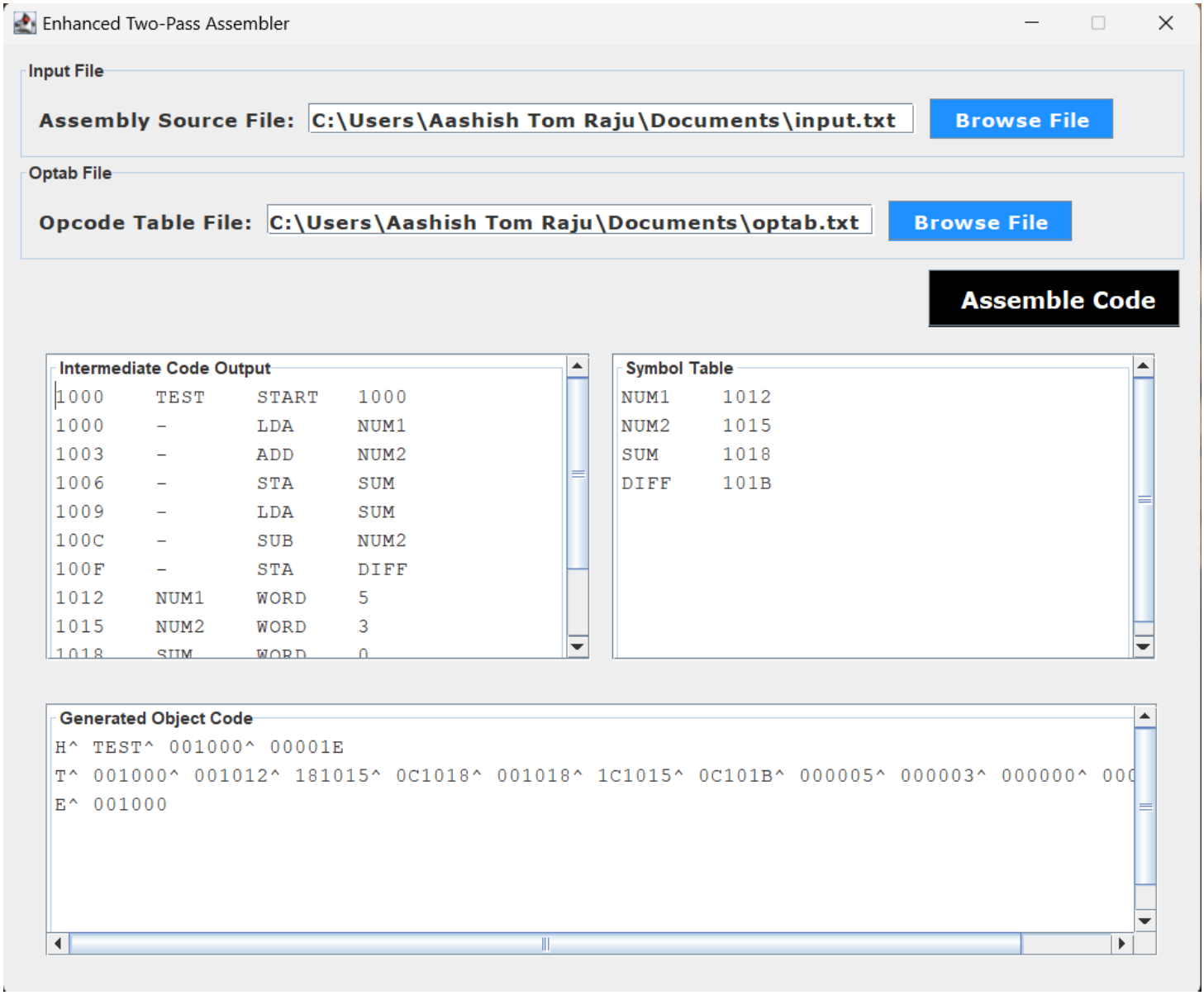
Minimum RAM: 2GB

Disk Space: 100MB

Installation

1. Download the 2 Pass Assembler executable file (2 Pass Assembler.exe) onto your machine.
2. Ensure your system meets the required specifications mentioned above.

Running the Application



1. Launch the Executable:

- Double-click the 2 Pass Assembler.exe file to launch the application.

2. Input Assembly File:

- The program will prompt you to select an input file containing the assembly language code. Click "Browse" to locate the file.

3. Input Opcode Table:

- After selecting the assembly file, the program will ask for an opcode table file. This file contains the mapping of assembly instructions to their machine codes.

4. Start Assembling:

- Click the "Assemble" button to begin the two-pass assembly process.

5. View Outputs:

- Once complete, the intermediate file, symbol table, and final object code will be displayed.

6. Error Handling:

- Any syntax errors or issues in the assembly code will be flagged for correction.

Features

- File Browsing: Easily select input files using a file chooser dialog.
- Two-Pass Assembly Process: Ensures accurate symbol resolution and object code generation.
- Multiple Output Displays: View the intermediate file, symbol table, and object code.
- Responsive Design: The application remains responsive during assembly operations.

User Interface Overview

1. Input Fields:

- Browse Input File: Select the assembly file.
- Browse Opcode Table: Select the opcode table file.

2. Buttons:

- Assemble: Start the assembly process.
- Quit: Exit the application.

3. Output Areas:

- Displays for intermediate file, symbol table, and final object code.

Troubleshooting

- Ensure the assembly file and opcode table are formatted correctly.
- Check if your system meets the minimum requirements if the assembler crashes.
- Try reassembling if the files seem corrupted.

Conclusion

The 2 Pass Assembler provides a user-friendly interface for translating assembly code into machine code. It simplifies the assembly process and offers clear outputs for each stage.

Visit GitHub Repository to access the source code and installation instruction.