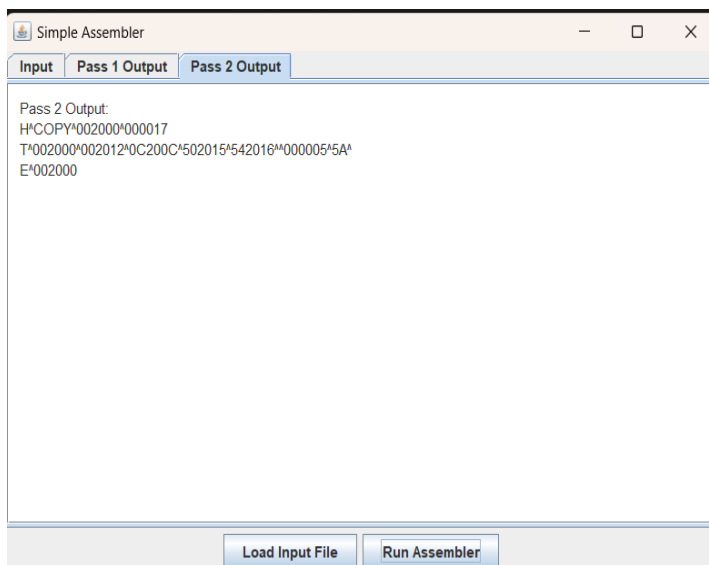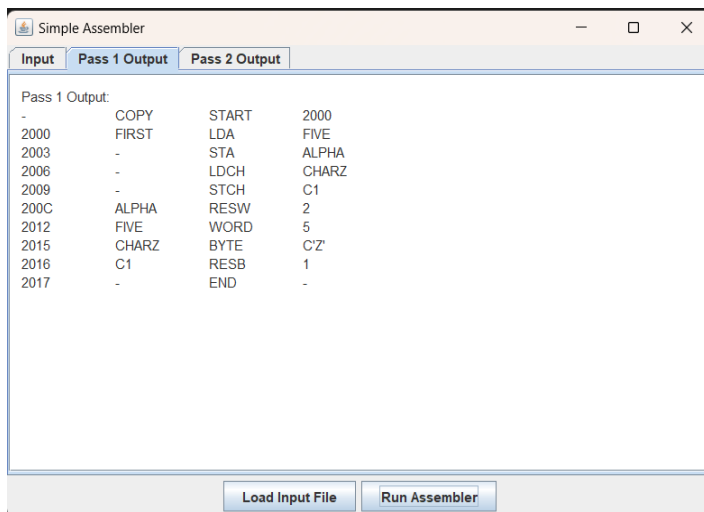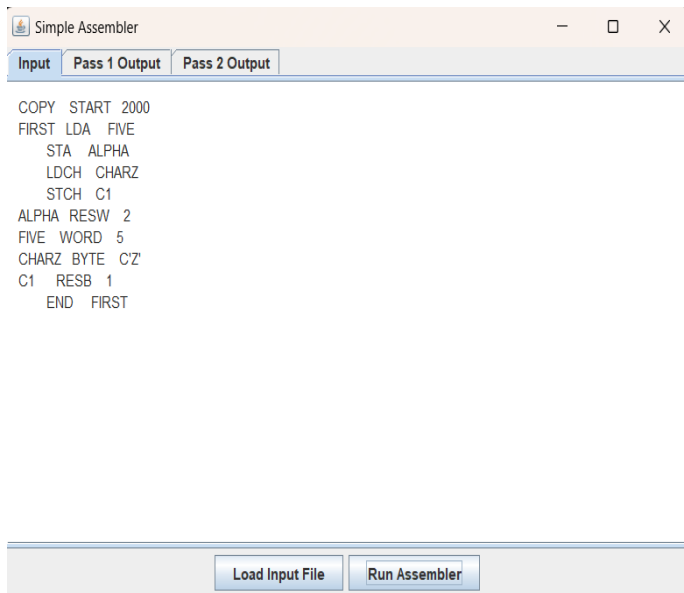# User Manual for Two-Pass Assembler GUI Application

Introduction

This document provides a detailed documentation for the two-pass assembler implementation with a graphical user interface (GUI) developed using JAVA. It reads an input file containing assembly code, processes it with an opcode table (OPTAB), and produces intermediate files(pass one output), final object code in HTE (Header, Text, End) format.

Installation and Setup

o Download the appropriate JDK for your platform.

o Download or clone the source code of the Two-Pass Assembler GUI application to your local machine.

o Open a command prompt or terminal.

o Navigate to the directory where the source code is saved.

o Compile the program:

 javac pass2.java

o Run the program:

java AssemblerApp

the Gui interface like the following:

Simple Assembler — Input

```
COPY   START  2000
FIRST  LDA    FIVE
       STA    ALPHA
       LDCH   CHARZ
       STCH   C1
ALPHA  RESW   2
FIVE   WORD   5
CHARZ  BYTE   C'Z'
C1     RESB   1
       END    FIRST
```

Load Input File   **Run Assembler**

Simple Assembler — Pass 1 Output

```
Pass 1 Output:
-              COPY       START       2000
2000           FIRST      LDA         FIVE
2003           -          STA         ALPHA
2006           -          LDCH        CHARZ
2009           -          STCH        C1
200C           ALPHA      RESW        2
2012           FIVE       WORD        5
2015           CHARZ      BYTE        C'Z'
2016           C1         RESB        1
2017           -          END         -
```

Load Input File   **Run Assembler**

Simple Assembler — Pass 2 Output

```
Pass 2 Output:
HᴬCOPYᴬ002000ᴬ000017
Tᴬ002000ᴬ002012ᴬ0C200Cᴬ502015ᴬ542016ᴬᴬ000005ᴬ5Aᴬ
Eᴬ002000
```

Load Input File   **Run Assembler**

Properties of Key Buttons:

Input button: Used to display the input text.

Load Input File: Used to load the assembly input file into the input text area.

Run Assembler: Used to run the assembler by executing Pass 1 and Pass 2.

Pass 1 Output: Used to display pass 1 output (intermediate text).

Pass 2 Output: Used to display pass 2 output (final object code in HTE (Header, Text, End) format).

Steps to Use the GUI

1. Entering the Source Code: Type or paste your assembly language code in the Input Source Code text area using Load Input File button.

2.Click the Run Assembler Button

3.Click Pass 1 Output button to view pass 1 output (intermediate text).

4.Click Pass 2 Output Button to view pass 2 output (final object code in HTE (Header, Text, End) format).

Example for input and optab:

Input:

COPY	START	2000
FIRST	LDA	FIVE
	STA	ALPHA
	LDCH	CHARZ
	STCH	C1
ALPHA	RESW	2
FIVE	WORD	5
CHARZ	BYTE	C'Z'
C1	RESB	1
	END	FIRST

Optab:

LDA 00

STA 0C

LDCH 50

STCH 54

Two files should be safe in input.txt and optab.txt

Here is the GitHub link:

https://github.com/Aaaabb-del/pass2/tree/main