

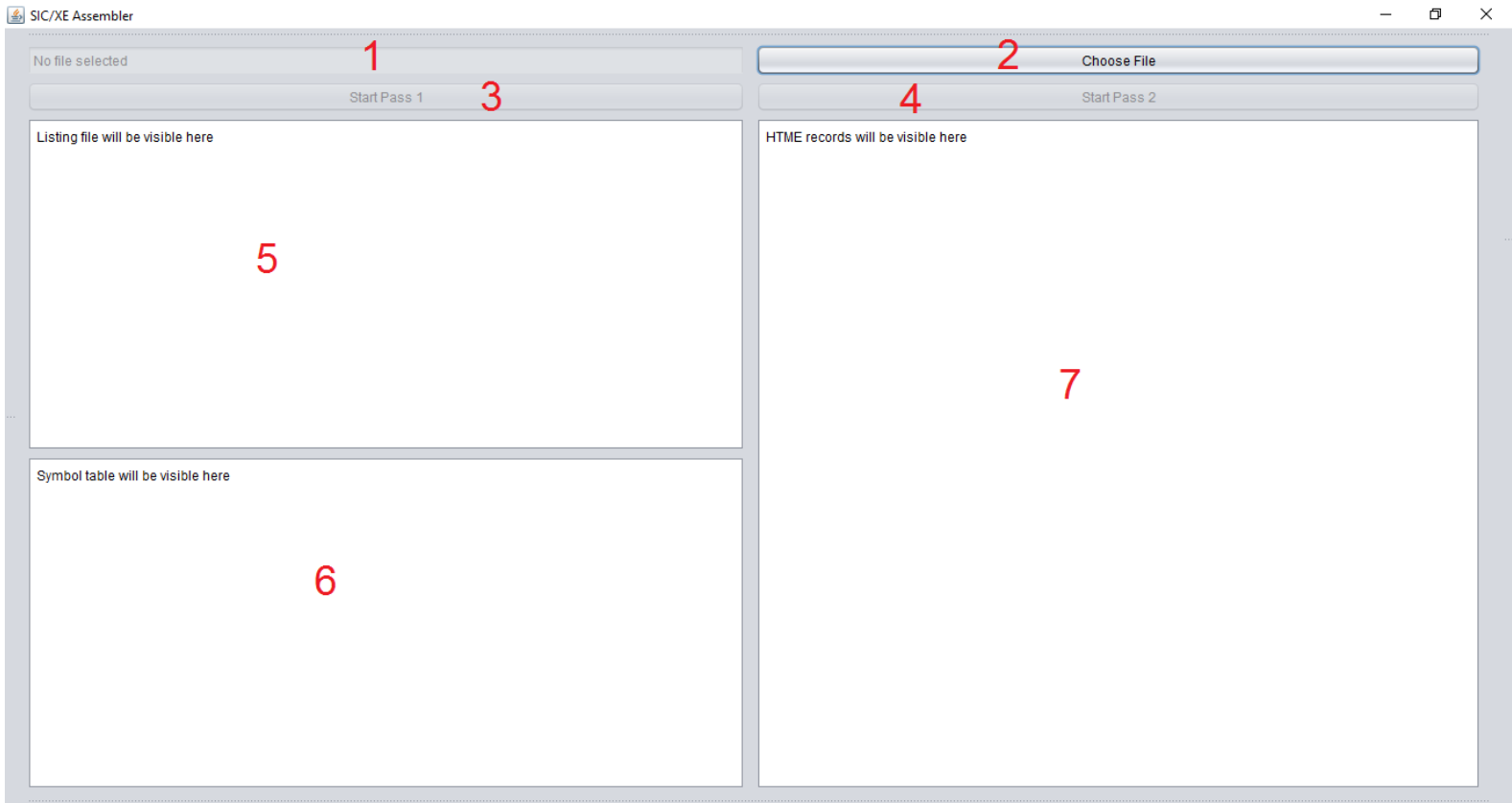
# SIC-XE Two Pass Assembler

## User Manual

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# UI Elements



1. Chosen file path
2. Choose file button. You can browse to a file using this button
3. Pass 1 start button. Will be disabled until a file is chosen.
4. Pass 2 start button. Will be disabled until pass 1 is completed **without errors**. Will be disabled again after HTME records are generated.
5. Listing file data is shown here. Also available as a txt file that can be found at the same place as the jar file.
6. Symbol table is shown here. Also available as a txt file that can be found at the same place as the jar file.
7. HTME records is shown here. Also available as a txt file that can be found at the same place as the jar file.

## Running the code in lecture slides (COPY)

The screenshot shows the SIC/XE Assembler interface with two panels. The left panel, titled 'Start Pass 1', displays the assembly listing for the first pass. The right panel, titled 'Start Pass 2', displays the assembly listing for the second pass.

**Start Pass 1 Listing:**

Address	Label	Instruction	Operands	Comments
00000	COPY	START	0	
00000	FIRST	STL	RETADR 17202D	
00003		LDB	#LENGTH 69202D	
00006	CLOOP	+JSUB	RDREC 4B101036	
0000A		LDA	LENGTH 032026	
0000D		COMP	#0 290000	
00010		JEQ	ENDFIL 332007	
00013		+JSUB	WRREC 4B10105D	
00017		J	CLOOP 3F2FEC	
0001A	ENDFIL	LDA	EOF 032010	
0001D		STA	BUFFER 0F2016	
00020		LDA	#3 010003	
00023		STA	LENGTH 0F200D	
00026		+JSUB	WRREC 4B10105D	
0002A		J	@RETADR 3E2003	
0002D	EOF	BYTE	C'EOF' 454F46	
00030	RETADR	RESW	1	

**Start Pass 2 Listing:**

```
H COPY 000000 001077
T 000000 1D 17202D 69202D 4B101036 032026 290000 332007 4B10105D 3F2FEC 032010
T 00001D 13 0F2016 010003 0F200D 4B10105D 3E2003 454F46
T 001036 1D B410 B400 B440 75101000 E32019 332FFA DB2013 A004 332008 57C003 B850
T 001053 1D 3B2FEA 134000 4F0000 F1 B410 774000 E32011 332FFA 53C003 DF2008 B850
T 001070 07 3B2FEF 4F0000 05
M 000007 05
M 000014 05
M 000027 05
E 000000
```

### Notes:

1. If an error occurs in pass 1 (like duplicate label, unknown instruction... etc), pass 2 will be disabled until the errors are fixed.  
An error message will appear to the user. Also the exact errors will be visible in the Listing File.
2. If an error occurs in pass 2 (like base relative calculation when no base is specified) the error message will be visible in the text area.
3. The generated object code in this example is correct. We double checked it. It's the same as the one in the lecture slides.