CS474
OOLE
(UIN: 675652327)

Assembly Language Interpreter
for Simple Assembly Language

1. Abstract

In this project, we are implementing an Assembly Language Interpreter (ALI) for simple assembly language using Smalltalk. The GUI takes the input through the text editor and provides the appropriate output on clicking the "Execute" button or "Debug button." It displays the state of the memory and the values of the program counter, register, accumulator, zero bit and overflow bit.

2. Usage Manual

1) This project was done using Windows OS. Open the project in VisualWorks IDE using "File In".

2) Go to the GUI Class, go to Class -> windowSpec and click on Open button to open the GUI named "ALI Interpreter."

3) Provide your input instructions through the text editor and click on the "Load" button to load the instructions to the RAM.

4) Click on "Execute" to execute all the instructions at once. Click on "Debug" to execute one instruction at a time.

5) Click on "RESET" to enter a new set of instructions.

Note:
- Do not load twice. It will raise an error.
- Avoid giving blank spaces after the instruction.

3. Input Sample:

LDI 12
XCH
LDI 45
ADD
JVS 6
JZS 7
DEC X
ST 30
ST 35
LDB 35
JMP 12
ST 20
HLT

Output:

ALI Interpreter

Editor

A Register   57

B Register   57

PC   12

Zero Bit   0

Overflow Bit   0

Execute   Debug

```
0 LDI 12
1 XCH
2 LDI 45
3 ADD
4 JVS 6
5 JZS 7
6 DEC X
7 ST 30
8 ST 35
9 LDB 35
10 JMP 12
11 ST 20
12 HLT
13 nil
14 nil
15 nil
16 nil
17 nil
18 nil
19 nil
20 nil
```

Load   Reset