

Assignment - A2

Title:- Pass-II of Two pass assembler

Problem Statement:-

Implement pass-II of two pass assembler for pseudo-machine in java using object oriented features.

The output of assignment-1 should be input i/p of this assignment.

Objective :-

- ① Understand the Internals of language translators
- ② Handle tools like LEX & YACC
- ③ Understand the operating System internals & functionalities with the implementation point of view.

H/W & S/W :-

System with 64 bit OS,
Eclipse, Java 13 & 25 machines.

Theory:-

Assembler is a program which converts assembly language instructions into machine language form. A two pass assembler takes two scans of source code to produce the machine code to produce the machine code from assembly language program.

Assembly process consists of following activity :

- ① Convert mnemonics to their machine language opcode equivalent
- ② Convert symbolic operands to their machine address
- ③ Translate data constants into internal machine representation.
- ④ Output the object program & provide other information required for linker & loader.

Pass-II tasks :-

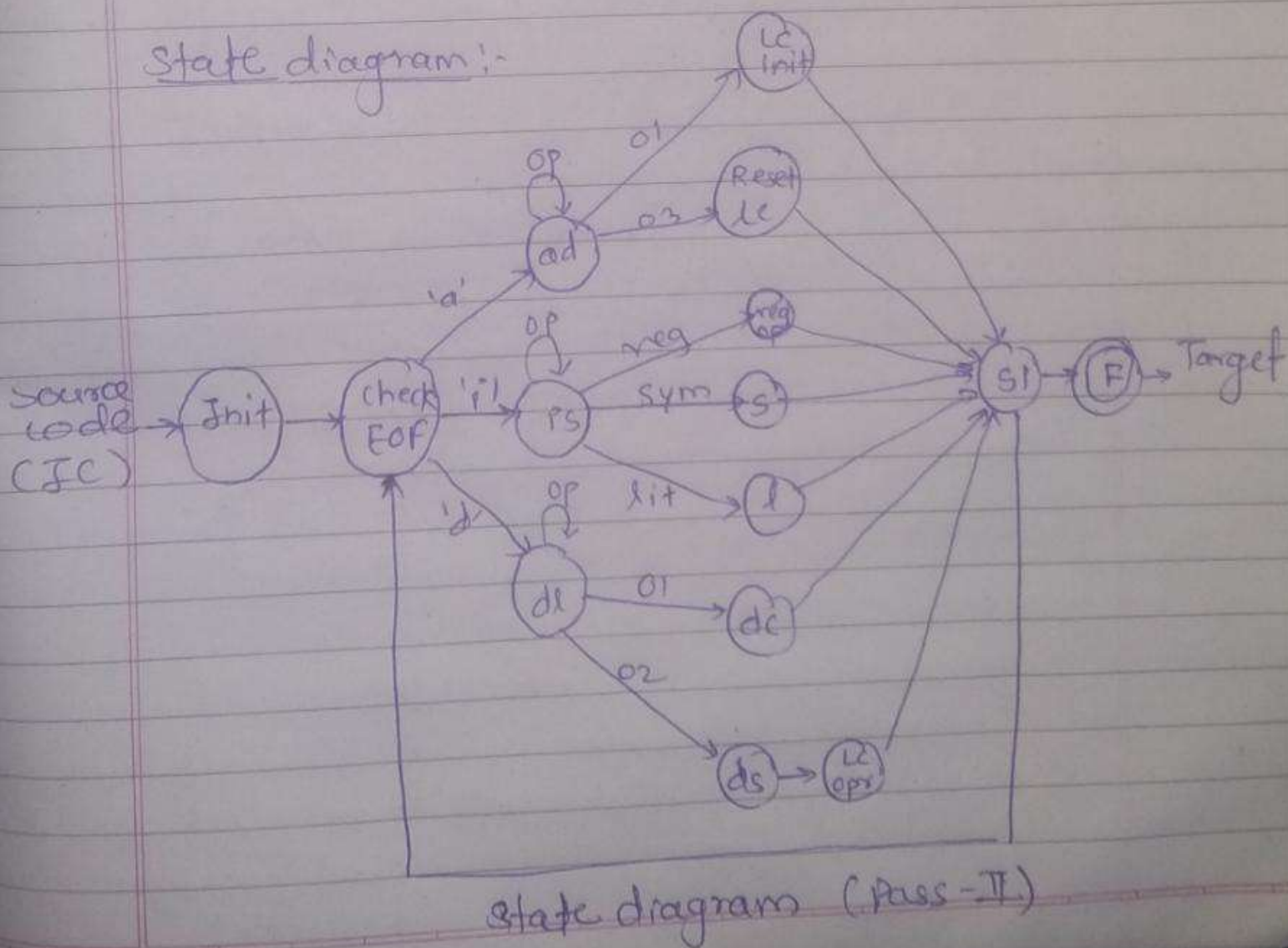
- ① Generate opcode data values defined by BYTE, WORD.
- ② Assembler Instructions (generate opcode & look up address).

- ③ Perform processing of assembler directives (not done in pass-I)
- ④ Write the Object program & the assembly listing.

Algorithm 1:-

- ① Read Intermediate code file generated in Pass-I
- ② Search symbol & literal tables to use in machine code generation.
- ③ Generate machine code

State diagram:-



Conclusion:

We have learnt & successfully implemented the pass- π assembler.