31118

Name. Shubham Chemate

PICT, PUNE

LP Assignment: Pass-II of two-pass Assembler.

Problem Statement:

Implement pass-II of 2-pass assembler for pseudo machine into Java using OOP features. Output of pass-I assignment should be used as input.

Objectives:

- Handle tools like LEX & YACC
- Understand the operating system internals & functionalities with implementation in consideration.

Software & Hardware:

- Windows 10
- Intel core i-5 processor
- 8GB RAM & 512 GB SSD

Learning Outcomes:

- Pass & tokenise intermediate file.
- Perform IC processing
- Generate target code file.
- Demonstrate use of symbol table, it literal table, pool table.

Theory:

- Assembler is a program which converts assembly language intructions into machine language form.
- A two pass assembler takes two scan of source to produce the machine code.

Assembler Activities:

- Convert mnemonics of this machine language.

opcode
- convert symbolic operands to machine address.
- Translate data constant into internal machine representations
- Output the object project & provide it to linker loader

Pass-II tasks:

i) Assemble instructions, generate opcode & look addresses
ii) Generate data values defined by BYTE & WORD.
iii) Perform processing of assemble directives.
iv) Write the object program & assembly listing

Algorithm:

1. Start
2. Read Intermediate file generated in pass-I
3. Search symbol & literals tables to use in machine code.
4. Generate Machine Code
5. End

Conclusion

In this assignment, I learned about working mechanism of pass-II of 2-pass assembler. I also implemented in Java programming language.