Roll No: 17

4th Assignment

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Aim :- Design of a Macro Pass 2

Problem statement :- write a java program for pass 2 of a II pass macro processor. The o/p of assignment -3 (MNT, MDT and file without any macro definition) should be i/p for this assignm

Theory :-

(1) **Macroprocessers :-**

It is a prog that reads files and scan them for certain keyword when a keyword is found it is replaced by some text. The keyword / text combination called as MACRO.

(2) Basic task performed by MACRO Processor
- Recognize Macrodefination
- Save the defination
- Recognize call
- Expand call and substitute arguments

(3) In two ~~A~~ pass macroprocessor you have 2 algo to implement
i) Pass 1 macro defination
ii) Pass 2 macro call & expansion

Pass 1 macro defination
1. Initialize MDTC and MNTC val -1 so that the previous value of MDTC and MNTC are set to 1
2. Read the 1st i/p data

3. If the data contains MACRO Pseudo opcode then
A] Read the next data i/p
B] Enter name of MACRO and current value of MDTC and MNT
C] Increase the counter value of MNT by one
D] Prepare the argument list array respective to macro found
E] enter the macro defination in MDT Inc value of MDT by 1
F] Read next line of i/p data
G] substitute the inded notation for dummy arg passed in macro
H] Inc counter of MDT by 1
I] If mend Pseudo opcode is encountered then next source of i/p data is read.
J] else expand data i/p
4. A copy of i/p data is created

Pass 2 Macro calls and expansion
1. Read the i/p received from Pass 1
2. examine each opcode for finding respective entry in MNT
3. IF name of macro encountered then
A] A Ptr set to MNT where name of macro point this Ptr called macro Defenition Table pointer
B] prepare arg list array containing table of dummy arg
C] Inc value of MDTP by 1
D] Read next line of MDT
E] substitute value from arg list of the main for dummy arg

F] If mend pseudo opcode found then next Source i/p data is read.
G] else expand data i/p
4. when macro name is not found then create expanded data file
5. If end pseudo opcode is encountered then feed expanded source file to Assembler
6. else read next data i/p

conclusion:-

Thus pass II macro processor implemented and ALA file generated