Pass-2 Macroprocessor

Name: Kajal Sunil Pagare.
Roll no: 26 Div: B
class: TE.

Aim - Design of a MACRO PASS-2.

Problem Statement - Write Java program for pass-II of a two-pass macro-processor The output of assignment-3 (MNT, MDT and file without any macro definition) should be input for this assignment.

Theory.

1. macro Processor -
A macroprocessor is a program reads a file and scan them for certain keywords. when a keyword found, it is replaced by some text.

2. Basic tasks performed by macro processor
   a) Recognize macrodefinition
   b) Save thedefinition
   c) Recognize Call
   d) Expanded calls and substitudearguments

- Pass1 micro definaion.
- Pass2 macro calls and Expansion

Pass I Macro Definition.

1. Initialize MDTC & MNTC with value one, so that previous value of MDTC & MNTC is set to value one.
2. Read the first input data.
3. If this data contain MACRO pseudo opcode.
   A. Read the next data input.
   B. Enter the name of the macro and current value MDTC in MNT.
   C. Increase the counter value MNT by value one
   D. prepare that argument list array respective to the macro found.
4. If macro pseudo opcode is not encountered in data input then.

Pass 2 Macro Calls and Expansion.

1. Read the input data received from Pass I.
2. Examine each operation code for finding respective entry in MNT.
3. If name of macro is encountered then.
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 for processing.
6. Elese read next source of data input.

Draw flowchart w.r.t algorithms.

Input :

```
Input.
MACRO.
INCR1 &FIRST,&SECOND = DATA 9.
A    1, &FIRST
L    2, &SECOND
MEND MACRO.
INCR2 &ARG1, &ARG2 = DATA 5
L 3, &ARG1
ST 4, &ARG2.
MEND
PRG2 START
USING *BASE.
INCR1 DATA1
INCR1 DATA3, DATA4
FOUR DC F'4'
FIVE DC. F'5'
BASE EQU 8
TEMP DS IF.
DROP 8
END
```

o/p -

PASS1

ALA :

[&FIRST, &SECOND]

[&ARG1, &ARG2].

MNT:

[INCR1, 0]

[INCR2, 4]

MOT: &FIRST, &SECOND = DAT

I Ag

A 1, #0

L 2, #1

MEN

D &ARG1, &ARG2 = DATA5-

D

INCR

2 3, #0

ST 4, #1

MEN

D

Pass 2 -

MOT: &FIRST, &SECOND = DAT

INCR : Ag

I

A 1, #0

L 2, #0

MEN

D

PROG2 STAR * BASE

T

USIN

MEERA
PAGE NO.:
DATE: / /

```
            G       I, DATA I
            A       2, DATA 9
            L       3, DATA 3
            L       4, DATA 4
            ST      F'4'
FOUR        DC      F'5'
FIVE        DC      8'
BASE        EQU     IF.
TEMP        DS      8.
            DRO
            P
            END
```

ALA:

[DATA I, DATA 9)
[DATA 3, DATA 4]

Conclusion → Thus Pass - II of macro processor is implemented and ALA file is generated.