**MACRO PASS 1**

import java.io.\*;

public class mppass1 { public static void main(String[] args) throws IOException {

BufferedReader br1 = new BufferedReader(new

FileReader("C:\Users\vrudr\OneDrive\Desktop\MPass1\MPass1\\input.txt"));

String line;

mdt[] MDT = new mdt[20]; mnt[] MNT = new mnt[4]; arglist[] ARGLIST = new arglist[10]; boolean macro\_start= false, macro\_end= false, fill\_arglist= false; int mdt\_cnt=0, mnt\_cnt = 0, arglist\_cnt=0; while((line = br1.readLine())!= null){ line = line.replaceAll(",", " ");

String[] tokens = line.split("\\s+");

MDT[mdt\_cnt] = new mdt(); String stmt =""; for(int i =0;i<tokens.length;i++){ if(tokens[i].equalsIgnoreCase("mend")){ MDT[mdt\_cnt++].stmt = "\t"+tokens[i]; macro\_end = true;

}

if(tokens[i].equalsIgnoreCase("macro")){ macro\_start= true; macro\_end= false;

}

else if (! macro\_end){ if(macro\_start){

MNT[mnt\_cnt++]= new mnt(tokens[i], mdt\_cnt);

macro\_start= false;

fill\_arglist= true;

} if(fill\_arglist){

while(i<tokens.length){

MDT[mdt\_cnt].stmt = MDT[mdt\_cnt].stmt + "\t" + tokens[i];

stmt = stmt + "\t" + tokens[i]; if(tokens[i].matches("&[a-zA-Z]+")||tokens[i].matches("&[a-zA-Z]+ [0-9]+")) ARGLIST[arglist\_cnt++]= new arglist(tokens[i]);

i++;

}

fill\_arglist=false;

}

else{

if(tokens[i].matches("&[a-zA-Z]+")||tokens[i].matches("&[a-zA-Z]+ [0-9]+")){ MDT[mdt\_cnt].stmt = MDT[mdt\_cnt].stmt+ "\t"+ tokens[i];

stmt = stmt + "\t"+ tokens[i];

}

if(tokens[i].matches("&[a-zA-Z]+")||tokens[i].matches("&[a-zA-Z]+ [0-9]+")){

for(int j=0;j<arglist\_cnt; j++) if(tokens[i].equals(ARGLIST[j].argname)){

MDT[mdt\_cnt].stmt = MDT[mdt\_cnt].stmt + "\t#"+(j+1); stmt = stmt + "\t#"+ (j+1);

}

}

}

}

}

if(stmt!="" && !macro\_end) mdt\_cnt++;

}

br1.close();

BufferedWriter bw1 = new BufferedWriter(new

FileWriter("C:\Users\vrudr\OneDrive\Desktop\MPass1\MPass1\\mnt.txt"));

System.out.println("\n\t----------MACRO NAME TABLE----------"); System.out.println("\n\tINDEX\tNAME\tADDRESS");

for(int i=0;i<mnt\_cnt;i++){

System.out.println("\t"+ i+"\t"+MNT[i].name+"\t"+ MNT[i].addr); bw1.write(MNT[i].name+"\t"+ MNT[i].addr+"\n");

}bw1.close();

bw1 = new BufferedWriter(new

FileWriter("C:\Users\vrudr\OneDrive\Desktop\MPass1\MPass1\\arglist.txt"));

System.out.println("\n\t----------ARGUMENT LIST----------"); System.out.println("\n\tINDEX\tNAME"); for(int i=0;i<arglist\_cnt;i++){

System.out.println("\t"+ i+"\t"+ARGLIST[i].argname); bw1.write(ARGLIST[i].argname+"\n");

}bw1.close();

bw1 = new BufferedWriter(new

FileWriter("C:\Users\vrudr\OneDrive\Desktop\MPass1\MPass1\\mdt.txt"));

System.out.println("\n\t----------MACRO DEFINATION TABLE----------"); System.out.println("\n\tINDEX\t\t\tSTATEMENT"); for(int i=0;i<mdt\_cnt;i++){

System.out.println("\t"+ i+"\t"+MDT[i].stmt); bw1.write(MDT[i].stmt+"\n");

}bw1.close();

}

}

**Input.txt**

MACRO

INCR &A,&B,&REG

MOVER &REG,&A

ADDS &A,&B

MOVEM &REG,&A

MEND

MACRO

ADDS &F,&S

MOVER AREG,&F

ADD AREG,&S

MOVEM AREG,&S

MEND

MACRO

SUBS &F,&S

MOVER BREG,&F

SUB BREG,&S

MOVEM BREG,&S

MEND

START 200

READ N1

READ N2

ADDS N1,N2

SUBS N1,N2

INCR N1,N2,DREG

STOP

**Output:**

