import java.io.\*;

public class MPass1 {

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

BufferedReader br1 = new BufferedReader(new FileReader("D:\\TCOB22\\MacroAssembler\\src\\input3.txt"));

String line;

mdt[] MDT = new mdt[20];

mnt[] MNT = new mnt[4];

arglist[] ARGLIST = new arglist[10];

boolean macro\_start = false,fill\_arglist = false,macro\_end = 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 stmnt = "";

for(int i = 0;i<tokens.length;i++)

{

if(tokens[i].equalsIgnoreCase("mend"))

{

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

stmnt = stmnt + "\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]") || tokens[i].matches("[0-9]+"))

{

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

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

stmnt = stmnt +"\t #" + (j+1);

}

}

}

}

}

}

if(stmnt!="" && !macro\_end)

mdt\_cnt++;

}

br1.close();

BufferedWriter bw1=new BufferedWriter(new FileWriter("D:\\TCOB22\\MacroAssembler\\src\\MNT.txt"));

System.out.println("\n\t\*MACRO NAME TABLE\*");

System.out.print("\n\tINDEX\tNAME\tADDRESS \n");

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

{

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

}

bw1=new BufferedWriter(new FileWriter("D:\\TCOB10\\MacroAssembler\\src\\MDT.txt"));

System.out.println("\n\t\*ARGUMENT LIST\*");

System.out.print("\n\tINDEX\tNAME\tADDRESS \n");

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

{

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

}

System.out.println("\n\t\*MACRO DEFINITION TABLE\*");

System.out.print("\n\tINDEX\tSTATEMENT \n");

bw1=new BufferedWriter(new FileWriter("D:\\TCOB22\\MacroAssembler\\src\\MDT.txt"));

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

{

System.out.println("\t" + i + "\t" + MDT[i].stmnt);

}

}

public class mnt {

String name;

int addr;

int arg\_cnt;

mnt(String nm,int address)

{

this.name=nm;

this.addr=address;

this.arg\_cnt=0;

}

}

public class mdt

{

String stmnt;

public mdt()

{

stmnt="";

}

}

public class arglist

{

String argname;

arglist(String argument)

{

this.argname=argument;

}

}

MACRO

INCR &X,&Y,&REG1=AREG

MOVER &REG1,&X

ADD &REG1,&Y

MOVEM &REG1,&X

MEND

MACRO

DECR &A,&B,&REG2=BREG

MOVER &REG2,&A

SUB &REG2,&B

MOVEM &REG2,&A

MEND

START 100

READ N1

READ N2

DECR N1,N2

INCR N1,N2

STOP

N1 DS 1

N2 DS 2

END

