**Practical Assignment 3:**

**Design suitable data structures and implement pass-I of a two-pass macro-processor using**

**OOP features in Java.**

import java.io.\*;

import java.io.File;

import java.io.FileNotFoundException;

import java.util.Scanner;

class macro

{

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

{

int MDTC=1;

int MNTC=1;

int index=1;

int macroindex=0;

String arg[]=new String[10];

String mname[]=new String[10];

String MNT [][]=new String[10][10];

String MDT [][]=new String[10][10];

String output =new Scanner(new File(“file1.txt”)).useDelimiter(“\\Z”).next();

String result[]=output.split(“\n”);

String result1[]=output.split(“[,\\s\\?]”);

for(int k=0;k&lt;result1.length;k++)

{

if(result1[k].equals(“MACRO”)||result1[k].equals(“macro”))

{

mname[macroindex]=result1[k+2];

macroindex++;

}

}

System.out.println(“\nMACRO NAME TABLE\n—————————————–“);

System.out.println(“VALUE OF MDTC\tMNTC\tNAME”);

for(int k=0;k&lt;macroindex;k++)

{

System.out.println(“\t”+MDTC+”\t”+MNTC+”\t”+mname[k]);

MNTC=MNTC+1;

}

System.out.println(“\n\nMACRO DEF TABLE\n—————————————–“);

System.out.println(“INDEX\tCARD”);

for(int i=1;i&lt;result.length;i++)

{

System.out.println(MDTC+”\t”+result[i]);

MDTC=MDTC+1;

}

System.out.print(“\n\nARGUMENT LIST ARRAY\n——————————–“);

for(int k=3;k&lt;result1.length;k++)

{

if(result1[k].equals(mname[0]))

{

arg[0]=result1[k+1];

arg[1]=result1[k+2];

arg[2]=result1[k+3];

}

}

System.out.println(“\nINDEX\t ARGUMENTS”);

System.out.println(“\n”+index+”\t”+arg[0]+”\n”+(index+1)+”\t”+arg[1]+”\n”+(index+2)+”\t”+a

rg[2]+”\n”);

System.out.print(“\n\nOUTPUT PROGRAM AFTER CALL\n——————————–“);

for(int k=6;k&lt;result1.length;k++)

{

for(int i=3;i&lt;6;i++)

{

if(result1[k].equals(result1[i]))

{

result1[k]=arg[i-3];

}}}

for(int k=6;k&lt;result1.length;k++)

{

if(result1[k].equals(“MEND”))

{

System.out.print(“END”);

break;

}

if(result1[k].equals(“”))

System.out.println();

else

System.out.print(result1[k]+” “);

}}}

File1.txt

MACRO

ADDITION &amp;arg1,&amp;arg2,&amp;arg3

MOV ax,&amp;arg1

ADD ax,&amp;arg2

ADD ax,&amp;arg3

MEND

ADDITION 34,45,44

END

**OUTPUT:**

MACRO NAME TABLE

—————————————–

VALUE OF MDTC MNTC NAME

1 1 ADDITION

MACRO DEF TABLE

—————————————–

INDEX CARD

1 ADDITION &amp;arg1,&amp;arg2,&amp;arg3

2 MOV ax,&amp;arg1

3 ADD ax,&amp;arg2

4 ADD ax,&amp;arg3

5 MEND

6 ADDITION 34,45,44

7 END

ARGUMENT LIST ARRAY

——————————–

INDEX ARGUMENTS

1 34

2 45

3 44

OUTPUT PROGRAM AFTER CALL

——————————–

MOV ax 34

ADD ax 45

ADD ax 44

END \*/