**Exp 4**

//Input File

START 200

READ X

READ Y

READ L

MOVER AREG,X

ADD AREG,Y

MOVEM AREG,RESULT

PRINT RESULT

STOP

X DS '01'

Y DS '02'

Z DS '03'

RESULT DS '04'

END

**Code:**

//Literal Table

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

struct literal

{

char lit[10];

}L[10];

void main()

{

int i=0,y=0,k=0,j=0,l=1,t=1;

FILE \*file,\*fp1;

file=fopen("/home/cl03-65/Desktop/ASIP.c","r+"); //including the files

fp1=fopen("/home/cl03-65/Desktop/asd.c","w");

fprintf(fp1,"\*\*\*\*\*Literal Table\*\*\*\*\*\n");

char a[10]={0};

char c=0;

while(!feof(file))

{

int flag=0;

c=fgetc(file);

if (c=='\'') //start of single quote used for enclosing literals

{

c=fgetc(file);

while(c!='\'') // end of single quote used for enclosing literals

{

a[i]=c;

i++;

c=fgetc(file);

}

a[i]='\0';

i=0;

strcpy(L[k].lit,a);

fprintf(fp1,"%d %s\n",l, L[k].lit); //printing the literals in file ASIP

k++;

l++;

}

}

}

**Output:**

\*\*\*\*\*Literal Table\*\*\*\*\*

1 01

2 02

3 03

4 04

**Code:**

//Symbol Table

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

struct keyword

{

char name[10];

}K[40];

struct symbol

{

char sym[10];

}s[10];

struct literal

{

char lit[10];

}L[10];

void main()

{

int i=0,j=0,b=1,sflag=1,k=0,t=1,f=0,z=1,y=0;

strcpy(K[0].name,"STOP"); // making a keyword array

strcpy(K[1].name,"ADD");

strcpy(K[2].name,"SUB");

strcpy(K[3].name,"MULT");

strcpy(K[4].name,"MOVER");

strcpy(K[5].name,"MOVEM");

strcpy(K[6].name,"COMP");

strcpy(K[7].name,"BC");

strcpy(K[8].name,"DIV");

strcpy(K[9].name,"READ");

strcpy(K[10].name,"PRINT");

strcpy(K[11].name,"START");

strcpy(K[12].name,"END");

strcpy(K[13].name,"ORIGIN");

strcpy(K[14].name,"EQU");

strcpy(K[15].name,"LTORG");

strcpy(K[16].name,"DC");

strcpy(K[17].name,"DS");

strcpy(K[18].name,"AREG");

strcpy(K[19].name,"BREG");

strcpy(K[20].name,"CREG");

strcpy(K[21].name,"DREG");

strcpy(K[22].name,"LT");

strcpy(K[23].name,"LE");

strcpy(K[24].name,"EQ");

strcpy(K[25].name,"GT");

strcpy(K[26].name,"GE");

strcpy(K[27].name,"NE");

FILE \*fp,\*fp1;

fp=fopen("/home/cl03-65/Desktop/ASIP.c","r"); //opening the input file

fp1=fopen("/home/cl03-65/Desktop/asop1.c","w");

fprintf(fp1,"\*\*\*\*\*Symbol Table\*\*\*\*\*\n");

char a[10]={0};

char c;

char d[10]={0};

while(!feof(fp))

{

int flag=0;

c=fgetc(fp);

while(isalpha(c)) //using isalpha since all the symbol names are part of the alphabet

{

a[i]=c;

i++;

c=fgetc(fp);

flag=1; //flag is set for indicating detected string input

}

if(flag==1)

{

a[i]='\0';

i=0;

for(j=0;j<=27;j++)

{

b=strcmp(a,K[j].name); //check if the detected string of input file is a keyword

if(b==0)

break;

}

if(b!=0)

{

for(k=0;k<10;k++)

{

t=strcmp(a,s[k].sym); //check if string of input file has not already been detected as a symbol

if(t==0)

break;

}

if(t!=0)

{

fprintf(fp1,"%d %s\n",sflag,a);

strcpy(s[f].sym,a);

f++;

sflag++;

}

}

}

}

}

**Output:**

\*\*\*\*\*Symbol Table\*\*\*\*\*

1 X

2 Y

3 L

4 RESULT

5 Z