**Name:** G.R.Nithishkumar **Date:**

**Roll No.:** 20UCS088

**Program:** Implementation of symbol table using C

#include<stdio.h>

#include<ctype.h>

#include<stdlib.h>

#include<string.h>

#include<math.h>

void main()

{

int i=0, j=0, x=0, n;

void \*p, \*add[5];

char ch, srch, b[15], d[15],c;

printf("Expression terminated by $:");

while((c=getchar())!='$')

{

b[i]=c;

i++;

}

n=i-1;

printf("Given Expression:");

i=0;

while(i<=n)

{

printf("%c",b[i]);

i++;

}

printf("\n Symbol Table\n");

printf("Symbol \t addr \t type");

while(j<=n)

{

c=b[j];

if(isalpha(toascii(c)))

{

p=malloc(c);

add[x]=p;

d[x]=c;

printf("\n%c \t%d\t identifier\n",c,p);

x++;

j++;

}

else

{

ch=c;

if(ch=='+'||ch=='-'||ch=='\*'||ch=='=')

{

p=malloc(ch);

add[x]=p;

d[x]=ch;

//printf("\n%c \t %d \t operator\n",ch,p);

x++;

j++;

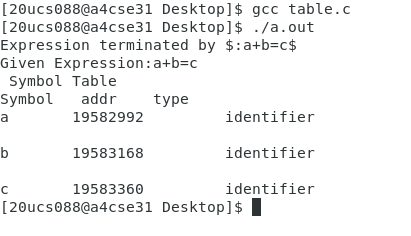
}

}

}

}

**OUTPUT:**



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**Program:** Develop lexical analyzer to recognize a few patterns in C

#include<stdlib.h>

#include<stdio.h>

#include<string.h>

void main()

{

int kflag=0;

int i;

//Keyword String array declaration and definition

char key[10][10]={"int","return","char"};

//Special pointer String array declaration and definition

char sp[10][10]={";",","};

//Bracket Strilng array declaration and definition

char b[10][10]={"(",")","{","}"};

//Operator String array declaration and definition

char op[10][10]={"+","="};

char \*str=malloc(sizeof(char));

//File Pointer

FILE\*fp;

//Read input from file Input and store it iln fp

fp=fopen("input.txt","r");

//Execute loop until end of file

while(!feof(fp))

{

fscanf(fp,"%s",str);

for(i=0;i<3;i++)

{

if(strcmp(str,key[i])==0)

{

printf("%s-Keyword\n",str);

kflag=1;

break;

}

}

for(i=0;i<3;i++)

{

if(strcmp(str,sp[i])==0)

{

printf("%s-Delimitors\n",str);

break;

}

}

for(i=0;i<3;i++)

{

if(strcmp(str,b[i])==0)

{

printf("%s-Brackets\n",str);

break;

}

}

for(i=0;i<3;i++)

{

if(strcmp(str,op[i])==0)

{

printf("%s-Operators\n",str);

break;

}

}

int i=0,d=0;

if(isdigit(str[i]))

{

d++;

for(i=1;i<strlen(str);i++)

{

if(isdigit(str[i]))

d++;

}

}

if(d==strlen(str))

{

printf("%s-Constant\n",str);

}

//kflag is used to separate keywords and identifiers

if(kflag!=1)

{

i=0;

d=0;

if(isalpha(str[i]))

{

d++;

for(i=1;i<strlen(str);i++)

{

if(isdigit(str[i])||isalpha(str[i])||strcmp(str,"\_"))

d++;

}

if(d==strlen(str))

printf("%s-Identifier\n",str);

}

}

kflag=0;

}

}

**input.txt :**

int add()

{

int a=10;

int b=10;

int c=a+b;

return c;

}

**OUTPUT:**

