EXPERIMENT NO. 4

Design and implement a lexical analyzer for given language

Source Code:

#include<stdio.h>

#include<ctype.h>

#include<stdio.h>

void keyword(char str[10]){

if(strcmp(“for”, str)==0 || strcmp(“while”, str)==0 || strcmp(“do”, str)==0 || strcmp(“int”, str)==0 || strcmp(“float”, str)==0 || strcmp(“double”, str)==0 || strcmp(“static”, str)==0 || strcmp(“switch”, str)==0 || strcmp(“case”, str)==0)

printf(“\n%s is a keyword”, str);

}

else{

printf(“\n%s is an identifier”, str);

}

main(){

FILE \*f1, \*f2, \*f3;

char c, str[10], st1[10];

int num[100], lineno=0, tokenvalue=0, i=0, j=0, k=0;

printf(“\nEnter the c Program: ”);

f1=fopen(“input”, “w”);

while((c=getchar())!=EOF){

if(isdigit(c)){

tokenvalue=c-‘0’;

c=getc(f1);

while(isdigit(c)){

tokenvalue\*=10+c-‘0’;

c=getc(f1);

}

num[i++]=tokenvalue;

ungetc(c, f1);

}else if(isalpha(c)){

putc(c, f2);

c=getc(f1);

while(isdigit(c) || isalpha(c) || c=='\_' || c=='$'){

putc(c,f2);

c=getc(f1);

}

putc(' ',f2);

ungetc(c,f1);

}

else if(c==' '||c=='\t')

printf(" ");

else if(c=='\n')

lineno++;

else

putc(c,f3);

}

fclose(f2);

fclose(f3);

fclose(f1);

printf("\nThe no's in the program are");

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

printf("%d",num[j]);

printf("\n");

f2=fopen("identifier","r");

k=0;

printf("The keywords and identifiersare:");

while((c=getc(f2))!=EOF)

{

if(c!=' ')

str[k++]=c;

else

{

str[k]='\0';

keyword(str);

k=0;

}

}

fclose(f2);

f3=fopen("specialchar","r");

printf("\nSpecial characters are");

while((c=getc(f3))!=EOF)

printf("%c",c);

printf("\n");

fclose(f3);

printf("Total no. of lines are:%d",lineno);}

OUTPUT:

Enter the c Program: a+b\*c

The no’s in the program are

The keywords and identifiers are:

a is an identifier

b is an identifier

c is an identifier

Special characters are+\*

Total no. of lines are:1