**PRACTICAL-3**

**Aim : Write a C program to develop a lexical analyzer to recognize a few tokens in C.(Note: Read the small C program from file and recognize a tokens like Identifiers, Operators, Comments, Constants, Special Symbols etc.)**

**Code:**

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<ctype.h>

int isKeyword(char buffer[]){

char keywords[32][10] = {"auto","break","case","char","const","continue","default",

"do","double","else","enum","extern","float","for","goto",

"if","int","long","register","return","short","signed",

"sizeof","static","struct","switch","typedef","union",

"unsigned","void","volatile","while"};

int i, flag = 0;

for(i = 0; i < 32; ++i){

if(strcmp(keywords[i], buffer) == 0){

flag = 1;

break;

}

}

return flag;

}

int main(){

char ch, buffer1[100], buffer2[100], operators[] = "+-/%=", special\_char[] = "!@#$%^&(){}[];:<>?/\\"; // \"\'";

FILE \*fp;

int i,j=0,k=0, l=0;

fp = fopen("code.c","r");

if(fp == NULL){

printf("error while opening the file\n");

exit(0);

}

while((ch = fgetc(fp)) != EOF){

for(i = 0; i < 6; ++i){

if(ch == operators[i])

printf("%c is operator\n", ch);

}

for(i = 0; i < 23; ++i){

if(ch == special\_char[i])

printf("%c is special character\n", ch);

}

if(isalpha(ch) || ch == '\"' || ch == '\''){

buffer1[j++] = ch;

}

else if((ch == ' ' || ch == '\n' || ch == '=' || ch == '(' || ch == ';') && (j != 0)){

buffer1[j] = '\0';

j = 0;

if(isKeyword(buffer1) == 1)

printf("%s is keyword\n", buffer1);

else if(buffer1[0] == '\"')

printf("%s is string\n", buffer1);

else if(buffer1[0] == '\'')

printf("%s is character\n", buffer1);

else

printf("%s is identifier\n", buffer1);

}

if(isdigit(ch) || ch == '.'){

buffer2[k++] = ch;

}

else if((ch == '\n' || ch == '=' || ch == ';') && (k != 0)){

buffer2[k] = '\0';

k=0;

printf("%s is constant\n",buffer2);

}

}

fclose(fp);

return 0;

}

**Input**

void ex()

{

int b=10;

printf("%d hello",b);

}

**Output**

