CS431 COMPILER DESIGN LAB

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| **ROLL NO** | **TOC18CS010** |
| **DATE** | **28/07/2021** |
| **EXPERIMENT NO:** | **1** |
| **NAME OF EXPERIMENT:** | **Lexical Analyzer** |

# QUESTIONS:

Design and implement a lexical analyzer for given language using C and the lexical analyzer should ignore redundant spaces, tabs and new lines.

# PROGRAM CODE:

#include<string.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("char",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);

}

void main()

{

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

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

int num[100], lineno=0, tokenvalue=0,i=0,j=0,k=0; printf("\nEnter the c program");

f1=fopen("input", "w");

gets(s);

fputs(s,f1); fclose(f1);

f1=fopen("input","r"); f2=fopen("identifier", "w"); f3=fopen("specialchar","w"); while((c=getc(f1)) !=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==';') 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 identifiers are: "); 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);

}

# SCREENSHOT OF OUTPUT







