

## CD LAB 2 LEXICAL ANALYZER FOR SUBSET ON C LANGUAGE

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BE E 66 (BATCH 3)

```
%{
#include <stdio.h>

int linen = 0;
%}

letter [a-zA-Z]
digit [0-9]
blank [ \b\t]
nline [\n]
%%

""[a-zA-Z_]" {printf("::Char Const detected %s\n",yytext);}
{digit}+ {printf("::Integer Const detected %s\n",yytext);}
{digit}+"."{digit}+ {printf("::Float Const detected %s\n",yytext);}

\[^\"]*\" {printf("::String Literal detected %s\n",yytext);}

"if"|"else"|"while"|"int"|"float"|"double" { printf("Keyword detected: %s\n",yytext);}

"#include" {printf("::Preprocessor Directive Include detected %s\n",yytext);}

"#define" {printf("::Preprocessor Directive define detected %s\n",yytext);}

"//".* {printf("::Single Line Comment detected %s\n",yytext);}

"/"([^*]*[*^\\])*"/" {printf("::Multiple Line Comment detected %s ::Comment Ended\n",yytext);}

"=" {printf("::Assignment operator detected %s \n",yytext);}

"=="|"!=" {printf("::Relational operator detected %s \n",yytext);}

"="|"+"| "-"| "/"| "*" {printf("::Arithmetic operator detected %s \n",yytext);}

"&&"|"|" {printf("::Logical operator detected %s \n",yytext);}

"&"|"|" {printf("::Bitwise operator detected %s \n",yytext);}

";"|"|" {printf("::delimiter detected %s \n",yytext);}
```

## CD LAB 2 LEXICAL ANALYZER FOR SUBSET ON C LANGUAGE

```
{letter}({letter}|{digit})* { printf("::variable detected: %s\n",yytext);}
"{"|"}"|"{"|"}" {printf("::Bracket Detected %s \n",yytext);}
"++" {printf("::Increment Detected %s \n",yytext); }
"--" {printf("::Decrement Detected %s \n",yytext); }

"?"/[^:]*":" {printf("::Ternary Detected %s \n",yytext); }

{newline} { ++linen; }

{blank}+ {printf("::WhiteSpace detected %s \n",yytext);}

. {printf("::Lex Error NOT DETECTED %s LINE No.%d\n",yytext,linen);}

%%

int main(){

    stdin=fopen("in","r");

    stdout=fopen("out","w");

    yylex();

    return 0;

}
```

### INPUT

```
#include <stdio.h>

{

char a,b,c='a';

int a=4;

float a=5.5;

char a[34];

//char a[]="sdfS",b[]="sdfsdF";

printf("%d",5) printf("%d",5);

/*

fgfgfgsdg
```

## CD LAB 2 LEXICAL ANALYZER FOR SUBSET ON C LANGUAGE

sdgsdg

sdgg

\*/

printf("%d",5);

b=a+4;

b&&a

a==b?sfs?df: :sdf;

}

/\*

\*/

### OUTPUT

::Preprocessor Directive Include detected #include

::WhiteSpace detected

::Lex Error NOT DETECTED < LINE No.0

::variable detected: stdio

::Lex Error NOT DETECTED . LINE No.0

::variable detected: h

::Lex Error NOT DETECTED > LINE No.0

::Bracket Detected {

::variable detected: char

::WhiteSpace detected

::variable detected: a

::delimiter detected ,

::variable detected: b

::delimiter detected ,

::variable detected: c

::Assignment operator detected =

## CD LAB 2 LEXICAL ANALYZER FOR SUBSET ON C LANGUAGE

::Char Const detected 'a'  
::delimiter detected ;  
Keyword detected: int  
::WhiteSpace detected  
::variable detected: a  
::Assignment operator detected =  
::Integer Const detected 4  
::delimiter detected ;  
Keyword detected: float  
::WhiteSpace detected  
::variable detected: a  
::Assignment operator detected =  
::Float Const detected 5.5  
::delimiter detected ;  
::variable detected: char  
::WhiteSpace detected  
::variable detected: a  
::Lex Error NOT DETECTED [ LINE No.5  
::Integer Const detected 34  
::Lex Error NOT DETECTED ] LINE No.5  
::delimiter detected ;  
::Single Line Comment detected //char a[]="sdfS",b[]="sdf sdf";  
::variable detected: printf  
::Bracket Detected (  
::String Literal detected "%d"  
::delimiter detected ,  
::Integer Const detected 5  
::Bracket Detected )  
::WhiteSpace detected  
::variable detected: printf

## CD LAB 2 LEXICAL ANALYZER FOR SUBSET ON C LANGUAGE

::Bracket Detected (  
::String Literal detected "%d"  
::delimiter detected ,  
::Integer Const detected 5  
::Bracket Detected )  
::delimiter detected ;  
::Multiple Line Comment detected /\*  
fgfgfgsdg  
sdgsdg

sdgg  
\*/ ::Comment Ended  
::variable detected: printf  
::Bracket Detected (  
::String Literal detected "%d"  
::delimiter detected ,  
::Integer Const detected 5  
::Bracket Detected )  
::delimiter detected ;  
::variable detected: b  
::Assignment operator detected =  
::variable detected: a  
::Arithmetic operator detected +  
::Integer Const detected 4  
::delimiter detected ;  
::variable detected: b  
::Logical operator detected &&  
::variable detected: a

## CD LAB 2 LEXICAL ANALYZER FOR SUBSET ON C LANGUAGE

::variable detected: a

::Relational operator detected ==

::variable detected: b

::Ternary Detected ?

::variable detected: sfs

::Ternary Detected ?

::variable detected: df

::Lex Error NOT DETECTED : LINE No.15

::WhiteSpace detected

::Lex Error NOT DETECTED : LINE No.15

::variable detected: sdf

::delimiter detected ;

::Bracket Detected }

::Multiple Line Comment detected /\*

\*/ ::Comment Ended