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Lab Cycle 1 - Experiment 2

Write a program to implement a Lexical Analyzer for a given program using Lex Tool.

Code:

```
%{
int COMMENT=0;
%}
identifier [a-zA-Z][a-zA-Z0-9]*
%%
#.* {printf("\n%s is a preprocessor directive",yytext);}
int |
float |
char |
double |
while |
for |
struct |
typedef |
do |
if |
break |
continue |
void |
switch |
return |
else |
goto {printf("\n\t%s is a keyword",yytext);}
"/*" {COMMENT=1;}{printf("\n\t %s is a COMMENT",yytext);}
{identifier}\( {if(!COMMENT)printf("\nFUNCTION \n\t%s",yytext);}
\{ {if(!COMMENT)printf("\n BLOCK BEGINS");}
\} {if(!COMMENT)printf("BLOCK ENDS ");}
{identifier}(\[[0-9]*\])? {if(!COMMENT) printf("\n %s
IDENTIFIER",yytext);}
\".*\" {if(!COMMENT)printf("\n\t %s is a STRING",yytext);}
[0-9]+ {if(!COMMENT) printf("\n %s is a NUMBER ",yytext);}
\)(\:)? {if(!COMMENT)printf("\n\t");ECHO;printf("\n");}
\(\ ECHO;
= {if(!COMMENT)printf("\n\t %s is an ASSIGNMENT OPERATOR",yytext);}
\<= |
\>= |
\< |
```

```

== |
\> {if(!COMMENT) printf("\n\t%s is a RELATIONAL OPERATOR",yytext);}
%%
int main(int argc, char **argv)
{
FILE *file;
file=fopen("Program.c","r");
if(!file)
{
printf("Could not open the file\n");
exit(0);
}
yyin=file;
yylex();
printf("\n");
return(0);
}
int yywrap()
{
return(1);
}

```

Input File:

```

#include<stdio.h>

void main()
{
int num1, num2, num3;
num3 = num1 + num2;
}

```

Output:

```

● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Lexical_Analyzer_Using_Lex$ lex lexical_analyzer.lex
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Lexical_Analyzer_Using_Lex$ cc lex.yy.c
● gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Lexical_Analyzer_Using_Lex$ ./a.out

```

```

#include<stdio.h> is a preprocessor directive

```

```

    void is a keyword
FUNCTION
    main(
    )

```

```

BLOCK BEGINS

```

```

    int is a keyword
num1 IDENTIFIER,
num2 IDENTIFIER,
num3 IDENTIFIER;

```

```

num3 IDENTIFIER
    = is an ASSIGNMENT OPERATOR
num1 IDENTIFIER +
num2 IDENTIFIER;
BLOCK ENDS

```

```

○ gokz1119@gokz-Lenovo:/media/gokz1119/New Volume/S7/CD Lab/Lexical_Analyzer_Using_Lex$ _

```