

2CS701 Compiler Construction

Practical 1	
Rollno: 19BCE236	Name: Samariya Darsh
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Aim:

To implement lexical analyser to recognize all distinct token classes: use flex/lex tool to recognize all distinct token classes (Data type, Identifier, constant (Integer, Float, Char, String), Operator (Arithmetic, Relational, Assign, Unary +/-, Increment), Single line/Multi-line comments, Special symbol(,;{})) .

Generate Lexical error reports for invalid lexeme.

Program:

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

int lineno=1;

% }

%%

void|int|scanf|printf { printf("%s is a keyword",yytext);}
[0-9]+ { printf("%s is a number",yytext);}
[A-Z]+ { printf("%s is a Capital Alphabet",yytext);}
\n    { printf("%s is a new line %d",yytext,lineno++);}
[+]    { printf("%s is a Addition",yytext);}
[*]    { printf("%s is a Multiplication",yytext);}
[-]    { printf("%s is a Subtraction",yytext);}
[/]    { printf("%s is a Divison",yytext);}
[=]    { printf("%s is a Assisgnment Operator",yytext);}

%%

int main(){
yylex();
}
```

```
int yywrap(){  
return 1;  
}
```

Input File:

```
#include<stdio.h>  
  
{  
int a,b;  
printf("Enter value of a:");  
scanf("%d",&a);  
b=2*a+a;  
printf("Value of B is :%d",&b);  
}
```

Output:

```
C:\Users\hp\Desktop\CC>lex pr-1.1  
C:\Users\hp\Desktop\CC>gcc lex.yy.c  
C:\Users\hp\Desktop\CC>a.exe < pr-1text.c  
#include<stdio.h>  
is a new line 1{  
is a new line 2int is a keyword a,b;  
is a new line 3printf is a keyword("E is a Capital Alphabetnter value of a:");  
is a new line 4scanf is a keyword("%d",&a);  
is a new line 5b= is a Assisgnment Operator2 is a number* is a Multiplicationa+ is a Additiona;  
is a new line 6printf is a keyword("V is a Capital Alphabetalue of B is a Capital Alphabet is :%d",&b);  
is a new line 7}  
is a new line 8  
C:\Users\hp\Desktop\CC>
```