

# Lexical Analysis

## C Language

Reyner Marxell Arias Muñoz, Kenneth Ibarra Vargas, David Benavides  
Naranjo

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# Scanning

Since the source file has include and define directives, the preprocessor previously applied each of them correctly so that the scanner receives only a temporary input file.

Afterwards, the scanner goes through the temporary file returning the tokens one by one and in order, according to the parsed source program.

In c there are tokens of different types such as operators, identifiers, literals, reserved words and separator characters.

Any character not belonging to the c lexicon that can be parsed is returned as a lexical error.



The scanner is a lex file, which are comprised of three sections:

- The Definition Section: This section is made up of several regular expressions that act as global declarations that may be used in the next section.
- The Rules Section: This section uses the global declarations of the previous section to define what actions must be taken when a specific regular expression is found.
- The Code Section: This section is attached at the end of the lex output file and may contain any code written and executed by the C code, due to lex usually being paired with yacc.

# Tokens

- *Operators*
- **Intliterals**
- **Floatliterals**
- **Doubleliteral**
- *Charliteral*
- Stringliteral
- **Reserved Words**
- **Separator characters**
- **Identifiers**
- Errors

# Font Lines

```
int test ( ) {  
    printf ( "%d" , 1 );  
}  
int cinco = 5 ;  
int main ( ) {  
    int t = 100301 ;  
    int r = hola ( ) ;  
    char f [ 10 ] = " ;  
    int v = 1 ;  
    double r = 2.435e2 ;  
    char r = 'y' ;  
    printf ( "%s" , f ) ;  
}  
int main ( ) {  
    int t = 100301 ;  
    int r = hola ( ) ;
```

# Font Lines

```
char f [ 10 ] = " ;  
int v = 1 ;  
double r = 2.435e2 ;  
char r = 'y' ;  
printf ( "%0s" , f ) ;  
}
```