

# Lexical Analysis

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## Steps

- Find Tokens
- Recognize Tokens(Classify them)
- For each class of token we need a regular expression to identify the token belongs to the class.

Example:

Given function:

```
float limit Square(x) float x{
    /* returns x-squared,but never more than 100 */
    return (x <= -100 || x>=10.0)?100:x*x;
}
```

TOKEN SPECIFICATION	Example		
FLOAT	float		
ID	x,limitedSquare		
RETURN	return		
REAL NUMBER	10.0,100		
MULT	x		
IF(?)	?		
THEN(:)	:		
MINUS	-		
GTE	>=		
LTE	<=		
OR			
SC(semicololon)	;		
OP(open parenthesis)	(		

CP	)		
OB(open brackets)	{		
CB	}		
O COM(open comment)	/*		
C COM(closed comment)	*/		
LETTERS	[a-z A-Z]+		
DIGITS	[0-9]+		
SYMBOLS			

Regular expressions:

Regular Expression for float:

`"float"{TC=FLOAT;}`

Regular Expression for id:

`letter(letter+digits)*{TC=ID;}`

Regular Expression for "("

`"(" {TC=OP;}`

Regular Expression for ")"

`")" {TC=CP;}`

**\*\*NOTES**

In the rules to classify tokens, the regular expressions for reserved words come first.