

Token are the smallest elements of a program, which are meaningful to the compiler. and the smallest individual unit in a program.

Types of Tokens:

- a) Keyword
- b) Identifiers
- c) Literals
- d) Punctuators
- e) Strings
- f) Operators.

a) Keyword → keyword are predefined, reserved words used in programming that have special meanings to the compiler. keywords are part of the syntax and they cannot be used as an identifier.

e.g → Int, float, If, for, while, break.

b) Identifiers: "Identifiers" or "symbols" are the names you supply for variables, types, function and labels in your program. Identifiers names must differ and given to different part of the program.

• Rules for identifier.

1. It should not be a keyword.
2. It should begin with alphabet not with numbers.  
a1, b2, c3 → valid  
1a, 2b, 3c → invalid
3. No special characters are allowed except underscore (→)  
My\_file → invalid, My\_file → valid  
lower case & upper case are treated different  
A = upper case  
a = lower case

3) Literals or constant : is the literals or constants are whose value is obvious.  
are the values we write in a conventional form

Literal are four types :

a) integer literal

d) String literal.

a) Integer literal  $\rightarrow$  are numbers that do not have decimal point. or an expo

e.g  $\rightarrow$  567, 789, 245

b) float literal  $\rightarrow$  are numbers that have a decimal point.

e.g  $\rightarrow$  123.156  $\rightarrow$  float literal

c) Character literal  $\rightarrow$  It contains only one character in single quotes.

e.g  $\rightarrow$  Ch = 'A', Ch = 'B'.

d) String literal  $\rightarrow$  are more than one character given in double quotes.

e.g  $\rightarrow$  "Hello", "My friend"

4) Punctuators : are the special characters, that separate one part of the code with another part.

e.g  $\rightarrow$  ( ), { }

5) Strings : More than one character (Multiple character) are called as strings.

e.g  $\rightarrow$  "Hello", "My friend"

6) Operator : a character that represents a or specific mathematical or logical action or process

e.g  $\rightarrow$  a + b  $\rightarrow$  Operator  
 $\rightarrow$  operand

Q- What is separator or special character ~~and~~ with examples?

Ans → ① The separator characters are spaces, tabs, and commas.

② ~~The separator characters are~~

③ Commas separate operands.

④ Spaces or tabs separate the other parts of statement.

⑤ Commas used to separate package names from sub-package. class name also selects a field or method from an object.

Q- what is operands.

Ans → An operand ~~can be a const~~ is a term used to describe any object that is capable of being manipulated.

e.g →  $2 + 1$   
↓  
operands.