

# **TOKENS**

- ❑ Token is defined as each individual component of Java program that carries some meaning and takes active part in program execution.
- ❑ The smallest unit of programming language which is used to compose instructions
- ❑ Token is a set of valid characters used for writing a statement in Java program.

# TOKENS

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graph TD; TOKENS[TOKENS] --> Keywords((Keywords)); TOKENS --> Identifiers((Identifiers)); TOKENS --> Separators((Separators)); TOKENS --> Literals((Literals));
```

**Keywords**

**Identifiers**

**Separators**

**Literals**

## KEYWORDS

- A predefined word which the java compiler can understand is known as a keyword.
- Keywords are reserved words which are preserved by system.
- Every keyword in java is associated with a specific task.
- A programmer can't change the meaning of a keyword (can't modify the associated task).
- Keywords are always written in lowercase.

### EXAMPLE:

We have 50+ keywords in java,

**class, public, static, void, etc.,**

# **IDENTIFIERS:**

- The name given to the components of java by the programmer is known as identifiers.

## **LIST OF COMPONENTS:**

- class
- method
- variables
- interface
- Object, etc

**A programmer should follow the rules and conventions for an identifier.**

### **RULES OF AN IDENTIFIERS:**

- Identifiers should never start with a number.
- Identifiers should not have special characters except \_ and \$.
- Character space is not allowed in identifiers.
- We can't use keyword as an identifier.

### **CONVENTIONS:**

The coding or industrial standards to be followed by the programmer are known as conventions.

- **Compiler doesn't validate the convention, Therefore if conventions are not followed then we won't get a compile-time error.**
- **It is highly recommended to follow the convention.**

## CONVENTION FOR CLASS NAME AND INTERFACE:

- ❖ **Single word** - The first character should be in upper case remaining in lower case.

**Example:** Addition, Calculator , Sum , etc...

- ★ **Multi-word** – The first character of every word should be in upper case remaining in lower case.

**Example:** SquareRoot , PowerOfDigit , FactorialOfDigits , etc...

## CONVENTION FOR METHODS AND VARIABLES:

- ❖ **Single word** - It should be in lowercase(all characters).

**Example:** add, choice , product , etc...

- ★ **Multi-word** – The first word should be in lowercase remaining words should start with an uppercase.

**Example:** squareRoot , powerOfDigit , factorialOfDigits , etc...

# SEPARATORS

- They are special characters in Java.
- They are used to separate the variables or the characters.

E.g.:-

Comma(,)

Brackets( )

Curly brackets{ }

Square brackets [ ]

Semi colon(;)



## LITERALS :

- The values or data used in a java program is known as literals.
- They are remain unchanged during entire execution of the program

The data is generally categorized into two types

1. **Primitive values**-> Single values data are called primitive values.
2. **Non-primitive values**->The multi-valued data is known as non-primitive value (group of data).

## PRIMITIVE VALUES:

### NUMBER LITERALS:

- Integer number literals-> The whole numbers(positive or negative) are known as integer literals.

**Example :** 1 , 4 , 67 , 24 , 35 , etc...

- Floating number literals->They are the fractional numbers.

**Example :** 2.3 , 1.0 , 35.5634 , 23.53 , etc...

## **CHARACTER LITERALS:**

- A single letter, digit or any special symbol which is enclosed within a single quote ( ' ' ) is considered as a character literal.
- The length of the character literals should be one.

## **EXAMPLE:**

'a', 'G', '1', '\$', etc...

## BOOLEAN LITERALS:

- ★ Boolean literals are used to write logical values.
- ★ We have two Boolean literals
  - true
  - false

# NON PRIMITIVE VALUES:

## STRING LITERALS:

- Anything enclosed within a double quote ( “ “ ) is known as String literals. The length of the string literals can be anything.
- They are case-sensitive.

**EXAMPLE:** “hello”, “true”, “a”, “123”, “hello@”, “1.1”, etc...

Note:- A string literal can be a set of any type of characters within a limit of 256 characters.