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.

Different types of tokens are:

1. Keywords
2. Identifiers
3. Literals
4. Separator
5. Operator

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.

Operators

*They are symbols.
*They are used for specific task, like calculation.
 Eg:-+,-,*,/,%,<,>,>=,<=,==,=, &&,||,!