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Selenium Java Training - Session 4 - Java (Part 2) - Understanding Java programs, Variables, Data Types, Literals and Operators

Java (Part 2) - Understanding Java Programs, Variables, Data Types, Literals and Operators

Understanding Java Programs

- In Java programs, we have to enclose everything inside a Class.
 - Syntax: `public class ClassName { }`
 - This class term is used as syntax to create/define a Class in Java
- In Java programs, execution starts from the main method
 - Syntax of main() method - `public static void main(String args[]){ }`
- All the Java statements in Java should end with ';' symbol
 - Example for a Java Statement is nothing but print statement - `System.out.println("Hello World");`
- All the Java statements should be written inside the methods
 - We generally write code which is nothing but a set of statements inside the methods
- Keywords like public, static, void and String args[] will be explained later

Compiler Errors

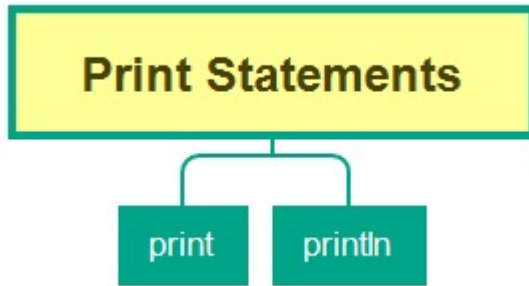
Java Compiler Errors will be displayed when we make syntax mistakes in the Java Code:

- Example: All the Java statements in Java should end with ';' symbol
 - Remove the ; from the end of Java Statement
- Example: Java is case sensitive
 - Replace 'S' with 's' in the statement
- Example: Remove any of the closing brace

Print Statements

Print statements in Java are used to print the program output to the console.

- The below are the two types of print statements in Java:



- Demonstrate print statements
- Demonstrate println statements
- Demonstrate printing a number and text
- Eclipse IDE shortcuts for writing print statements
 - Sysout + Ctrl + Space
 - Syso + Ctrl + Space

Comments

Comments provided in a Java program won't be executed and are generally used to explain the underlined code.

- The below are the two types of comments in Java:



- Demonstrate single line comments
 - Syntax: **// Sample Comment Text**
- Demonstrate multi line comments
 - Syntax: **/* Sample Comment Text */**

Variables, Data Types, Operators and Literals

In order to **store the data** in Java programs, we need to use Variables, Data Types, operators and Literals.

- Example: **int a = 5;**
 - Refer more details [here](#)
- Demonstrate a program which stores the data into a variable and prints it

Variables

Variable is a name provided to a reserved memory location.

- Refer more details [here](#)

Data Types

We can define the variables with different Data types, based on the type of data to be stored.

- The below are the different data types in Java:
 - byte
 - short
 - **int**
 - Assigning another value to the same variable
 - Creating multiple variables of the same data type
 - long
 - **double**
 - float
 - **char**
 - **boolean**

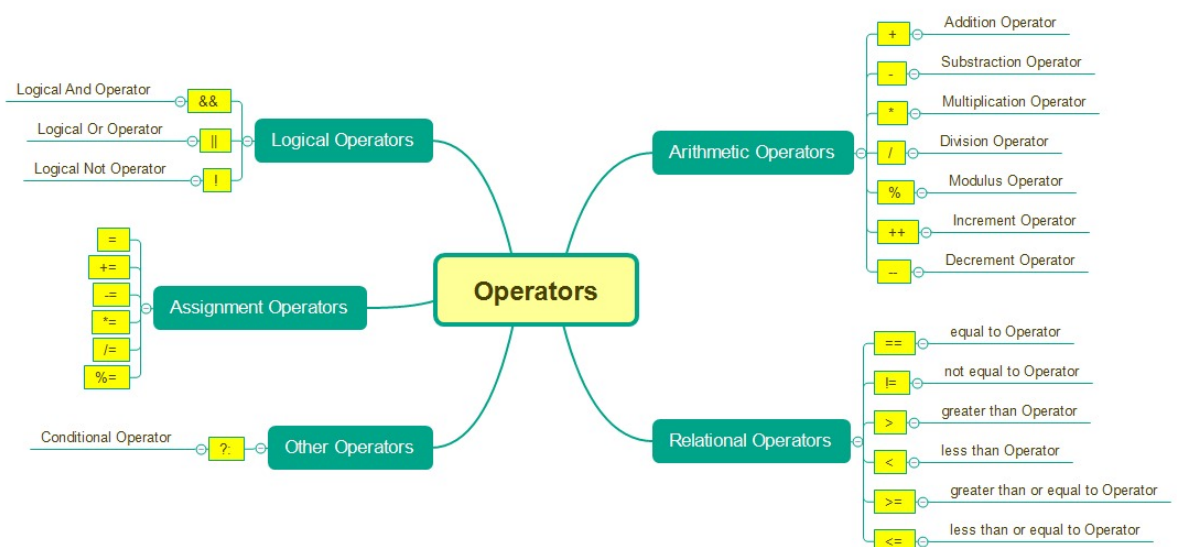
String is not a data type in Java

- String is a predefined class in Java

Operators

Operators are just symbols used to perform operations on the provided data.

- The below are the different types of Operators in Java:



- Demonstrate all Operators [here](#)

Literals

Literals in Java are the representation of numeric, boolean, string and character data

- Integer Literals - Numerical values in the range of -2147483648 to 2147483647
- Long Literals - Numerical values in the range of -9223372036854775808 to 9223372036854775807L
- Floating Point Literals - Example: 123.456F
- Double Literals - Example: 123.456
- Boolean Literals - true or false
- Character Literals - Example: 'S'
- String Literals - Example: "Hello World"

Printing Numerical and String literals using print statements and the combination of literals.

Miscellaneous

- Warning messages will be displayed for unused variables to represent wastage of memory.
- Trying to print the variable which is not assigned with any value
 - Default initialization values - 0, null, false
- Trying to print the variables before declaration and assignment of values

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