JAVA

Course Syllabus

Programming in Java

Java

➡Outline :-

1. History of Java.
2. Features of Java.
3. First Sample Program
4. Basic concepts in Java

TOPIC 1

HISTORY OF JAVA PROGRAMMING LANGUAGE

➡ History of Java

- Java was created by a team of engineers called the "Green Team" led by James Gosling in 1991.

- The 1st version of Java JDK1.0 was released in 1995.

- Java name was chosen by James Gosling while having coffee near his office (Java is an island of Indonesia where first coffee was produced).

TOPIC 2

Features In JAVA

➡ Features of Java

- Simple
- Both compiled and interpreted
- Platform-Independent and Portable
- Object Oriented Programming Language
- Robust and Secured
- High Performance
- Multithreaded and Distributed
- Dynamic

➡ Features of Java

- **Java is simple**:- because its coding syntax is very easy to understand and also its syntax is very similar to C and C++. It does not use complex and different features like C and C++.

- **Java is both compiled and interpreted**:- because its source code is first compiled into a binary byte code which runs on the Java Virtual Machine (JVM) and JVM is a kind of interpreter.

- **Java is platform independent and portable**:- because the binary byte code can run on all operating systems but the JVM is platform dependent.

- **Java is an Object Oriented Programming language**:- because everything in java is an object, all the program resides within classes and objects.

- **Java is robust and secure**:- because it has a strong memory management system and it is capable of handling run-time errors, supports automatic garbage collection and exceptional handling and avoids explicit pointer concept. Java codes are executed in a JVM that checks byte code every time which provides extra safety.

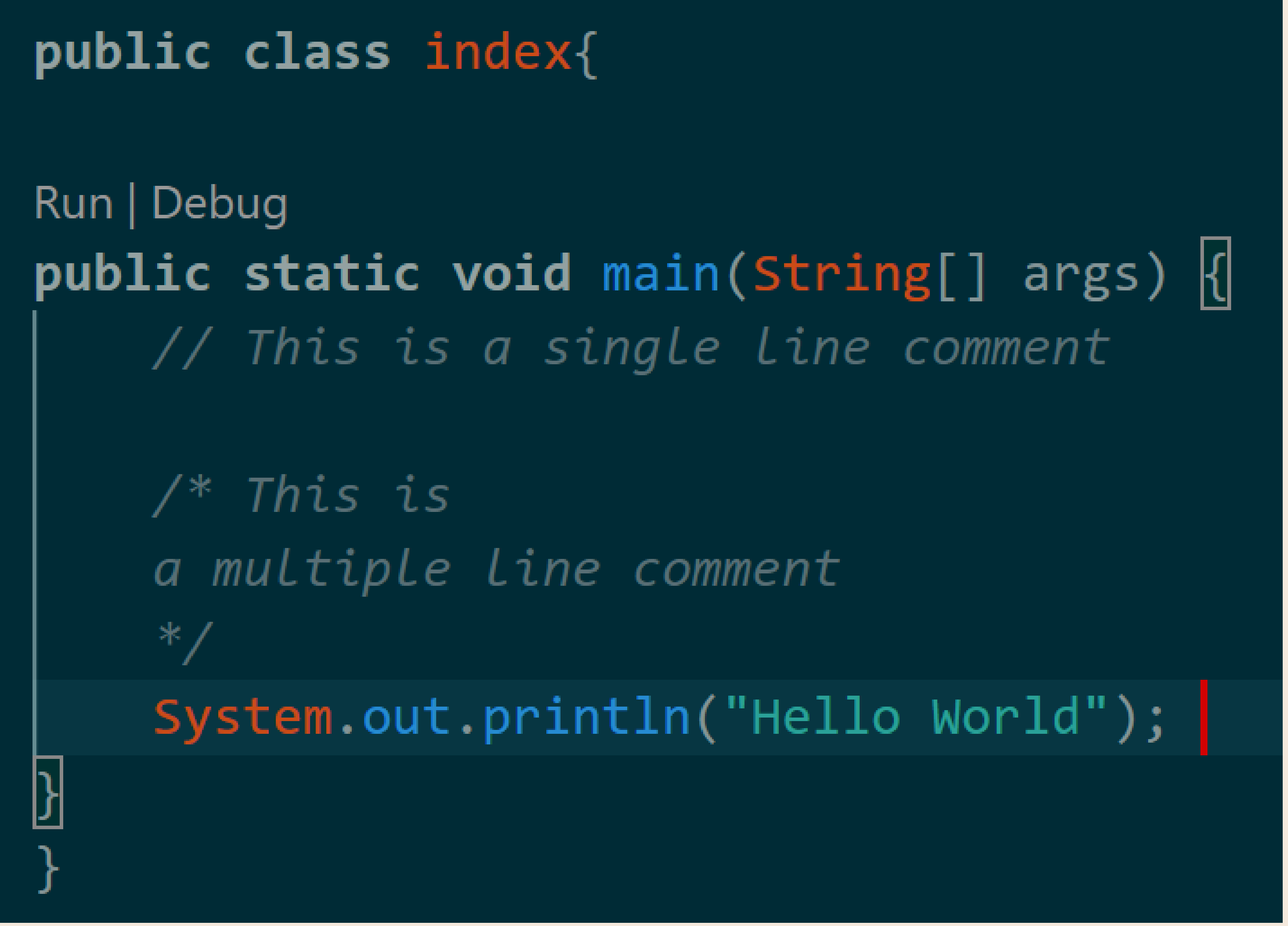
➡ Features of Java

- **Java has high performance**:- because it uses Just-In-Time compiler to enable high performance. Just-In-Time compiler is a component of the JRE that improves the performance of Java applications at run time.

- **Java is dynamic**:- because of byte code [a class file]. A source code written in one platform which can be executed in any platform.

TOPIC 3

First Sample Java Program (Hello World Program)



```
public class index{

Run | Debug
public static void main(String[] args) {
    // This is a single line comment

    /* This is
    a multiple line comment
    */
    System.out.println("Hello World");
}
}
```

1. **Starting Class**

public class index {.....}

In Java every program begins with a class. So, we have named our class index.

2. **The main() method**

public static void main (String[] args) {......}

The main() method is the entry point of the program. A valid Java program must include this method.

3. **System.out.println()**

System.out.println("Hello World")

This code prints the text Hello World.

➡Brief Discussion of Java Syntax:-

- **public class index**:- This creates a class index. A class is a collection of variables and methods. Every Java program will have at least 1 class. Public is a type of accessifier which is accessible from any other class.

- **Comments**:- This is a line of code which is ignored by java compiler and it is not executed. Comments are written after // (single line comment) and b/w /* */ (multi line comment).

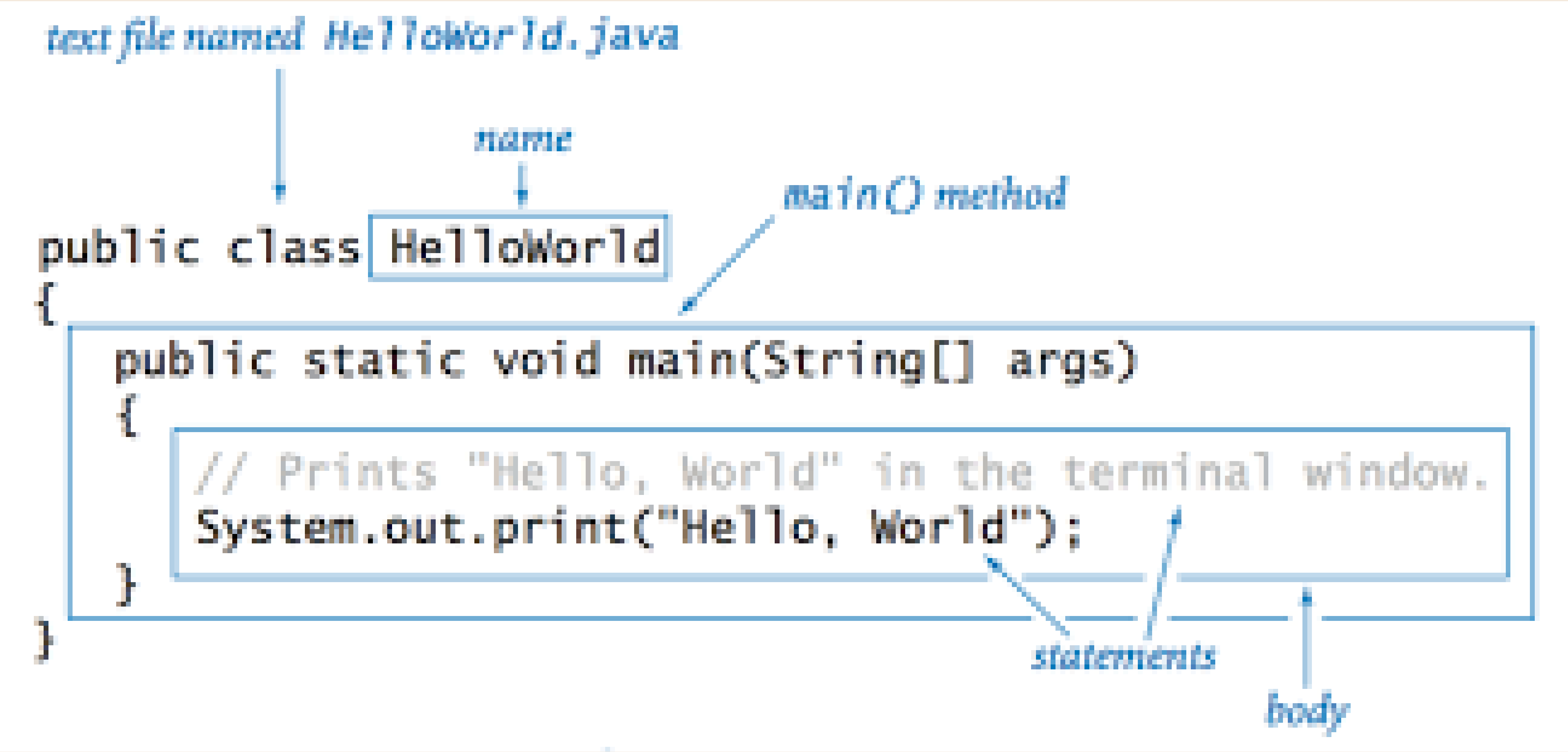
- **Braces**:- The curly brackets are used to group all the commands together and to make sure that the commands belongs a particular class or method.

- **public static void main()**:- Public is a type of accessifier. The word static means that we want to access a method without creating any objects. The word void means that main does not return any value and main is a method which is compulsory in every java program.

➡ Brief Discussion of Java Syntax:-

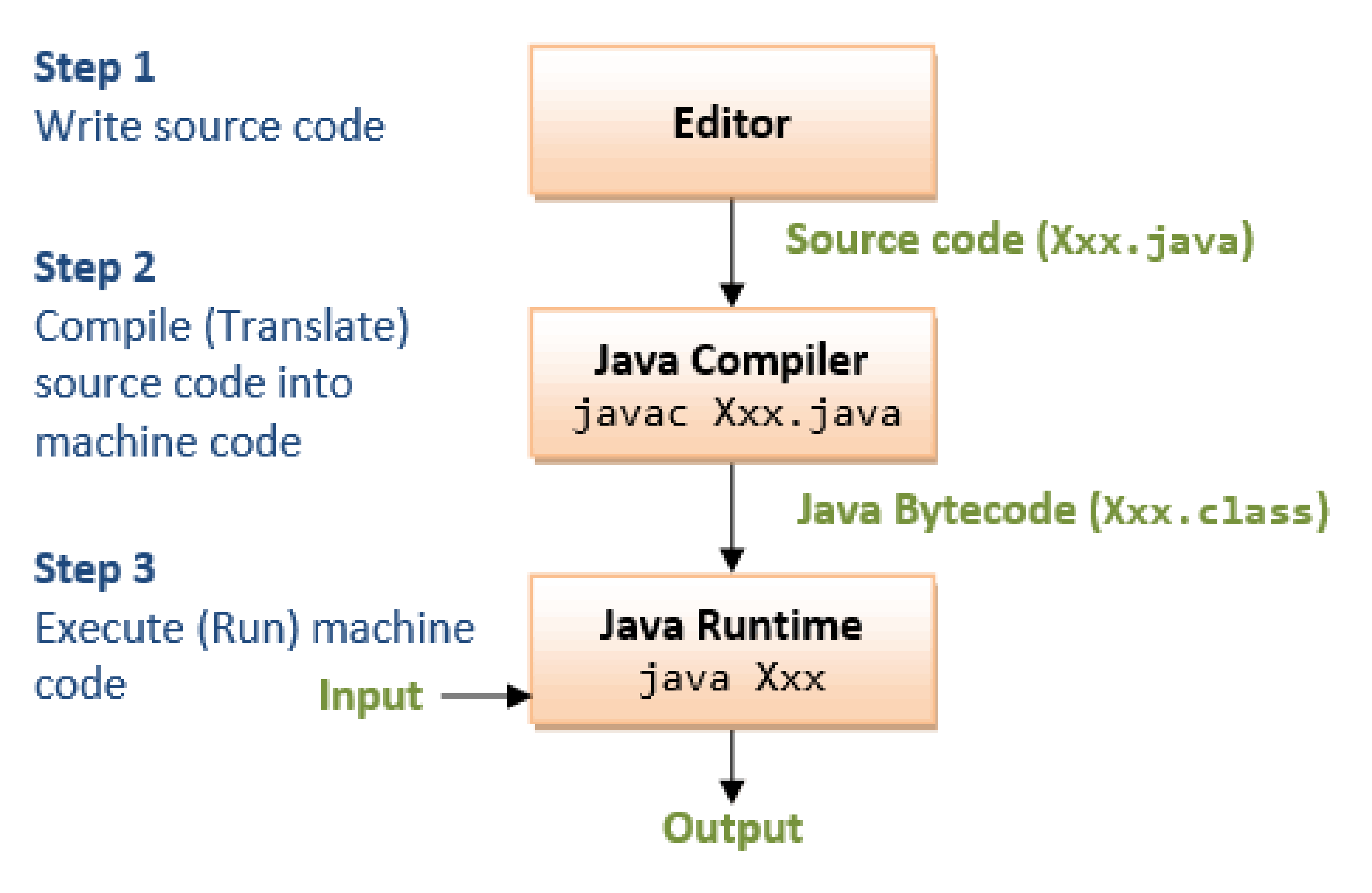
- **String[] args**:- It is an array where each element is a string, which is named as args.

- **System.out.println:-** This is used to print the output on the screen. System is a pre-defined class, out is an object of the PrintWriter class and the method println prints the text on the screen in a new line.



```
public class HelloWorld
{
   public static void main(String[] args)
   {
      // Prints "Hello, World" in the terminal window.
      System.out.print("Hello, World");
   }
}
```

➡ Editing, Compiling and Executing:-



Step 1
Write source code

Step 2
Compile (Translate) source code into machine code

Step 3
Execute (Run) machine code

TOPIC 4

Basic Concepts in Java

- **Class names**:- In Java, the first letter of class name for every class should be uppercase. For example, a class salary will be named as per the convention as "Salary".

- **Method name**:- All method names in Java start with a lowercase letter. If the method name comprises more than one word, then the first letter of each of these inner words will be uppercase.

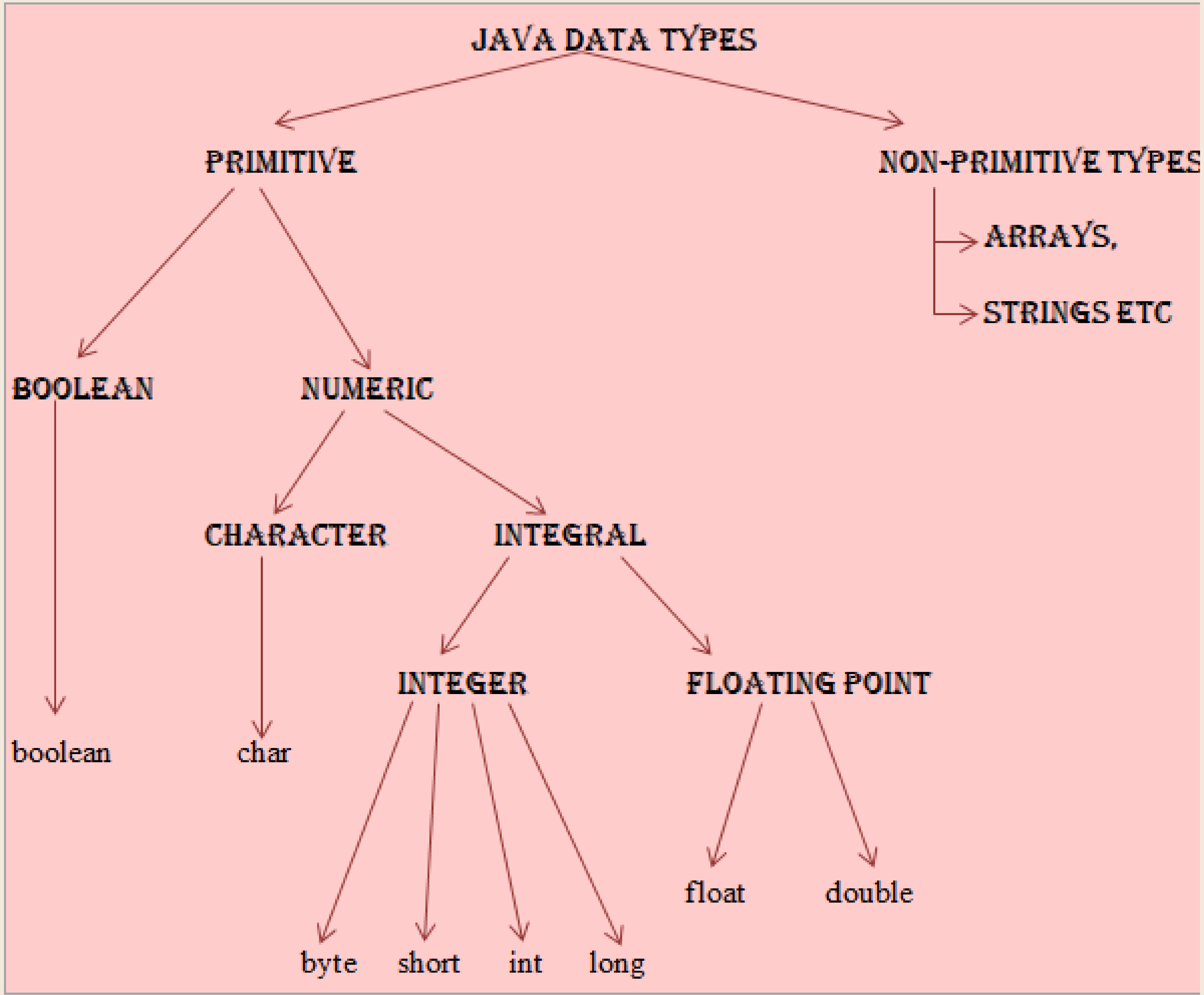
Example: display (), myMethod () => these are valid method names in Java.

- **Program file name**:- The filename of the Java program should be the same as the name of the public class with an extension ".java".

For example, if the public class name is "MyFirstClass", then you save this code in the file named "MyFirstClass.java".

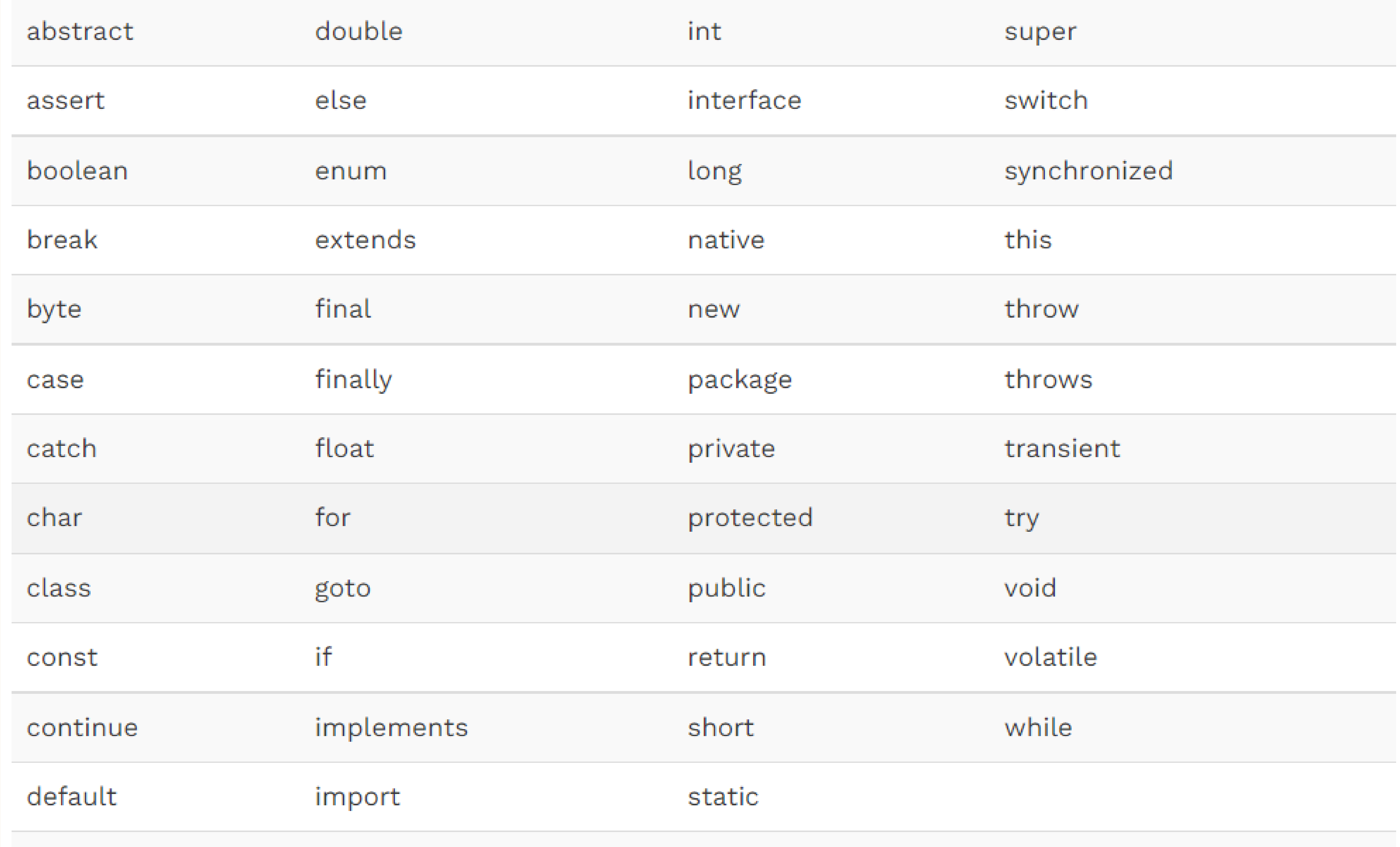
- **Case sensitive language**:- In Java "variable" and "Variable" has different meaning.

➡ Data types in Java:-



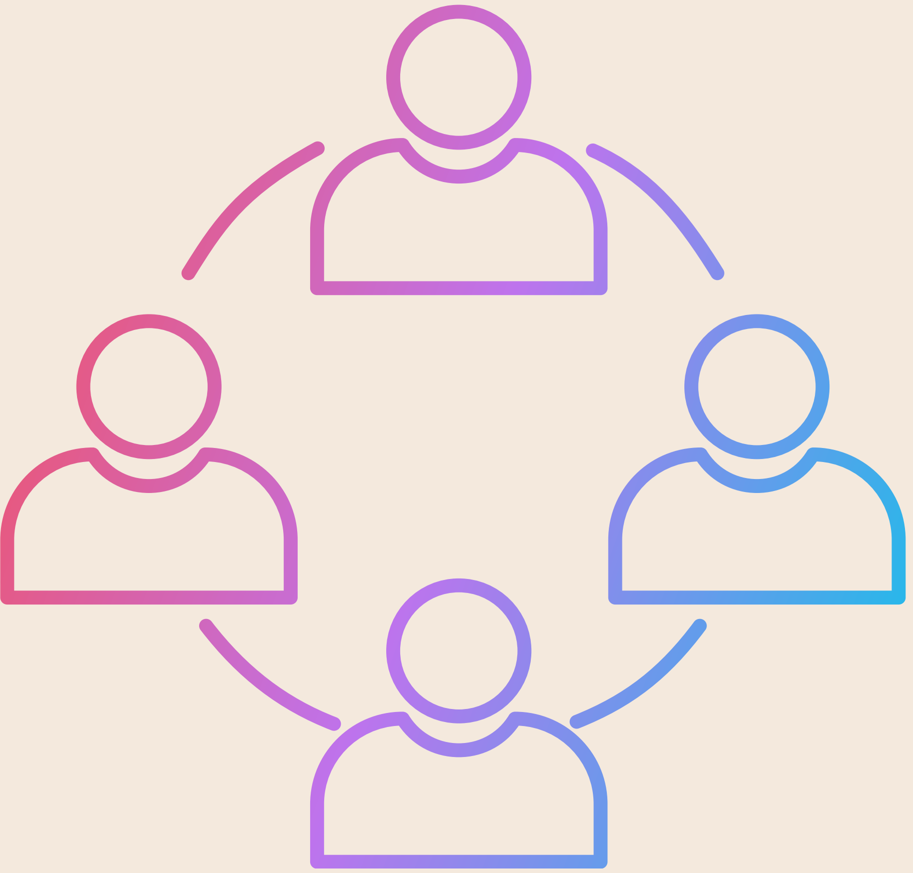
➡ Keywords in Java:-

There are certain words reserved in Java language for its own use and cannot be used as variable or identifier names.



abstract	double	int	super
assert	else	interface	switch
boolean	enum	long	synchronized
break	extends	native	this
byte	final	new	throw
case	finally	package	throws
catch	float	private	transient
char	for	protected	try
class	goto	public	void
const	if	return	volatile
continue	implements	short	while
default	import	static	

Thank You



SCRIBE 1

MADE BY TEAM 1

~ASHISH (AD-1221)

~AVISHKAR (AD-1224)

~DEEPAK (AD-1234)

~PRIYANSHU (AD-1274)

~SUMIT (AD-1294)