



THIRUTHANGAL NADAR COLLEGE

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Selavayal, Chennai-51.

A Self-Financing Co-educational College of Arts & Science

Affiliated to the University of Madras

Accredited with 'B' Grade by NAAC

An ISO 9001: 2015 Certified Institution

NAME OF THE DEPARTMENT: BCA (SHIFT-I)

SUBJECT : PROGRAMMING IN JAVA

TOPIC : INTRODUCTION TO JAVA

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UNIT I

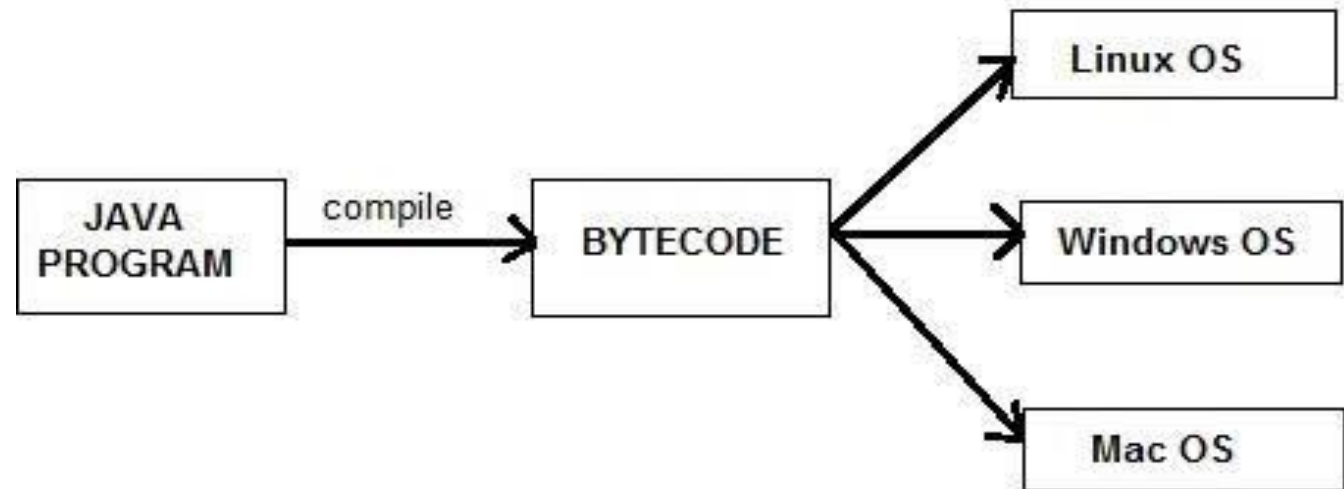


- Introduction to Java
- Features of Java
- Basic Concepts of Object Oriented Programming
- Java Tokens
- Java Statements
- Constants
- Variables
- Data Types
- Type Casting
- Operators
- Expressions
- Control Statements: Branching and Looping Statements.

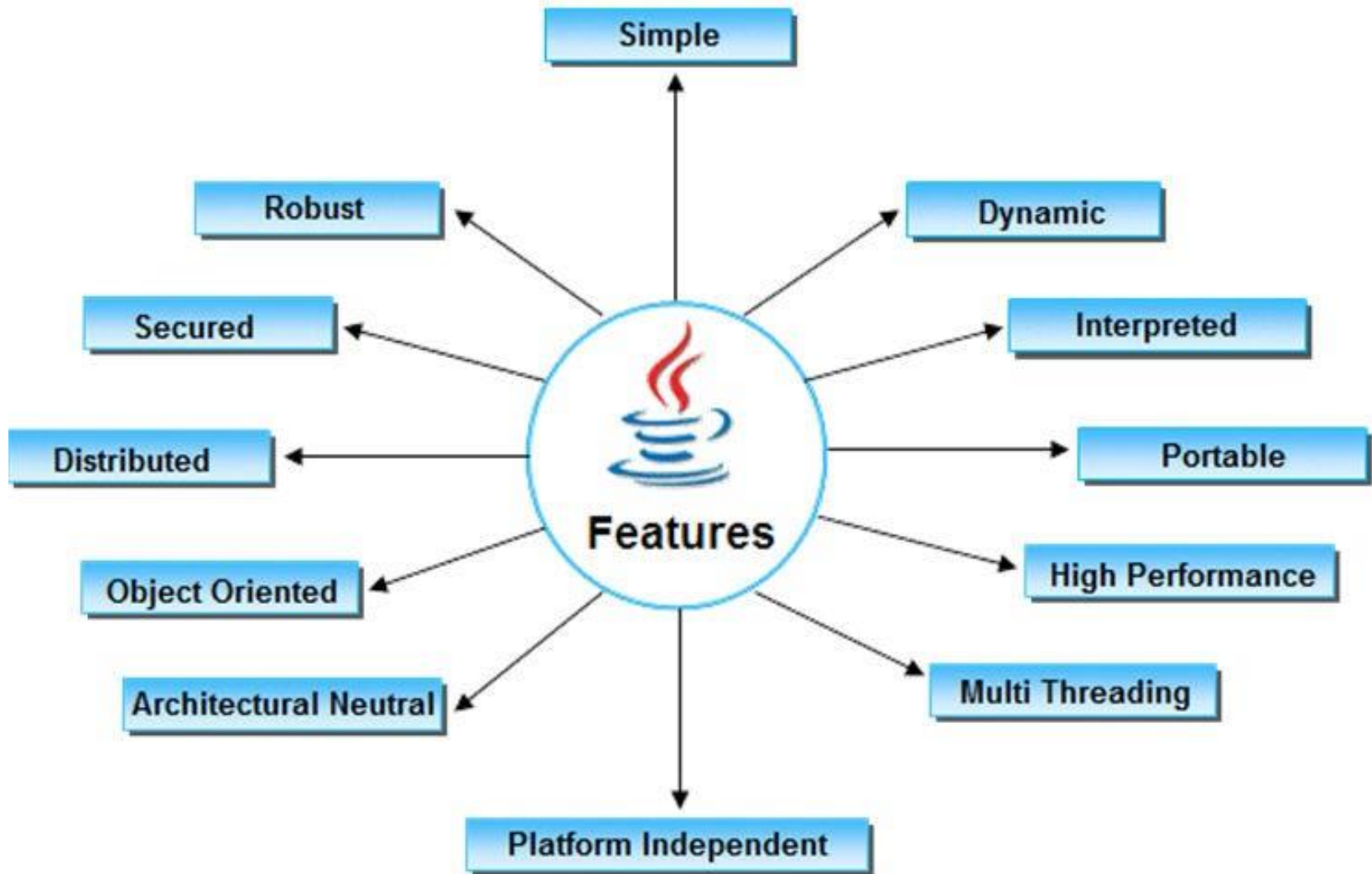
Introduction to JAVA Programming



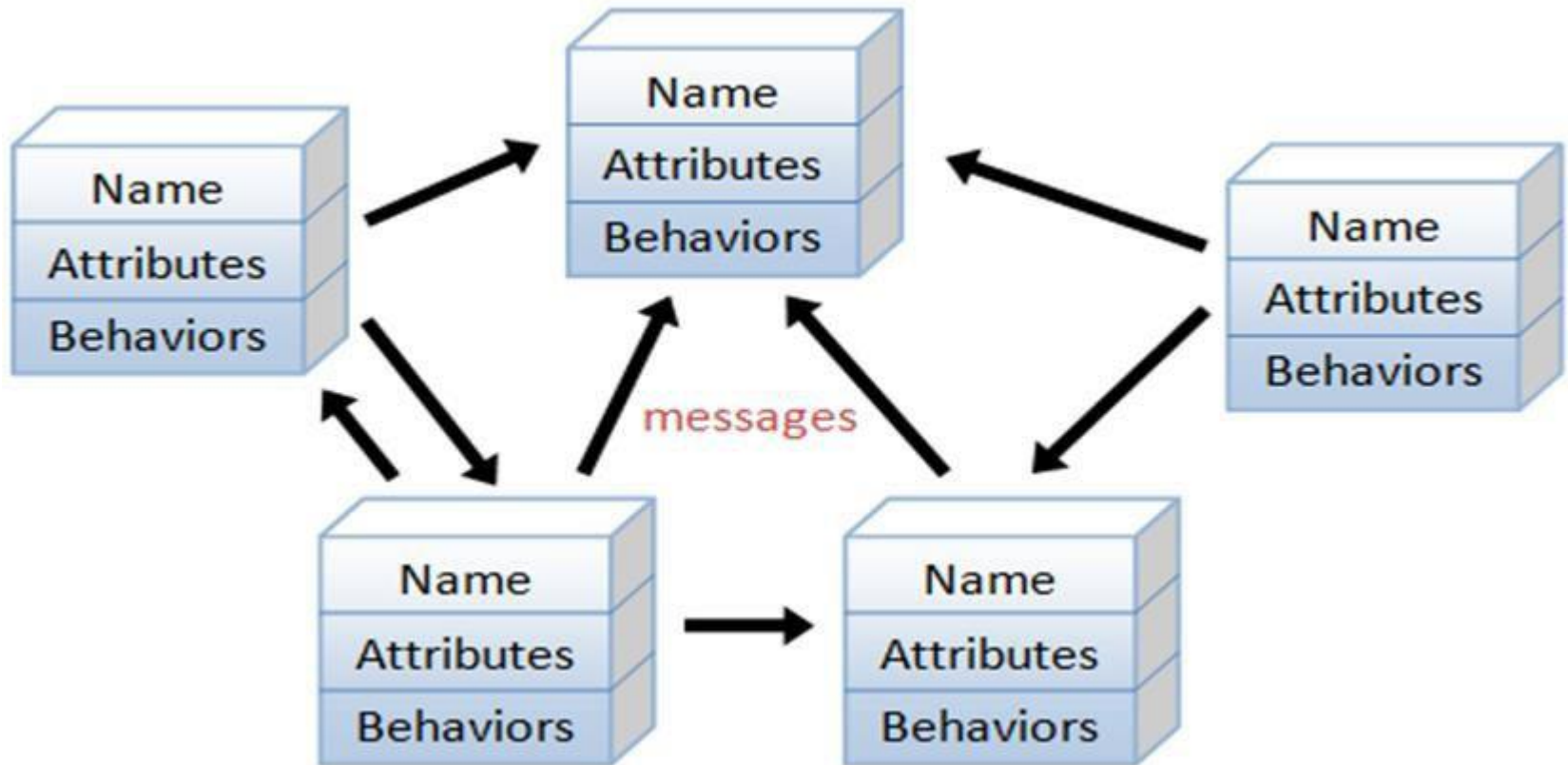
- James Gosling and Sun Microsystems
- Oak
- Java, May 20, 1995, Sun World
- HotJava : The first Java-enabled Web browser
- JDK Evolutions : J2SE, J2ME, and J2EE



Features of JAVA Programming



Object Oriented Programming



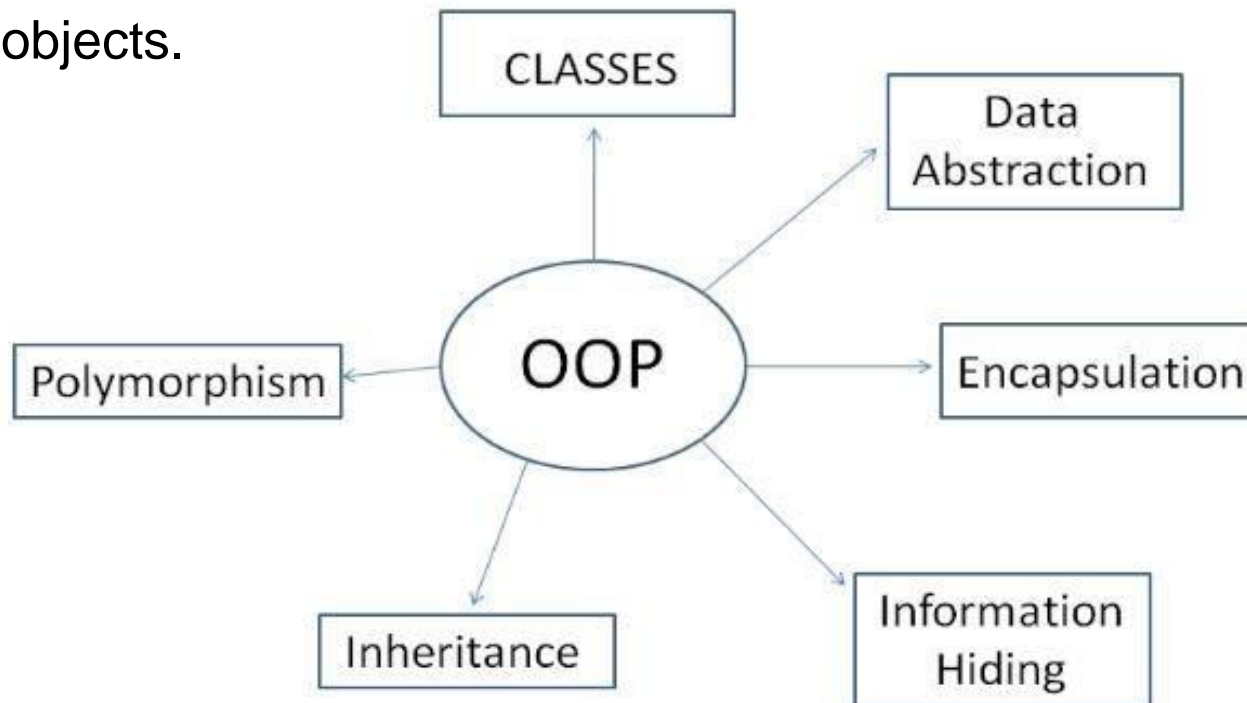
An object – Oriented Programming consists of many well-encapsulated objects and the objects interact with each other by sending messages.

Object Oriented Programming Concepts



→ An object contains both data and methods that manipulate that data

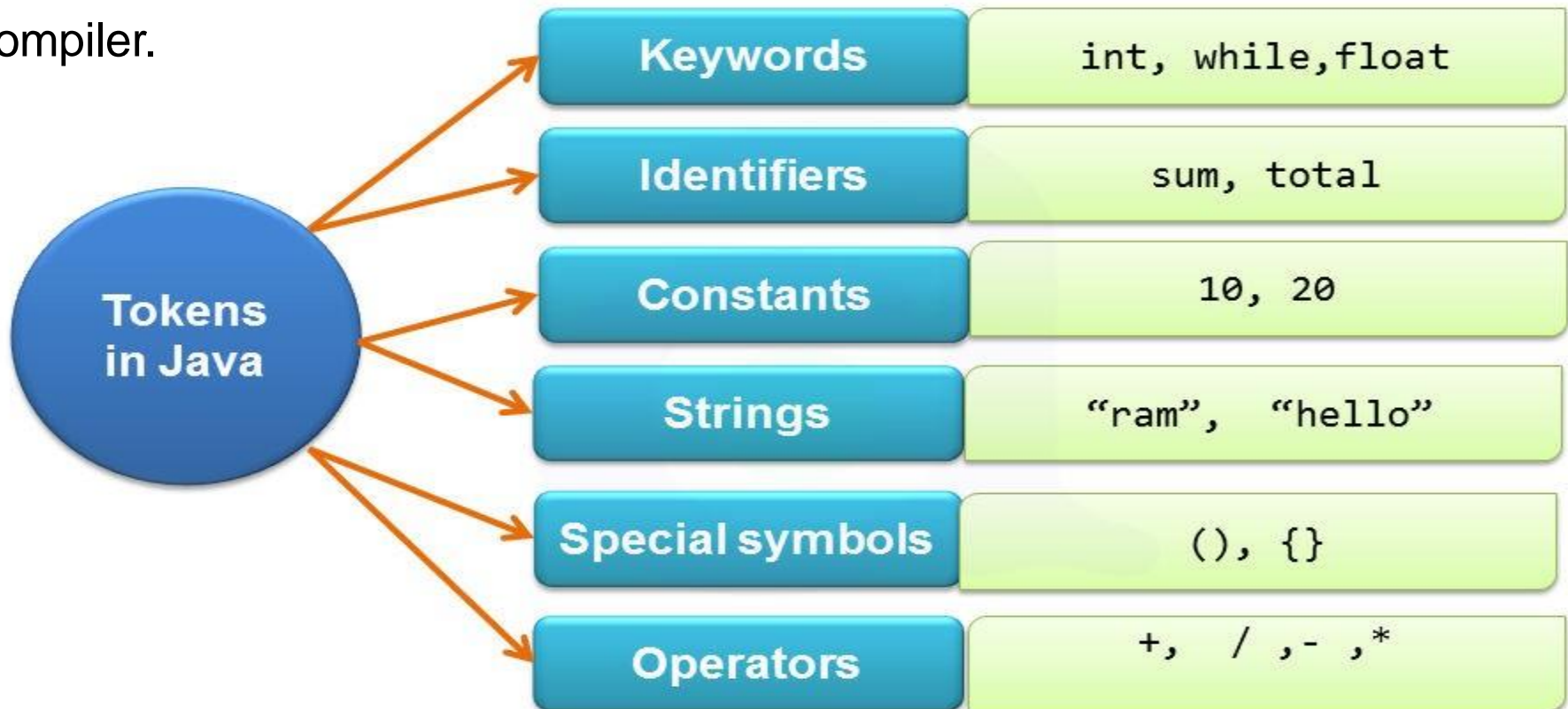
- An object is active, not passive; it does things
- An object is responsible for its own data , But: it can expose that data to other objects.



JAVA Tokens



- Tokens are the various Java program elements which are identified by the compiler.
- A token is the smallest element of a program that is meaningful to the compiler.



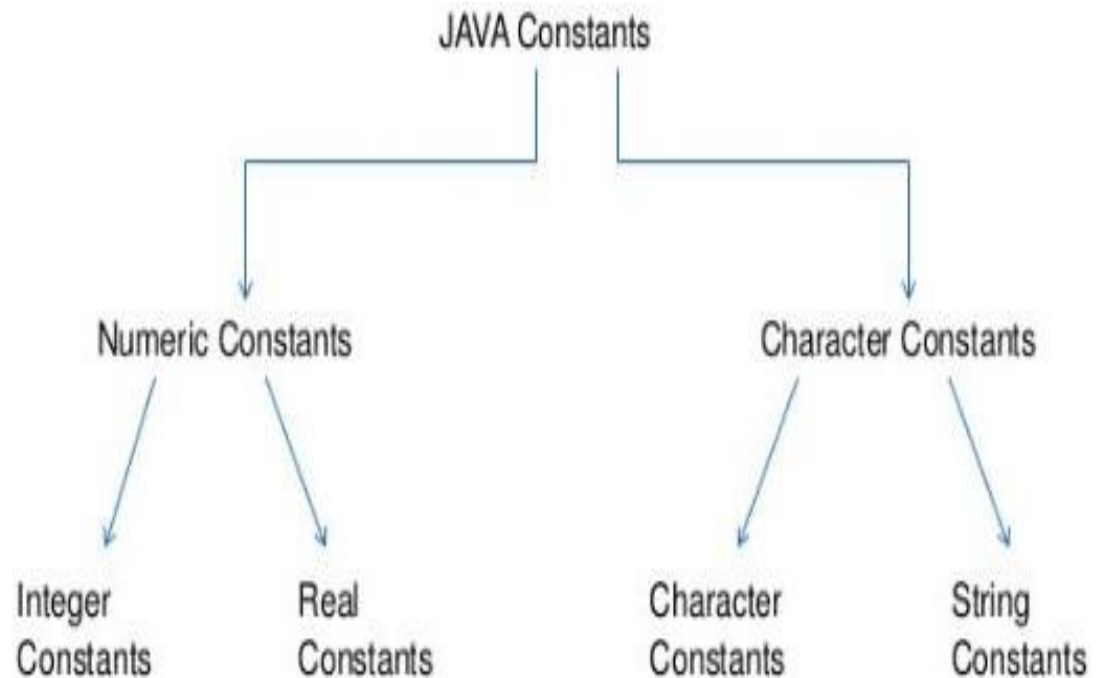
JAVA Constants



- A constant is a value that never changes during the life of a program--
- In Java, we use the keyword “final” in front of a declaration to change it from a variable into a constant.

Example:

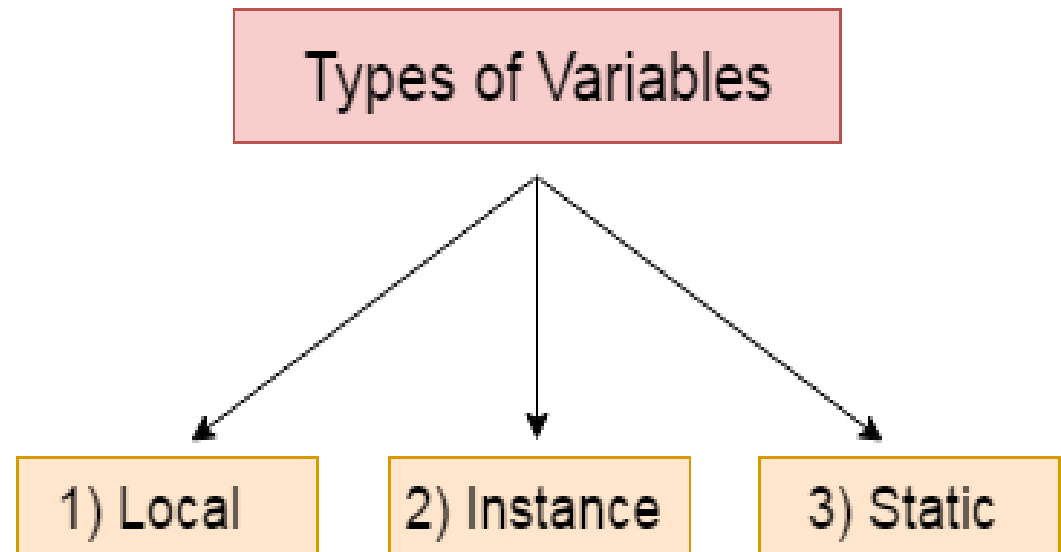
```
final double PI = 3.14;  
final double PST = 0.08;
```



Variables in JAVA



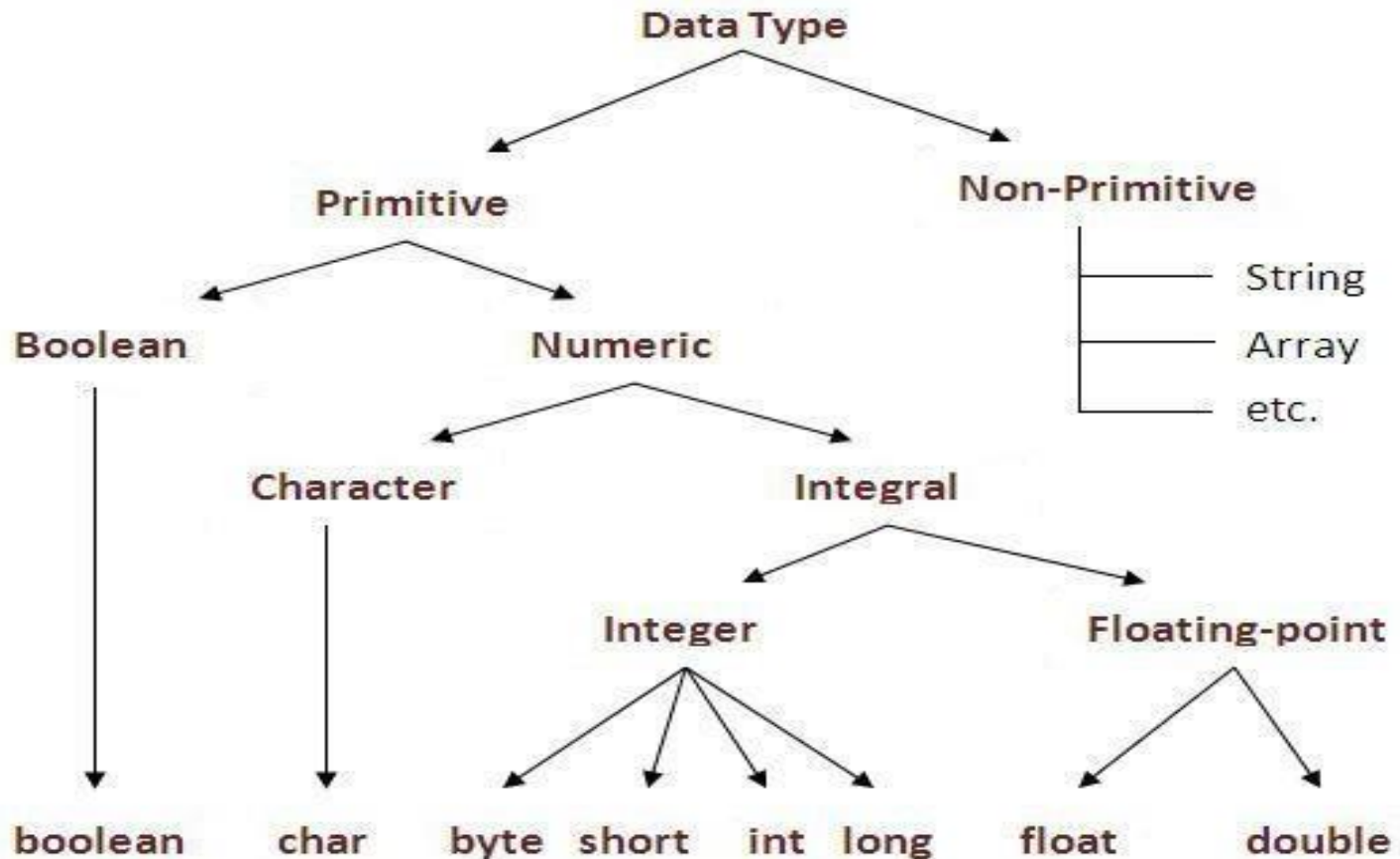
- A variable provides us with named storage that our programs can manipulate.
- Each variable in Java has a specific type, which determines the size and layout of the variable's memory.



Data Types in JAVA



- The data type of a value (or variable) is an attribute that tells what kind of data that value can have.

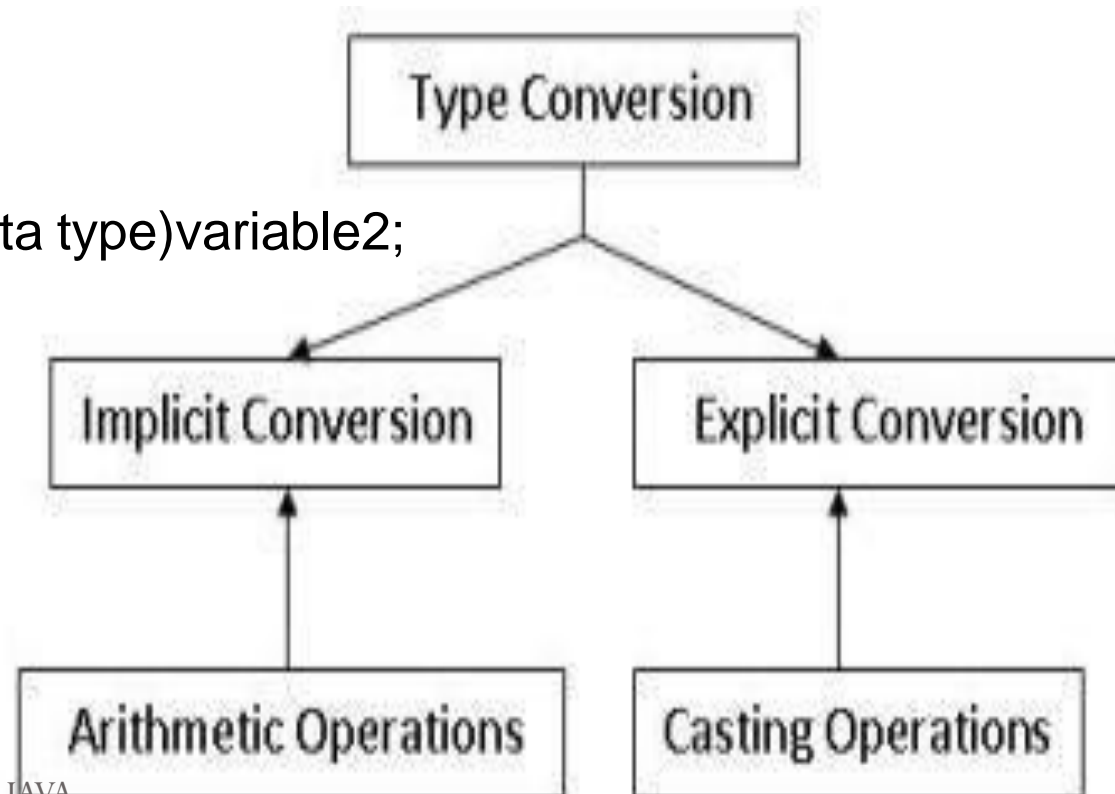


Type Conversion in JAVA



- When we assign a value of one data type to the variable of different data type, type conversion must be done in order to match the destination data type.

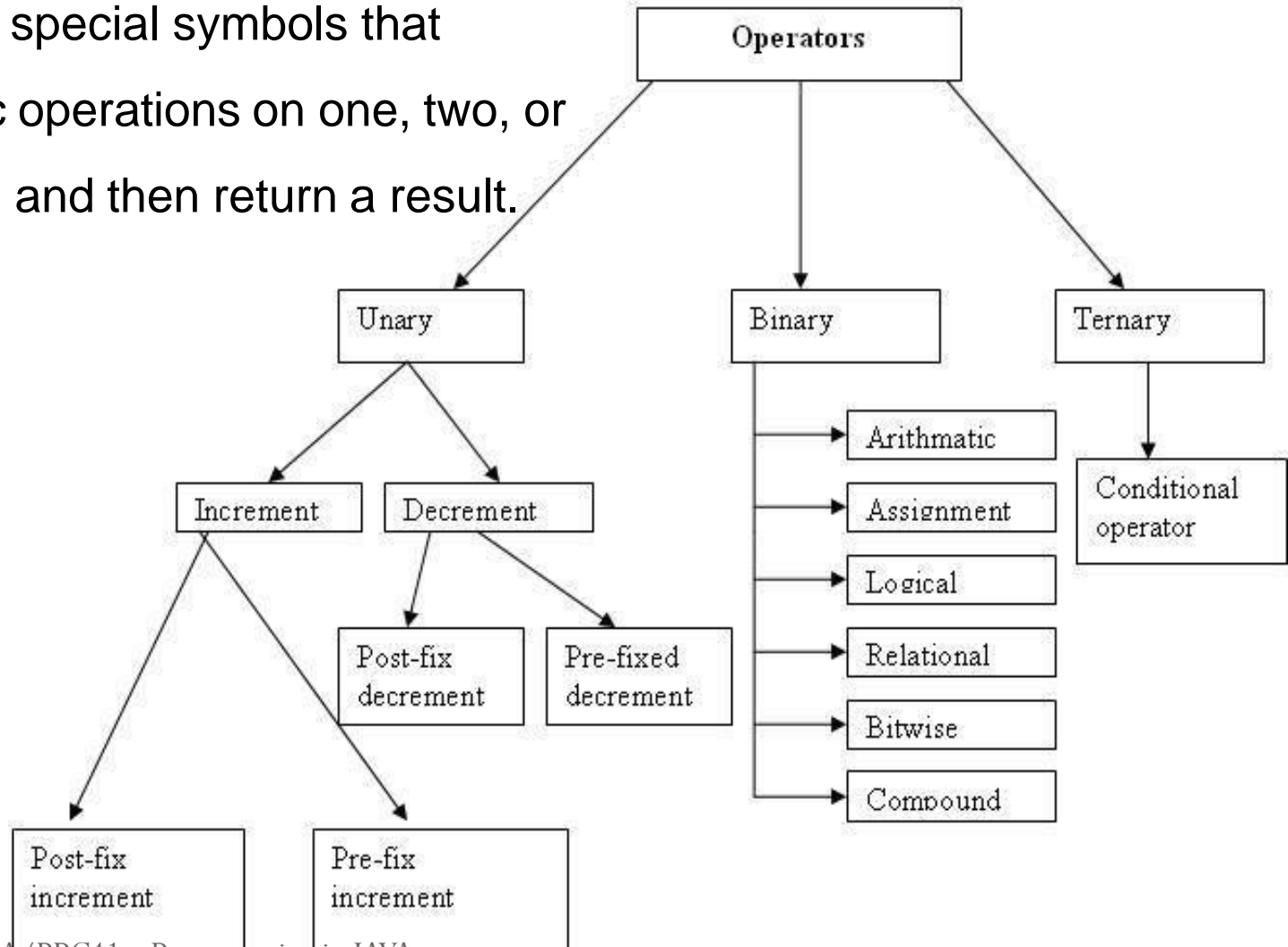
syntax: variable1=(variable1 data type)variable2;



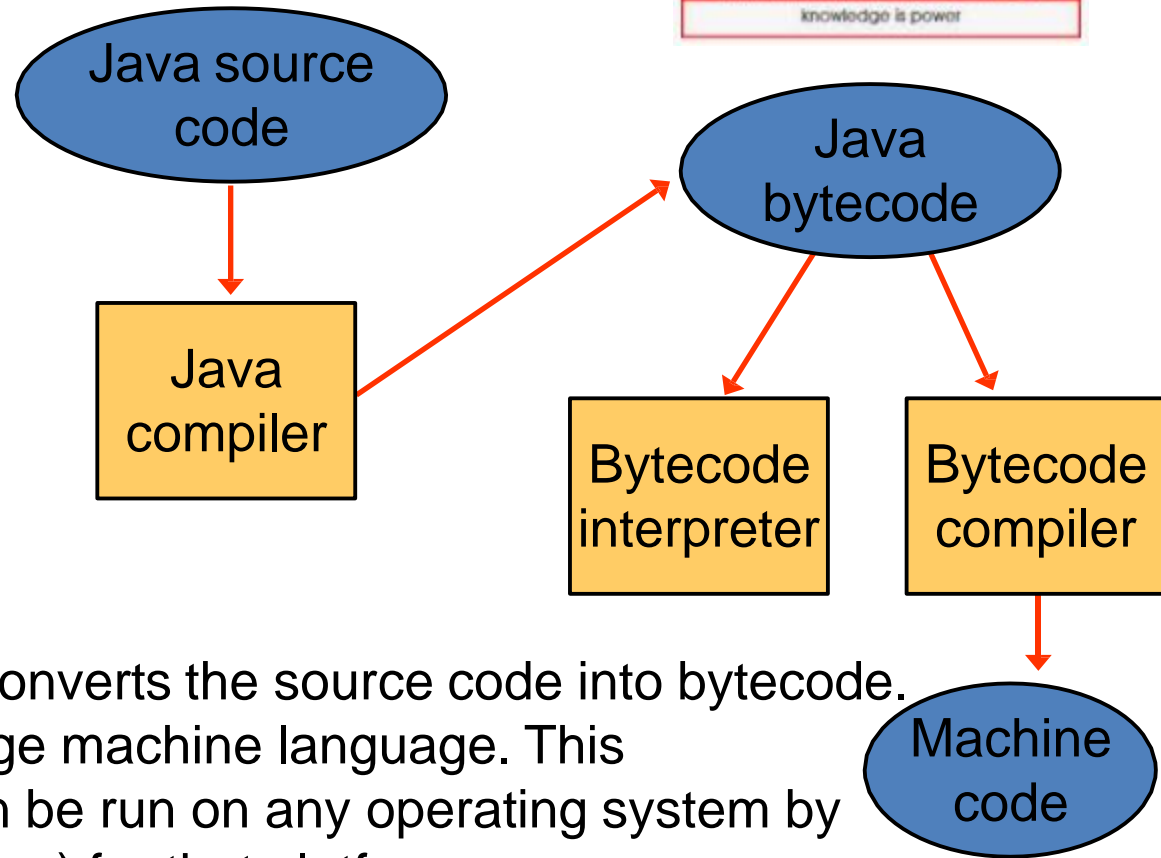
Operators in JAVA



• **Operators** are special symbols that perform specific operations on one, two, or three operands, and then return a result.

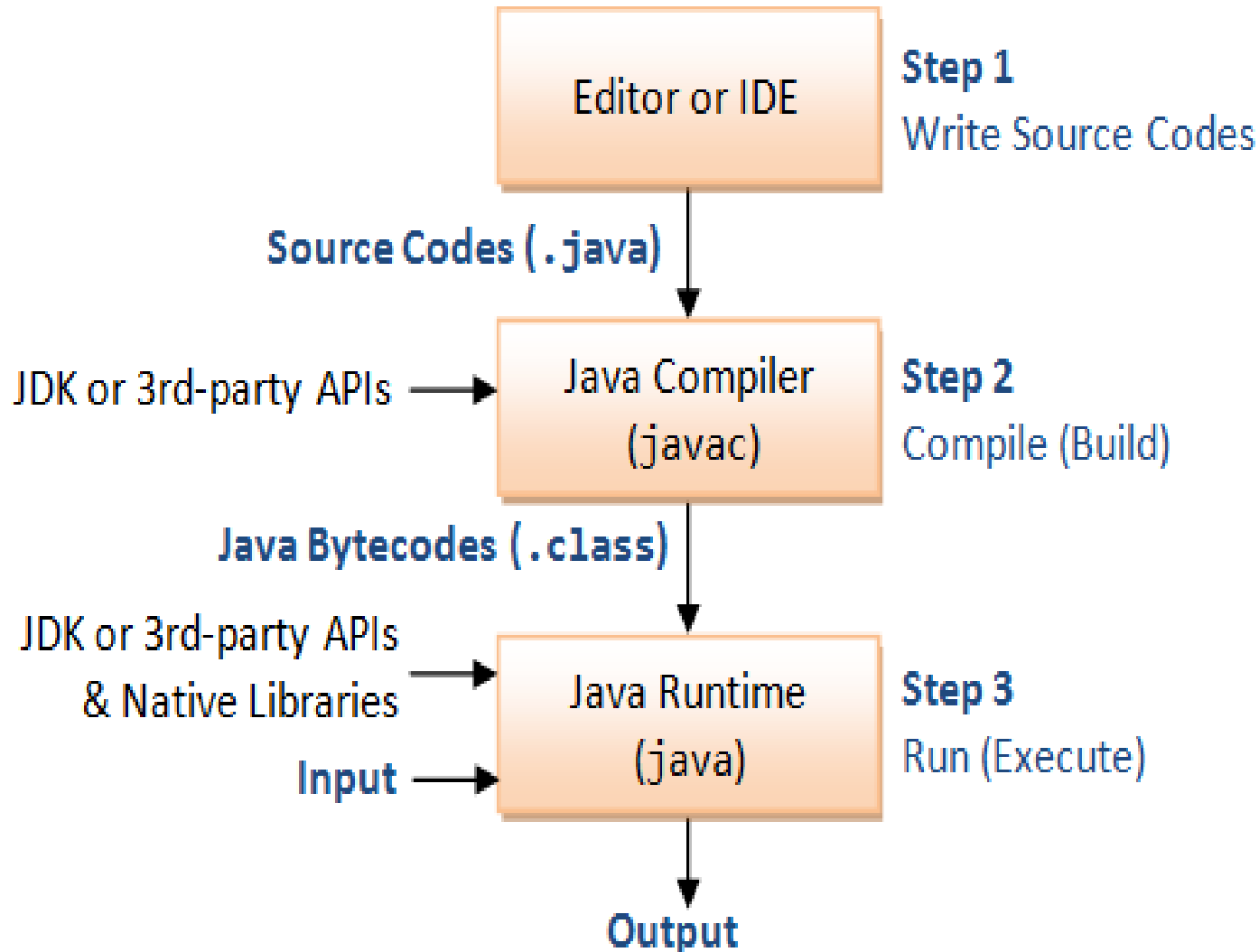


JAVA Translation



- The Java compiler (javac) converts the source code into bytecode.
- Bytecode is a kind of average machine language. This bytecode file (.class file) can be run on any operating system by using the Java interpreter (java) for that platform.
- The interpreter is referred to as a Virtual Machine.
- Thus, Java is an example of a Virtual Machine programming Language.

Basic Program Development



Sample JAVA Program

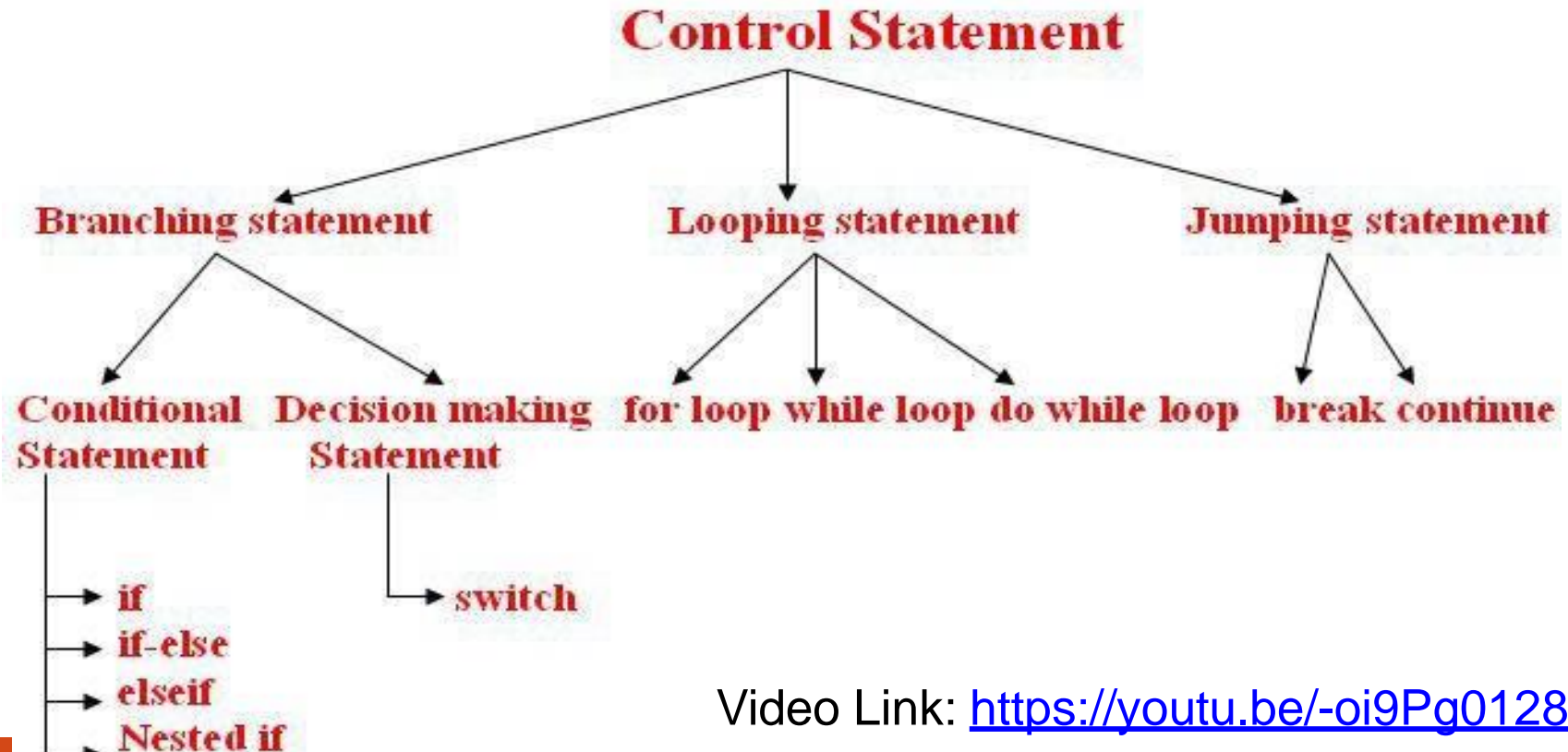


```
public class sample
{
    // _____
    // Prints a presidential quote.
    // _____
    public static void main (String[] args)
    {
        System.out.println ("A quote by Abraham Lincoln:");

        System.out.println ("Whatever you are, be a good one.");
    }
}
```

Control Statements in JAVA

- Control statements enable us to specify the flow of program control; ie, the order in which the instructions in a program must be executed.
- They make it possible to make decisions, to perform tasks repeatedly or to jump from one section of code to another.



Video Link: <https://youtu.be/-oi9Pg0128M>