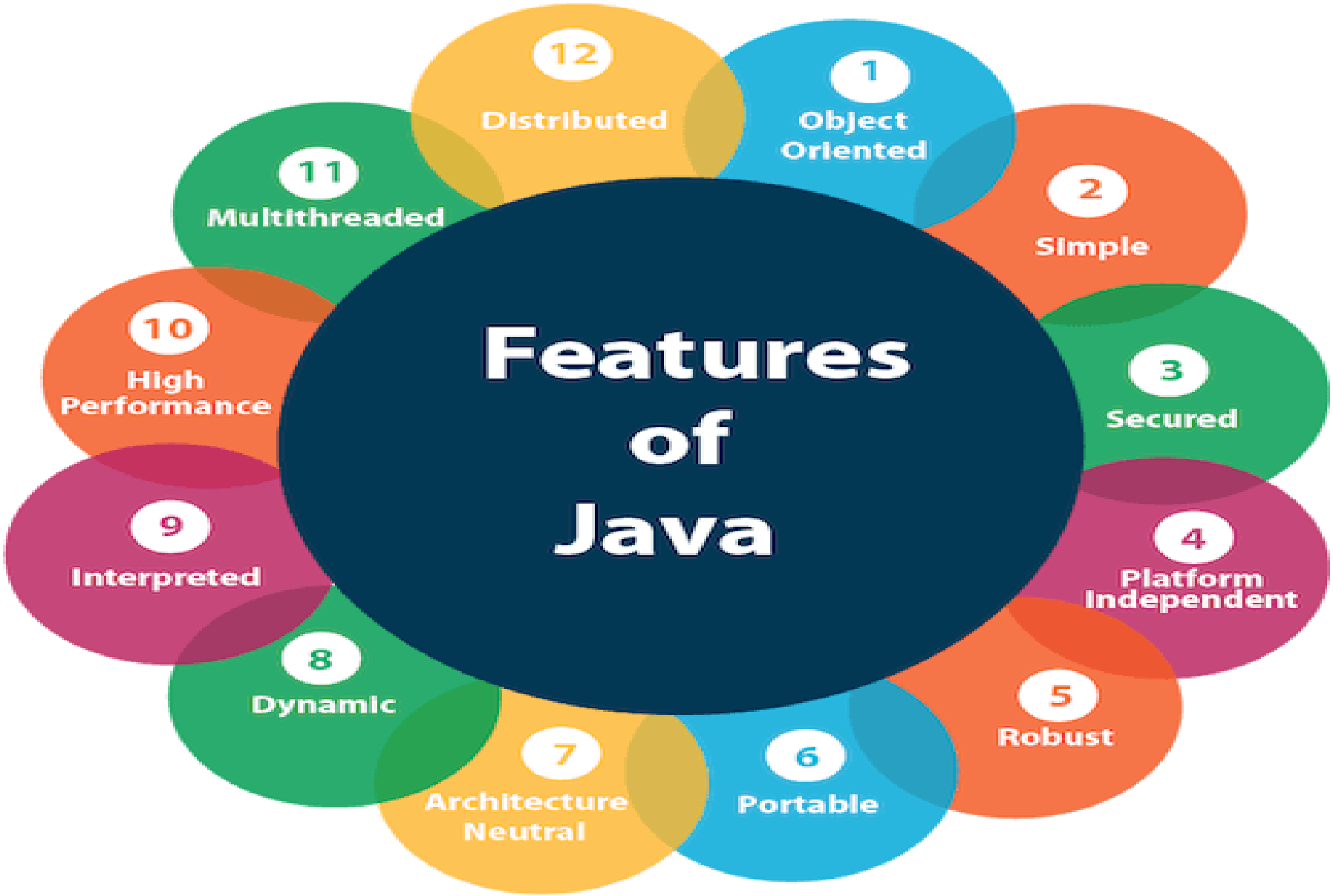
Introduction of Java

Java is a programming language and a platform. Java is a high level, robust, object-oriented and secure programming language.

Java was developed by ***Sun Microsystems*** (which is now the subsidiary of Oracle) in the year 1995. ***James Gosling*** is known as the father of Java. Before Java, its name was ***Oak*.** Since Oak was already a registered company, so James Gosling and his team changed the name from Oak to Java.

Platform: Any hardware or software environment in which a program runs, is known as a platform. Since Java has a runtime environment (JRE) and API, it is called a platform.

Features Of Java



Features Of Java

Java programming were

- Simple,
- Robust,
- Portable,
- Platform-independent,
- Secured,
- High Performance,
- Multithreaded,
- Architecture Neutral,
- Object-Oriented, Interpreted, and Dynamic".

First Java program

To write the simple program, you need to open notepad by **start menu -> All Programs -> Accessories -> Notepad**

```
class Simple
{
    public static void main(String args[]){
     System.out.println("Hello Java");
    }
}
```

Save the above file as Simple.java.

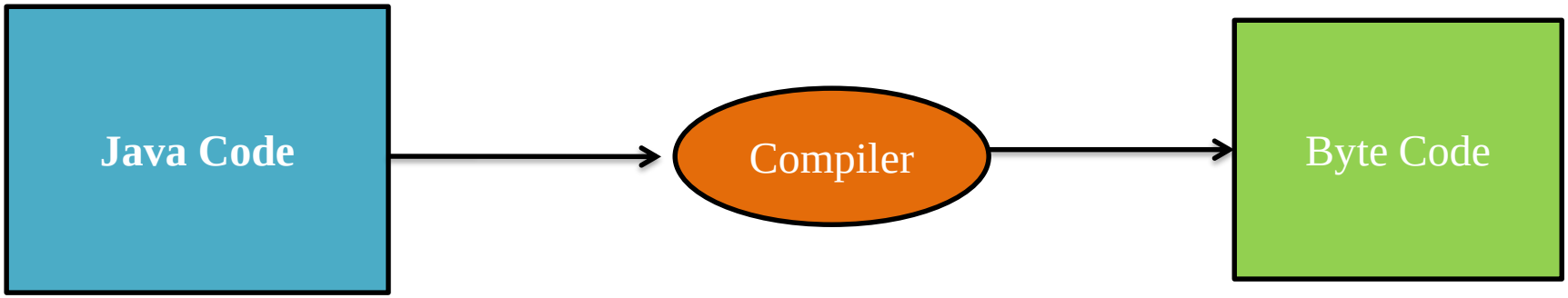
To compile:javac Simple.java

To execute:java Simple

Parameter Used In First Program

- Let's see what is the meaning of class, public, static, void, main, String[], System.out.println().
- **class** keyword is used to declare a class in Java.
- **public** keyword is an access modifier that represents visibility. It means it is visible to all.
- **static** is a keyword. If we declare any method as static, it is known as the static method. The core advantage of the static method is that there is no need to create an object to invoke the static method. The main() method is executed by the JVM, so it doesn't require creating an object to invoke the main() method. So, it saves memory.
- **void** is the return type of the method. It means it doesn't return any value.
- **main** represents the starting point of the program.
- **String[] args** or **String args[]** is used for command line argument
- . We will discuss it in coming section.
- **System.out.println()** is used to print statement. Here, System is a class, out is an object of the PrintStream class, println() is a method of the PrintStream class. We will discuss the internal working of System.out.println()
- statement in the coming section.

At compile time, the Java file is compiled by Java Compiler (It does not interact with OS) and converts the Java code into bytecode.



variable

- A variable is a container which holds the value while the Java program is executed.
- A variable is assigned with a data type.
- Variable is a name of memory location.

There are three types of variables in java:

- Local
- Instance
- Static.

Example of Variables

```
public class A
{
    static int m=100;//static variable
    void method()
    {
        int n=90;//local variable
    }
    public static void main(String args[])
    {
        int data=50;//instance variable
    }
}//end of class
```

Example of Variable

```
public class Simple{
public static void main(String[] args){
int a=10;
int b=10;
int c=a+b;
System.out.println(c);
}
}
```

Output:

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Data Types

Data types specify the different sizes and values that can be stored in the variable. There are two types of data types in Java:

- **Primitive data types:** The primitive data types include boolean, char, byte, short, int, long, float and double.
- **Non-primitive data types:** The non-primitive data types include
- Classes
- Interfaces
- Arrays

Java Primitive Data Type

In Java language, primitive data types are the building blocks of data manipulation. These are the most basic data types available in Java language

There are 8 types of primitive data types :

- boolean data type
- byte data type
- char data type
- short data type
- int data type
- long data type
- float data type
- double data type
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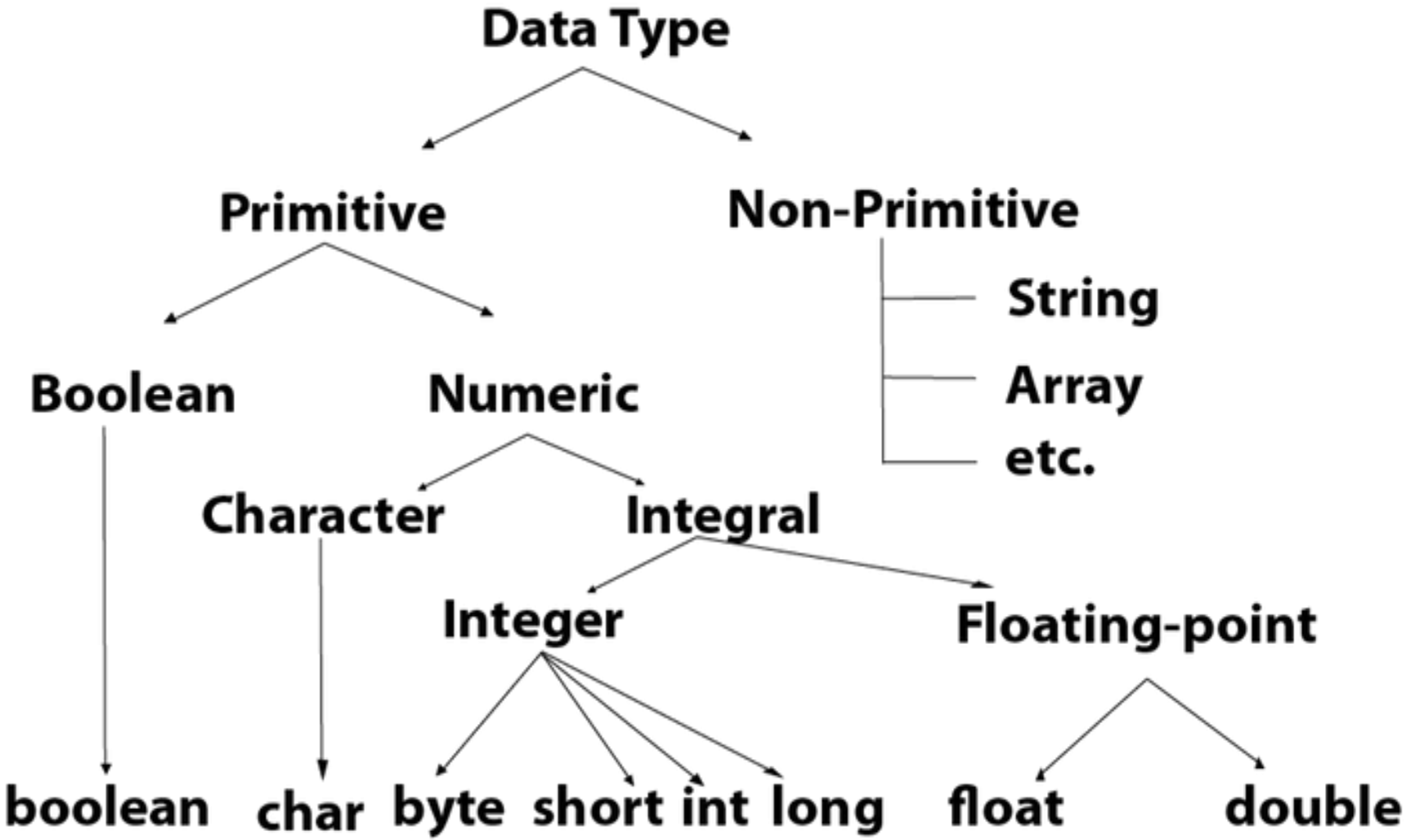
Diagram Of Data Type



Operator in Java

There are many types of operators in Java which are given below:

- Unary Operator : Example: ++ and --
- Arithmetic Operator : +,-,*, /
- Shift Operator : << and >>
- Relational Operator : < > <= >= == !=
- Bitwise Operator :&, ^,|
- Logical Operator :&&, ||
- Ternary Operator : ?:
- Assignment Operator := += ,-=, *=, /=, %=, &=, ^=, |=, <<=, >>=, >>>=

Example of Arithmetic operator

```
public class OperatorExample{
public static void main(String args[])
{
int a=10;
int b=5;
System.out.println(a+b);    //15
System.out.println(a-b);    //5
System.out.println(a*b);   //50
System.out.println(a/b);    //2
System.out.println(a%b);  //0
}
}
```