

what is Java?

Java is an example of a high-level programming language, and developed by Sun Microsystems, now part of

ORACLE

variables & data types

Operator

Number : + - / * %, ++, --, +=, *=, etc.

Comparison : > < == >= <= !=

Boolean : && ||

Data Types:

Primitive: Boolean, Numeric

Non-primitive: String, Array, etc.

why java?

- 20++ years used in industry and research; and still being developed!
- Java syntax is not hard and has mapping that suits the object-oriented programming concepts in literature

source code example

```
public static boolean isPalindromeChar(final String input){
    int front = 0;
    int rear = input.length() - 1;
    while (front < rear) {
        if (input.charAt(front++) != input.charAt(rear--)) {
            return false;
        }
    }
    return true;
}
```

how does Java work?

Source code Compile
.....
Java Virtual Machine Java Byte Code

syntax

```
class HelloWorld {
    public static void main (String[] args) {
        System.out.println("Hello World!")
    }
}
```

program structure

in a Java program

- a program was made of 1 class or 1+ classes
- a class has 1 method or 1+ methods
- a method has program statement
- a Java program always has a method named main

selection

A selection statement selects among a set of statements depending on the value of a controlling expression.

iteration

Iteration is a process wherein a set of instructions or structures are repeated in a sequence a specified number of times or until a condition is met.

Do While

```
do {
    statement(s);
} while (condition);
```

While

```
while(condition){
    statement(s);
}
```

For

```
for (initialisation; condition; update) {
    statement(s);
}
```

Conditional

```
if (condition) {
    statement 1;
} else {
    statement 2;
}
```

Switch - Case

```
switch(expression) {
    case value-1 :
        // Statements
        break;
    case value-2 :
        break; // optional
    default : // Optional
        // Statements
}
```

common errors

- Forget to put {}
- Semi-colon at the end of statement
- Redundant boolean testing (foo == true)