



# Basic Programming

Rawlabs Academy

# Tools and IDE

- Java Development Kit (JDK)



- Integrated Development Environment (IDE)



# Java Development Process



# Basic Programming

## Hello World!

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



# Data Type (Integer)

| Data Type | Min                        | Max                        | Size    | Default |
|-----------|----------------------------|----------------------------|---------|---------|
| byte      | -128                       | 127                        | 1 byte  | 0       |
| short     | -32,768                    | 32,767                     | 2 bytes | 0       |
| int       | -2,147,483,648             | -2,147,483,647             | 4 bytes | 0       |
| long      | -9,223,372,036,854,755,808 | -9,223,372,036,854,755,807 | 8 bytes | 0       |

# Data Type (Decimal)

| Data Type | Min      | Max      | Size    | Default |
|-----------|----------|----------|---------|---------|
| float     | 3.4e-038 | 34.e+038 | 4 bytes | 0       |
| double    | 1.7e-308 | 1.7e+308 | 8 bytes | 0       |

# Variable

## Declaration

- `data_type variable_name = value`

## Example

```
int myInt;  
long balance = 1000001;  
String name = "Maverick";  
double value = 1.71;  
  
int age = 10;  
byte ageAsByte = (byte) age;
```



# Primitive & Non Primitive

**Primitive** default value is **0** but, **non primitive** is allow **nullable**;

| Data Type Primitive | Data Type Non Primitive |
|---------------------|-------------------------|
| byte                | Byte                    |
| short               | Short                   |
| int                 | Integer                 |
| long                | Long                    |
| float               | Float                   |
| double              | Double                  |
| char                | Char                    |
| boolean             | Boolean                 |

# Array

Panjang Array 7



|       |   |   |   |   |   |   |   |
|-------|---|---|---|---|---|---|---|
| Index | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Isi   | a | l | t | e | r | r | a |

# Array Example

```
char[] rawlabs = new char[] {'r', 'a', 'w', 'l', 'a', 'b', 's'};
```

```
char[] rlabs = new char[7];
```

```
rlabs[0] = 'r';
```

```
rlabs[1] = 'a';
```

```
rlabs[2] = 'w';
```

```
rlabs[3] = 'l';
```

```
rlabs[4] = 'a';
```

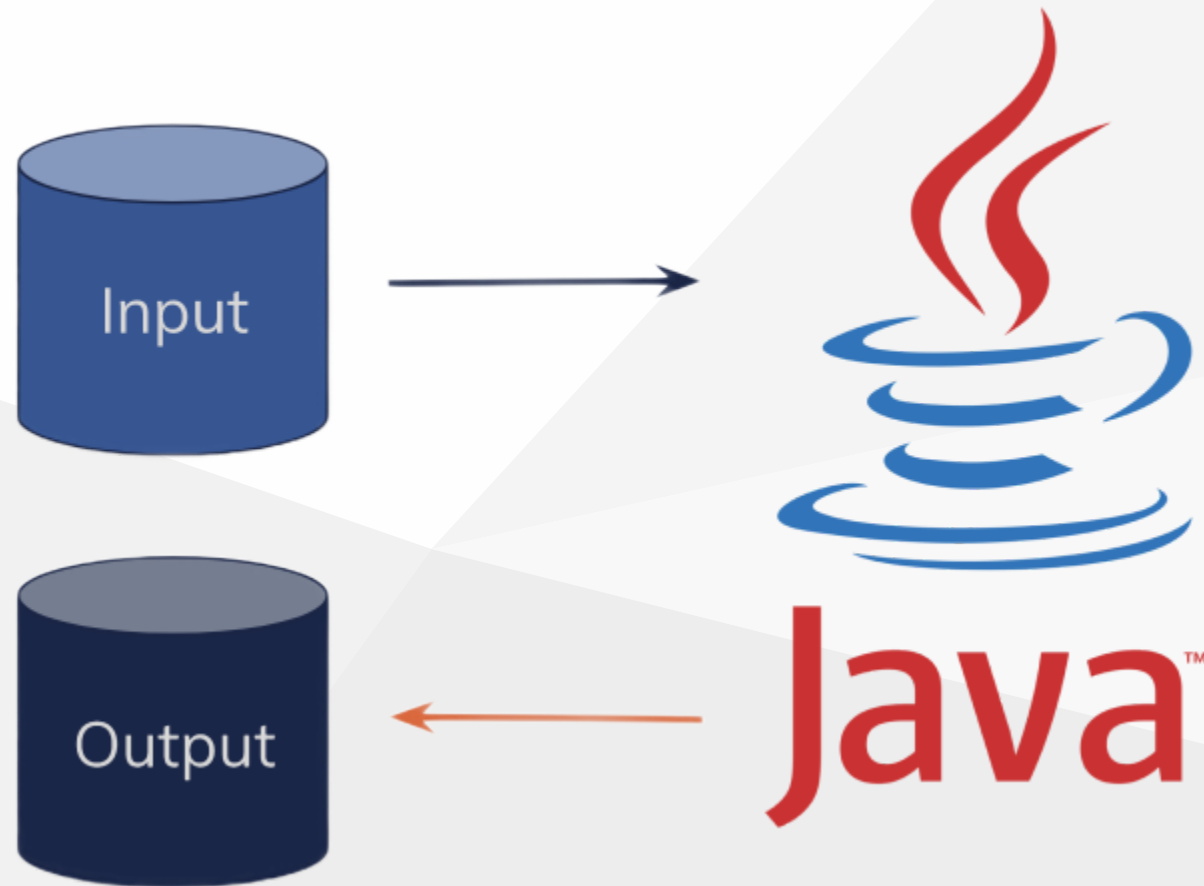
```
rlabs[5] = 'b';
```

```
rlabs[6] = 's';
```

# Operator

| Operator                | Symbol          |
|-------------------------|-----------------|
| Assignment              | =               |
| Arithmetic              | + - * / %       |
| Unary                   | + - ++ -- !     |
| Equality and Relational | == != > >= < <= |
| Conditional             | &&              |

# Input & Output



# Input

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.print("Enter an integer number: ");

        int number = in.nextInt();
        System.out.println("You have entered " + number);

        // Closing the input
        in.close();
    }
}
```

# Output

```
public class Main {  
  
    public static void main(String[] args) {  
        Double number = 1.67;  
  
        System.out.println(5);  
        System.out.println(number);  
    }  
  
}
```

# Branching





# If-Else

```
public static void main(String[] args) {  
    String userRole = "ADMIN";  
    if (userRole == "ADMIN") {  
        System.out.println("Role: ADMIN");  
    } else {  
        System.out.println("Role: USER");  
    }  
  
    boolean valid = true;  
    if (!valid) {  
        System.out.println("Invalid!");  
    }  
}
```

# Switch

```
public static void main(String[] args) {  
    switch(userRole) {  
        case "ADMIN":  
            token = "tokenAdmin";  
            break;  
        case "USER":  
            token = "tokenUser";  
            break;  
        default:  
            token = "Unauthorized";  
            break;  
    }  
}
```

# Looping

For

While

Do-  
While

For  
Each

Break  
Continue

# For Loop

```
for (int i = 0; i < 10; i++) {  
    System.out.println("Number: " + i);  
}
```

# While Loop

```
int i = 0;  
while(i < 10) {  
    System.out.println("Number: " + i);  
    i++;  
}
```

# Do-While Loop

```
int i = 0;
do {
    System.out.println("Number: " + i);
    i++;
} while(i < 10);
```

# Foreach Loop

```
String names = {"Calvin", "Maverick", "Joe", "John"}
for (String name : names) {
    System.out.println("My name is: " + name);
}
```

# Break and Continue

```
for (int i = 0; i < 10; i++) {  
    if (i == 3 || i == 5) {  
        System.out.println("I will continue while looping on number: " + i);  
        continue;  
    }  
  
    if (i == 7) {  
        System.out.println("I will stop here on number: " + i);  
        break;  
    }  
}
```

# Method

```
public class Main {  
  
    public static void main(String[] args) {  
        System.out.println("Call the method in this line below");  
        add(2, 3);  
    }  
  
    public static void add(int a, int b) {  
        System.out.println(a + b);  
    }  
  
}
```

# Method with Return

```
public class Main {  
  
    public static void main(String[] args) {  
        System.out.println("Call the method in this line below");  
        System.out.println(add(2, 3));  
    }  
  
    public static int add(int a, int b) {  
        return a + b;  
    }  
  
}
```



# Method with Argument

```
public class Main {  
    public static void main(String[] args) {  
        System.out.println("Call the method in this line below");  
        System.out.println(add(2, 3, 4, 5, 6));  
    }  
  
    public static int add(int... values) {  
        int result = 0;  
        for (int v : values) {  
            result += v;  
        }  
        return result;  
    }  
}
```

# Comment

```
/**  
 *  
 * Method to add 2 numbers  
 * You can write a multiple line of comments  
 *  
 */  
public static int add(int a, int b) {  
    // Return add of 2 numbers  
    return a + b;  
}
```

# Task 1

Counts the number of characters in the form of vowels, consonants and total characters from the sentence *"Rahwlab Academy"*.

**Input:**

Rawlabs Academy

**Output:**

Vowels: 5

Consonants: 9

Total: 14

# Task 2

**Palindrome** is a word, number, phrase, or other sequence of symbols that reads the same backwards as forwards. Write a program to detect whether a string is a palindrome or not.

Input: **katak**

Output: Palindrome

Input: **mister**

Output: Not Palindrome

Input: **kasur rusak**

Output: Palindrome