

# METHOD OVERLOADING IN JAVA

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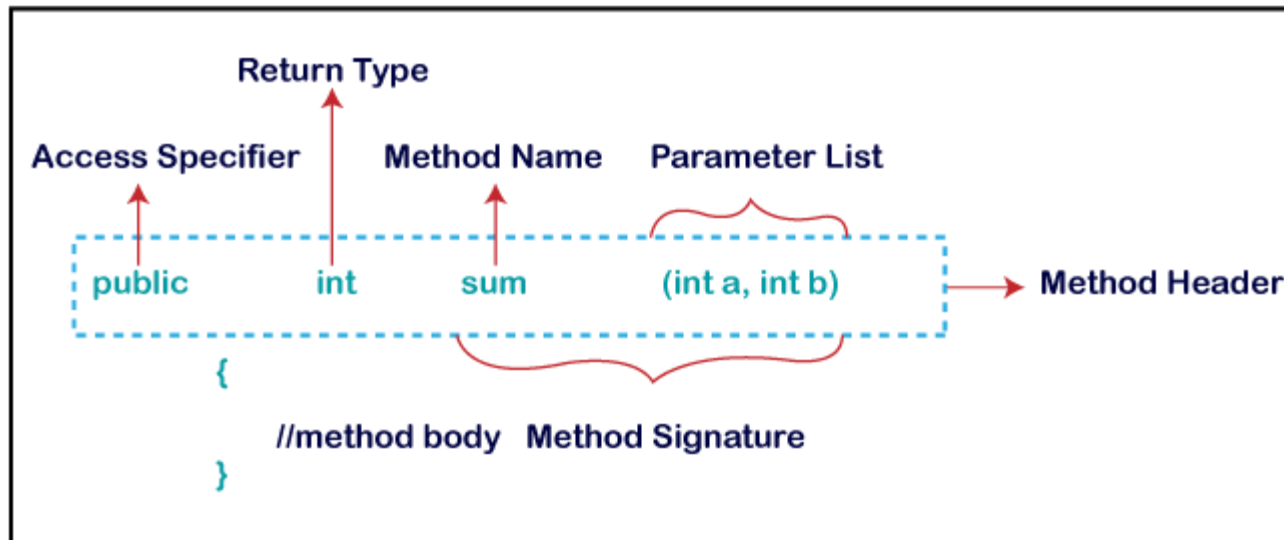
# Outline

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- Java Methods
- Method Overloading
- Call by Reference
- Math Class

# Java Methods

- A method
  - ▣ a block of code which only runs when it is called
  - ▣ parameters- data passed into a method
  - ▣ return data
  - ▣ used to achieve the **reusability** of code
  - ▣ **must be declared within a class**



# Java Methods

- Types of methods
  - ▣ System defined methods (predefined, built-in)
    - `Math.sqrt()`
    - `System.out.println()`
  - ▣ User defined methods

# Method Overloading

- If a class has multiple methods having same name but different in parameters, it is known as **Method Overloading**.
- [Method Overloading in Java - Javatpoint](#)

# Overload Main Method !!

```
Class overloadMain{
    public static void main(String[] args){
        System.out.println("in main with string arguments");
        overloadMain objMain = new overloadMain();
        objMain.main();
    }
    public static void main(){
        System.out.println("in main without string arguments");
    }
}
```

# Call by Reference

- when we pass an object to a method, the situation changes dramatically, because objects are passed by what is effectively call-by-reference.
- [Passing and Returning Objects in Java - GeeksforGeeks](#)

# Example in C++

```
void swap (int &x, int &y){  
    int t;  
    t = x;  
    x = y;  
    y = t;  
}  
void main(){  
    int a=5, b=10;  
    printf("%d %d", a, b);  
    swap(a, b);  
    printf("%d %d", a, b);  
}
```



# Math Class

- provides several methods to work on math calculations
- `java.lang.Math` class contains various methods
- `min()`, `max()`, `avg()`, `sin()`, `cos()`, `tan()`, `round()`, `ceil()`, `floor()`, `abs()` etc.
- All methods
  - ▣ [Java Math class with Methods - Javatpoint](#)

# Math Class

EX:

```
public class JavaMathExample
{
    public static void main(String[] args)
    {
        double x = 28;
        double y = 4;
        // return the maximum of two numbers
        System.out.println("Maximum number is: " + Math.max(x, y));
    }
}
```