JaVA Building Block Stairs (JaBS)

(Method Overloading and Data Type Conversion in Java OOP)

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+ “JaBS” is the compilation of Knowledge of Java. Java evolved from the features inherited from C and C++ +
+ and polished their features to improve the current demand of programming. This document is solely the +
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Work in Progress

□ Method Overloading:

- ❖ Same method name but differ by the number of input parameters or type of input parameters, or a mixture of both

- ❖ Also known as **Compile time Polymorphism, Static Polymorphism, or Early binding**

- ❖ Compared to **Parent argument**, the **child argument** will get the higher priority.

□ Example of Method Overloading in Java:

```java
public class JaBSMethodOverloading {
    // Overloaded addition(). This sum takes two int parameters
    public int addition(int x, int y) { return (x + y); }
    // Overloaded addition(). This sum takes three int parameters
    public int addition(int x, int y, int z){
        return (x + y + z);
    }
    // Overloaded addition(). This sum takes two double parameters
    public double addition(double x, double y){
        return (x + y);
    }
    // Driver code
    public static void main(String args[])
    {
       JaBSMethodOverloading overloadingExample = new JaBSMethodOverloading();
       System.out.println(overloadingExample.addition(5, 10));
       System.out.println(overloadingExample.addition(10, 20, 30));
       System.out.println(overloadingExample.addition(40.5, 50.5));
    }
}
```

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□ Different ways of Method Overloading in Java by changing

- ➢ The number of Arguments
- ➢ Data Types of the Arguments
- ➢ Order of the Arguments of Methods

□ Example of Method Overloading in Java:

```
/*
 * Method Overloading By changing the Order of the Parameters
 */

import java.util.*;

class Student
{

    /*
     * Method StudentInfo()
     */
    public void StudentInfo(String name, int studentID)
    {
        System.out.println("Name :" + name + " "+ "ID :" + studentID);
    }

    /*
     * Method StudentInfo() again but with different order
     */
    public void StudentInfo(int studentID, String name)
    {
        System.out.println("ID:" + studentID + " "+ "Name :" + name);
    }
}
```

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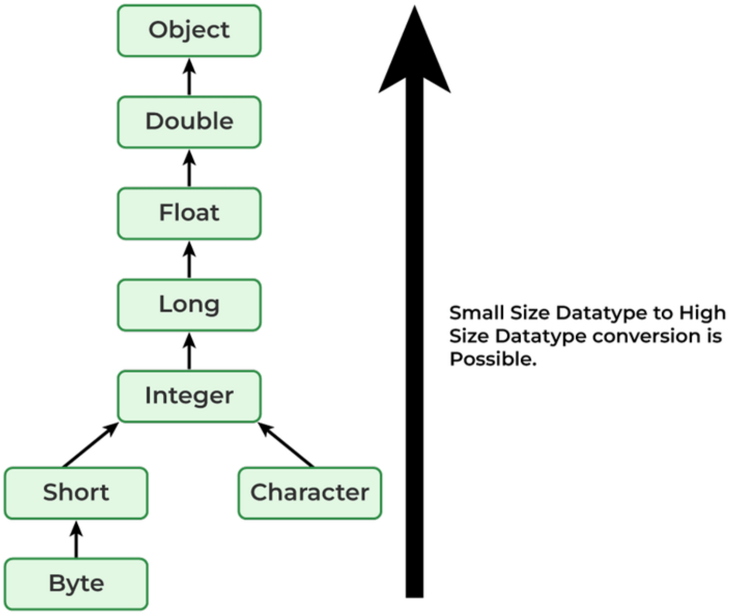
□ What will happen if the Exact prototype definition does not match with arguments in Methods?

Look at the following diagram to understand the order of priority by the compiler:



Object
Double
Float
Long
Integer
Short
Character
Byte
Small Size Datatype to High Size Datatype conversion is Possible.

□ Advantages of Method Overloading:

- ➢ Improves Reliability and reusability of the program
- ➢ Reduces the complexity of the program
- ➢ Feasibility to access methods performing related functions with slightly different arguments and data types
- ➢ Initialization of objects of a class in different ways using Constructors

□ **Important Questions** that everyone MUST know to have a Perfect and Complete knowledge about Java Programming:

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□ **Look:** First look at the syntax of a method() in java and then we can find that a method() in programming has return-type, argument-list with keywords, and method-name.

□ **DHMAI Massage:**

We might have the following questions in our mind? To know or understand something properly MUST have the clarity about your questions that arise in your mind. Note that not a single question in your mind MUST not be ignored without proper clarification to strengthen your knowledge about something in general.

□ Can we overload or override static methods?
□ Can we overload methods that only differ by static keywords?
□ Can we overload main() in java?
□ Does Java support operator overloading like C++?
□ Can we overload methods in return type?
□ What is the difference between overloading and overriding in Java?