

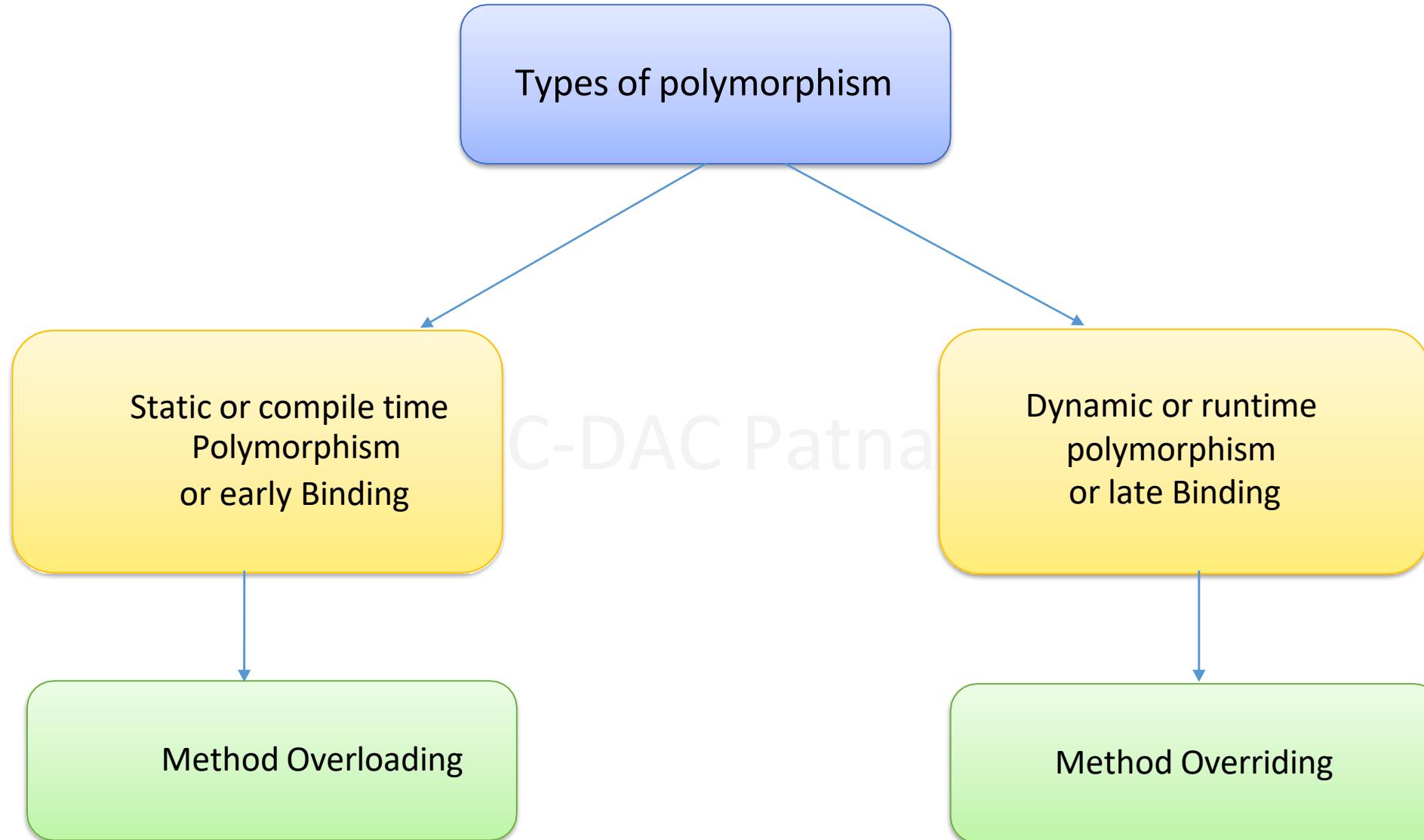
Overloading

Polymorphism

- ‘poly’ means **many** and ‘morph’ means **form**
- It is another principle of OOPs by which we can perform multiple operation by a single object when we change it’s parameter.
- the behavior depends upon the types of data used in then operation



- > A Boy behave like a Student in a School
- > A Boy behave like a Customer in Market or Shopping Mall
- > A Boy behave like a Passenger in a Bus
- > A Boy behave like a Son in Home



- When a type of the object is determined at a compile time (by the compiler), it is known as **static binding**.
- When a type of the object is determined at the run time , it is known as **dynamic binding**.

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Overloading

- Two method are said to be overloaded if and only if both methods having same name but different arguments types.
- **Overloading** allows a class to have multiple methods with the **same name** but different argument lists. The methods must differ in either:
 - 1.The number of arguments, or
 - 2.The type of arguments.

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- The main goal of method overloading is to increase the readability and flexibility of the program.
- Return type of method does not play any important role in method overloading.

Example -

```
class ClassName {
    // Method with one parameter
    void display(int num) {
        System.out.println("Integer: " + num);
    }

    // Overloaded method with two parameters
    void display(int num, String str) {
        System.out.println("Integer: " + num + ", String: " + str);
    }

    // Overloaded method with a different parameter type
    void display(double num) {
        System.out.println("Double: " + num);
    }
}
```

Rule for Method overloading

- Method Name: Must be the same.
- Parameter List: Must be differ
- Return Type: Can be the same or different .
- Overloading can also be done with static methods.

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Advantage & Real Life Example

- Allows better organization by grouping methods with similar functionality.
- Increases readability and reusability of the code.
- Provides flexibility to call a method with different arguments.

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Assignment

1. Create a class to print an integer and a character with two methods having the same name * but different sequence of the integer and the character parameters.

For example, if the parameters of the first method are of the form (int n, char c), then that of the second method will be of the form (char c, int n).

2. Create a class named 'DisNum' to print various numbers of different datatypes by creating different methods with the same name 'disData()' having a parameter for each datatype .

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3. Create a class to print the area of a square and a rectangle. The class has two methods with the same name but different number of parameters. The method for printing area of rectangle has two parameters which are length and breadth respectively, while the other method for printing area of square has one parameter which is side of square.

➤ **Mostly asked questions in Interviews –**

1. WAP to overload main() method
2. WAP to implement method overloading based on the number of argument
3. WAP to implement method overloading based on the types of argument
4. WAP to implement method overloading based on the order of argument

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THANK YOU!!

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