SNS COLLEGE OF TECHNOLOGY

AN AUTONOMOUS INSTITUTION
COIMBATORE - 35

Department of Computer Science and Engineering

23CSB201 - OBJECT ORIENTED PROGRAMMING

I Year / II Semester

Unit 2 - CONTROL STATEMENTS AND CONSTRUCTORS

Topic – CONSTRUCTORS

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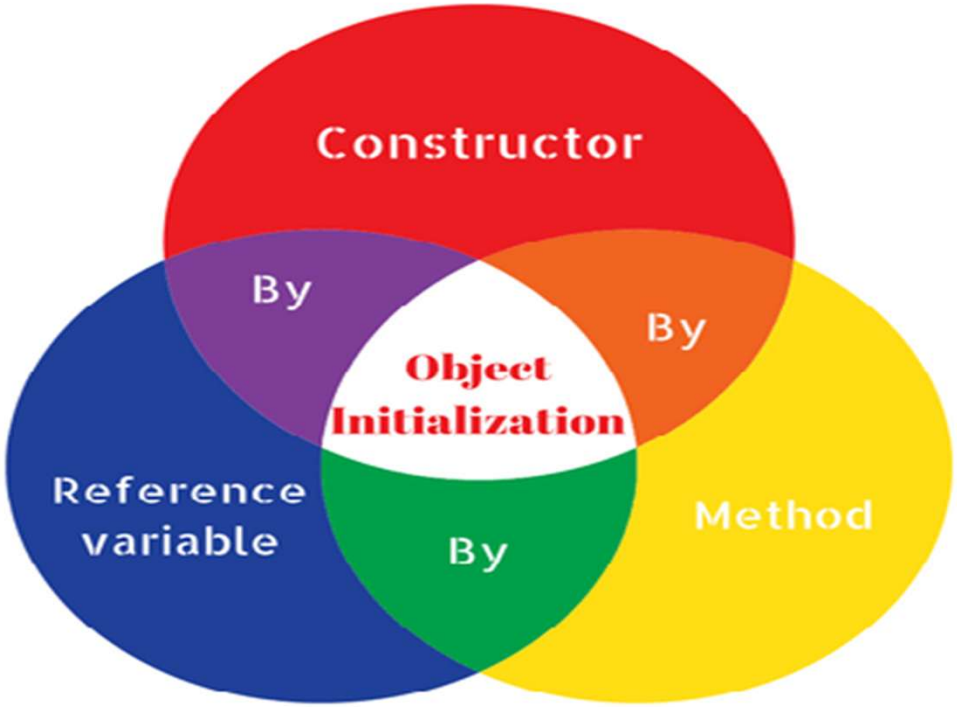
Object Initialization

Empathy



Constructor

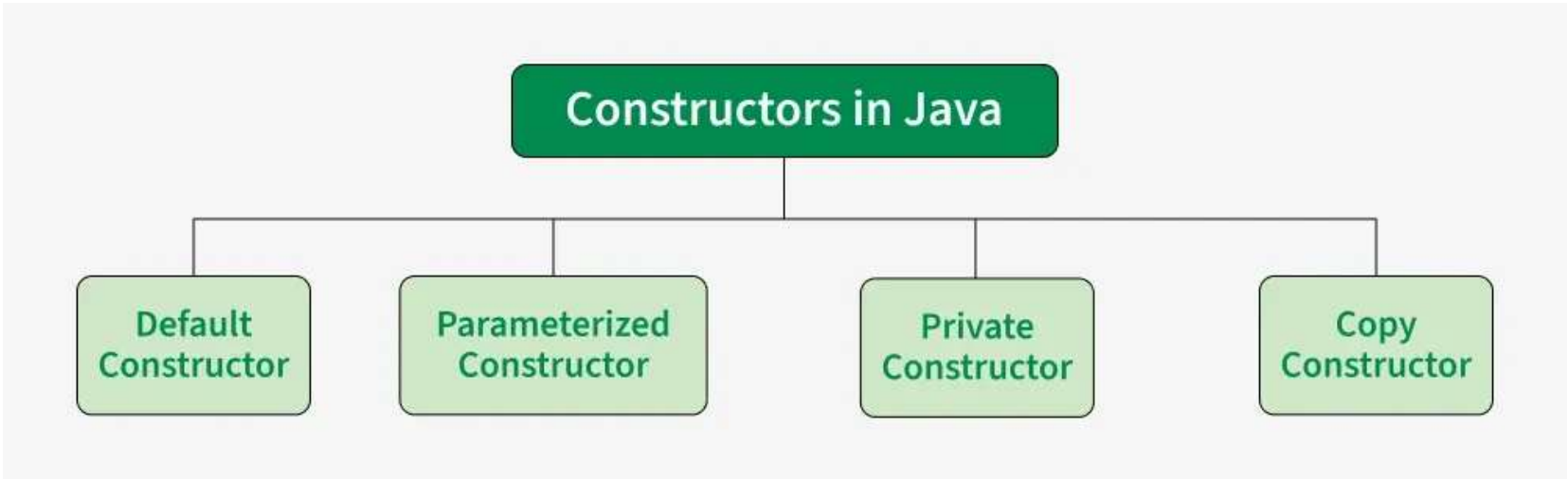
Define

- A constructor in Java is a special member that is called when an object is created.
- It initializes the new object's state.
- It is used to set default or user-defined values for the object's attributes

Properties:

- A constructor has the same name as the class.
- It does not have a return type, not even void.
- It can accept parameters to initialize object properties.

Types of Constructor



Default Constructor

- A Java default constructor is a no-argument constructor that the Java compiler automatically provides for a class only if the programmer does not explicitly define any other constructor.
- Its primary purpose is to enable object creation and ensure that instance variables are assigned their default values (e.g., 0 for int, null for objects, false for boolean).

Syntax:

```
class ClassName {
    ClassName()
    {
      ---------
      ---------
    }
}
```

Default Constructor

Prototype #1

```
public class Car {
    String model;
    int year;


    public static void main(String[] args) {
        Car car = new Car();
        System.out.println("Model: " + car.model + ", Year: " + car.year);
    }
}
```

Output:
Model: null, Year: 0

Default Constructor

Prototype #2

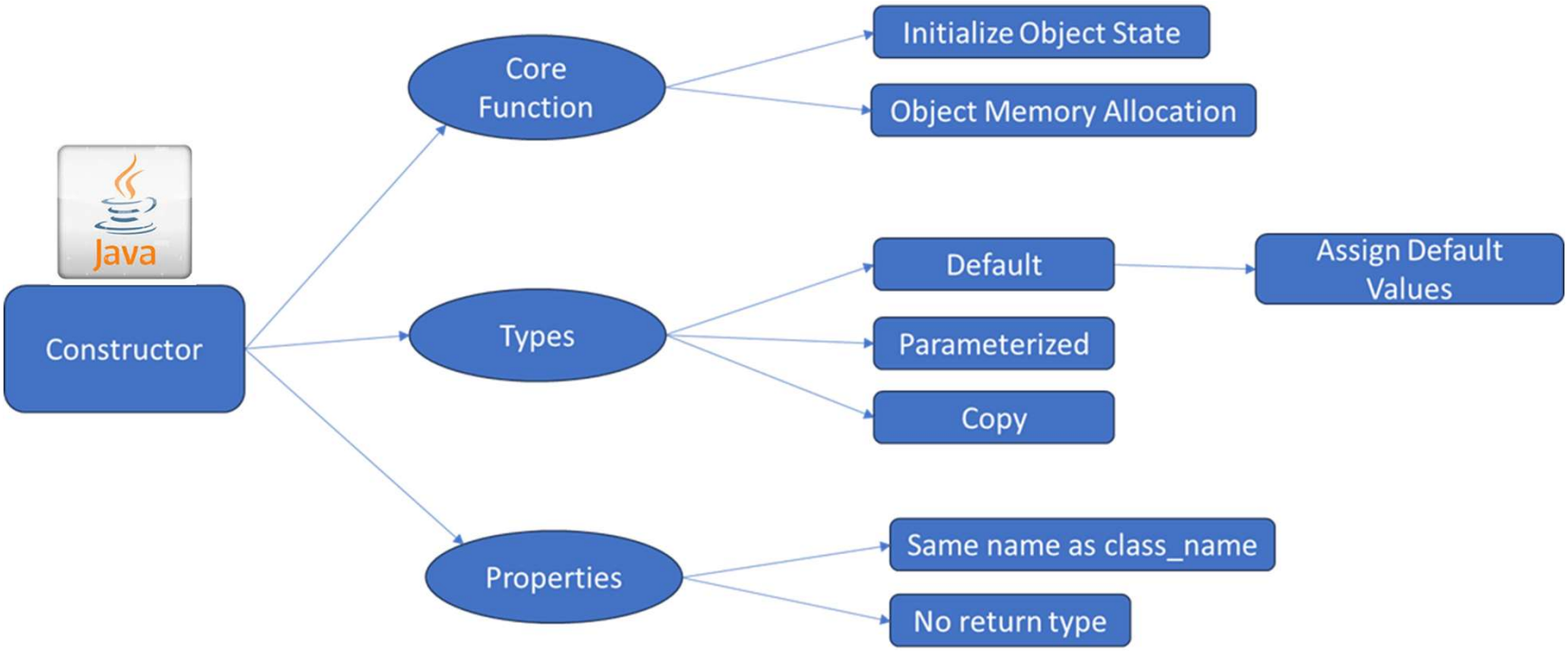
```
public class Car {
    String model;
    int year;

// Default Constructor
public Car() {
   model = "Basic";
   year = 2000;
}

public static void main(String[] args) {
        Car car = new Car();
        System.out.println("Model: " + car.model + ", Year: " + car.year);
    }
}
```

Output:
Model: Basic, Year: 2000

Mindmap


Java
Constructor
Core Function
Initialize Object State
Object Memory Allocation
Types
Default
Assign Default Values
Parameterized
Copy
Properties
Same name as class_name
No return type

Puzzles

1. What is false about constructor?

a) Constructors cannot be synchronized in Java
b) Java does not provide default copy constructor
c) Constructor can have a return type
d) “this” and “super” can be used in a constructor

Answer: c

2. What happens if you do not define a constructor in a Java class?

a) The program will not compile.
b) The compiler provides a default constructor.
c) The class cannot be instantiated.
d) The constructor from another class will be used.

Answer: b

References

1. https://www.w3schools.com/java/java_constructors.asp
2. https://www.geeksforgeeks.org/java/constructors-in-java/
3. https://www.tutorialspoint.com/java/java_constructors.htm


Thank You