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Constructors

Constructors in Java, are special methods that are used to initialize objects of a class.

- They have the same name as the class and do not have return Type.
- Constructors are called when an object is created using the 'new' keyword.

Important points

Default

* If we dont define any constructor in the class, Java automatically provides a default constructor.
  ↳ Default constructor has no parameters and perform no explicit initialization.

* Overloading Constructors : Same as other methods in Java, constructors can be overloaded.
  ↳ means we can have multiple constructors in a class with different parameter lists.

- This type of constructor allow us to create objects with different initialization options.

- Each constructor can perform specific initialization tasks based on the provided arguments.

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* Chaining Constructors : In Java, constructors can call other constructors within the same class using the "this()" keyword, known as constructor chaining.

↳ It allows us to reuse the code and provide different levels of initialization.

↳ for ex. One constructor can call other constructor with default values, reducing code duplication.

* Implicit super constructor : If a class extends another class, the subclass's constructor implicity calls the superclass's constructor using the "super()" keyword.

↳ If the superclass has multiple constructors, the subclass constructor must explicity call one of them using "super()" as the first statement in the subclass constructor.

* Access Modifiers and Constructors : Constructors can have access modifiers like 'public', 'private', or 'protected'.

for ex.

- Constructors can be accessed from anywhere through 'public'
- " can be accessed within same class through 'private'.

↳ The choice of access modifier affects the visibility of the constructor.

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* No Return Type : Constructors do not have a return type, not even "void".

↳ Their purpose is solely to initialize the object, so they don't return any value.

* Initializing Blocks : Addition to constructors, Java provides initialization blocks, including static and instance initialization blocks.

↳ These blocks allows you to write code that runs during object creation or class loading.

- Initialization blocks are useful for performing additional initialization tasks or executing code that can not be placed directly in a constructor.

- Understanding Constructors is fundamental to working with Java Objects.

They provide a way to ensure proper initialization and state setup when creating new instances of class.

- By defining and utilizing constructors effectively, you can control the initial state of objects, set values, handle parameters and perform any necessary setup operations.