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Factory Pattern

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About the Course Creators

Course Name	Design Patterns - Factory pattern
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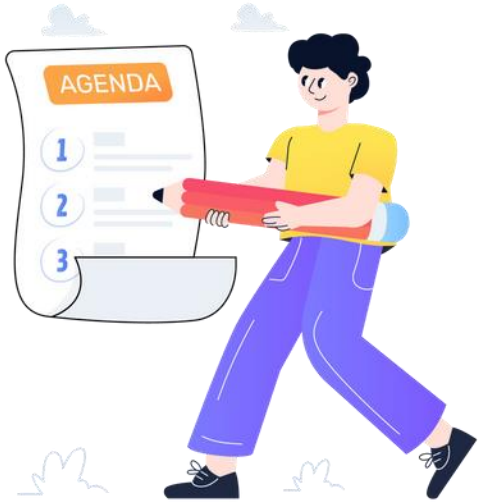
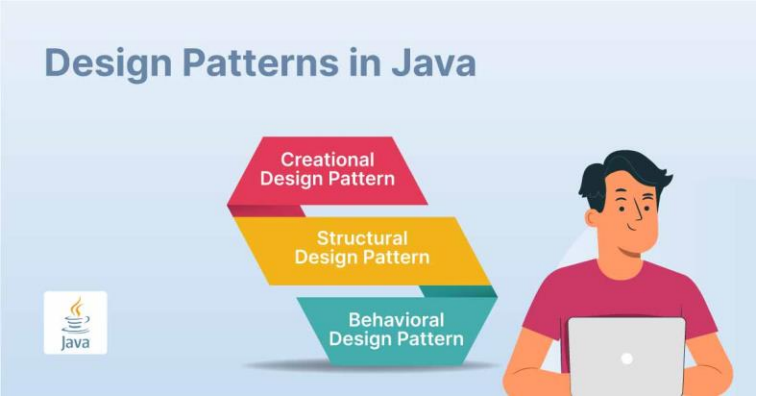
Agenda

- What is Design Pattern?
- What is Creational Design Pattern?
- What is Factory Pattern?
- When to Use?
- Implementation
- Positives



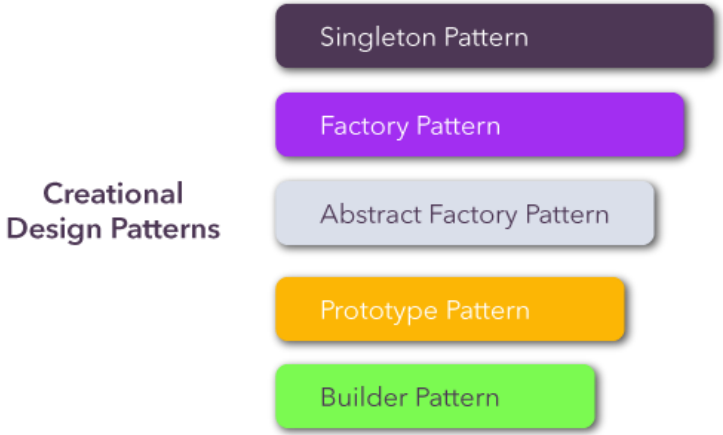
What is Design Pattern?

- Design patterns are the best, formalized practices a programmer can use to solve common problems when designing an application or system.
- Implementation of a particular design pattern in any application increases flexibility, maintainability and readability of the application.



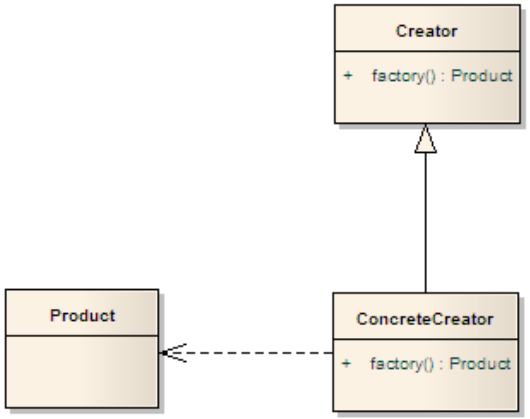
Creational Design Pattern

- Creational patterns provide object creation mechanisms that increase flexibility and reuse of existing code.
- In these patterns, the main focus is on creating objects while reusing existing code.



What is Factory Pattern?

- **Goal:** The Factory Method Pattern defines an interface for creating objects but let subclasses decide which class to instantiate.
- **Purpose:** It loosens the coupling of a given code by separating the product's construction code from the code that uses this product.



When to Use?

- You want to save system resources by reusing existing objects instead of rebuilding them each time.
- When we have a superclass with multiple sub-classes and based on input, we need to return one of the sub-class.

Positives

- You avoid tight coupling between the creator and the concrete products.
- *Single Responsibility Principle*. You move the logic of creating the product into another special class. It's a powerful way to manage object creation in a flexible manner.
- *Open/Closed principle*. You can add more types to the factory without breaking anything.

Reference Materials

- https://medium.com/javarevisited/top-creational-design-patterns-with-real-examples-in-java-54b238b8c092#174e
- https://refactoring.guru/design-patterns/factory-method
- https://www.baeldung.com/cs/factory-method-vs-factory-vs-abstract-factory

THANK YOU

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