**3. Container Concepts in Spring**

**2. Dependency Injection (DI):**

• **Theory:**

**1.Types of Dependency Injection:**

**♣ Constructor-based Dependency Injection:-**

* Dependencies are injected via the class constructor.
* Ensures that the object is created with all required dependencies (good for mandatory dependencies).

**♣ Setter-based Dependency Injection:-**

* Dependencies are injected via setter methods.
* Allows setting optional dependencies and modifying them after object creation.

**2. Advantages of DI in Spring:-**

* Loose Coupling – Reduces direct dependencies between classes, making code more flexible
* Better Maintainability – Components can be modified or replaced without affecting others
* Improved Testability – Easy to mock dependencies for unit testing.
* Centralized Object Management – Spring handles object creation and configuration.
* Code Reusability – Components can be reused in multiple applications.
* Less Boilerplate Code – No need for manual object creation (new keyword), reducing code complexity.
* Scalability – Makes applications more modular and easier to extend.