1. **Introduction to Spring Framework 2.Spring Beans:**

• **Theory:**

**1.Definition of a bean in Spring:-** A bean in Spring is an object that is managed by the Spring IoC (Inversion of Control) container. It is an instance of a Java class that is configured, instantiated, and managed by Spring.

**2. Scope of beans: Singleton, Prototype, Request, Session:-** Spring provides different bean scopes to define the lifecycle and instance creation strategy of a bean.

**1. Singleton (Default Scope)**

* Only **one instance** of the bean is created and shared across the application.
* Default scope in Spring.
* Best for **stateless beans** (e.g., service classes).

**3. Bean lifecycle: Initialization and destruction of beans:-** spring manages the entire lifecycle of a bean, including creation, initialization, usage, and destruction.

1. Bean Initialization (When the bean is created)

The Spring container creates an instance of the bean.  
 Dependencies are injected (via constructor or setter).  
 The bean undergoes initialization steps.

🔹 **Ways to Define Initialization Methods:**

1. Using @PostConstruct (Recommended in Java 5+)
2. Implementing InitializingBean Interface