Introduction to Spring

Topics

- What is Spring
- Why Spring
- What is Dependency Injection (DI)
- Advantages of Spring

What is Spring?

- Open source framework for developing enterprise applications in Java.
- It can also be used to develop console based applications, web applications, and REST APIs
- It is lightweight and promotes POJO based programming

Why Spring?

- Uses the concept of **Dependency Injection** to create loosely coupled applications

- Has many modules that supports enterprise development easier

What is Dependency Injection?

- A concept where the dependencies needed by a class is injected by the framework
- Two classes Employee and Address
- Class Employee {
- Address address;
- }
- Here Employee class depends on Address class. An instance of address can be injected using properties/constuctor

Example

- Class Employee {
- private String name;
- private Address address;

- // default constructor
- // para constructor
- // setter methods
- }

- Class Address {
- private String city;
- private String state;

- // default constructor
- // para constructor
- // setter methods
- }

Example

- Example
- Using Setter Method
- Address address = new Address();
- Employee emp = new Employee();
- emp.setAddress(address);

- Using Constructor
- Address address = new Address();
- Employee emp = new Employee(address);

Advantages of Spring

- Helps to develop ***enterprise applications/REST APIs and web applications***
- It does **not need an application server** for web/enterprise applications – uses servlet container such as ***Tomcat*** or some commercial product.
- Has Lightweight ***IoC containers.***
- Good for deploying applications on ***computers with limited memory*** and CPU resources.

Advantages of Spring

- Can ***integrate with any other framework*** easily like several ORM frameworks, logging frameworks, JEE, Quartz and JDK timers, other view technologies.
- Has APIs to ***transalate technology-specific exceptions*** (thrown by JDBC, Hibernate, or JDO, for example) into consistent, unchecked exceptions
- Provides ***a consistent transaction management interface*** that can scale down to a local transaction (using a single database, for example) and scale up to global transactions (using JTA, for example).
- ***Testing*** an application written with Spring is simple as it uses JavaBean style POJOs.