

1) What is a spring bean?
Any normal java class i.e. initialized by Spring
IOC container is called Spring Bean. Spring
uses `ApplicationContext` to get the Spring Bean
instance.

2) What is the diff btwn `BeanFactory` & `AppContext` in Spring.

BeanFactory: It instantiates beans lazily.

→ It has no support for Message Internationalization.

→ It has no event handling (or) event propagation mechanism.

ApplicationContext: Beans are instantiated when `AppContext` is loaded.

→ It supports Message Internationalization.

→ It provides event-propagation to the beans which are participating in listening to `AppContext`.

i.e. the beans implementing `AppListener` interface.

3) What is the significance of `BeanFactory` interface in Spring.

`BeanFactory` helps in creating Spring object with some basic functionality around object management through a well defined configuration framework.

Creating a BeanFactory from xml:
`BeanFactory factory = new XmlBeanFactory(new FileInputSource("beans.xml"));`

* What is ApplicationContext in Spring?

The ApplicationContext is the central interface within a Spring appn for providing configuration info to the appn.

The ApplicationContext provides:

→ Bean factory methods for accessing appn components.

→ The ability to load file resources in a generic fashion.

→ The ability to publish events to registered listeners.

→ The ability to resolve msgs to support internationalization.

→ provides inheritance support from a parent context.

⇒ What are the benefits of following IOC pattern?

1. Your code gets decoupled so you can easily exchange implementations of an interface with alternative implementations.

2. It is a strong motivator for coding against interfaces instead of implementation objects. It accepts in its constructor/setters & you can easily initialize them with the right objects in isolation.

⇒ What is IOC in Spring?

IOC is a design pattern followed to achieve loose coupling b/wn Appn Context components.

Spring uses this pattern to achieve it. It is named as Inversion of Control as we are taking back the control from dependent components & throwing it to some

container.

What is a core container in Spring?
A Bean-Factory is a implementation of the factory pattern that applies IOC to separate the appln's configuration & dependencies from the actual appln code. It is called the heart of Spring (core container) as it contains the IOC container.

What is Spring Frameworks? What are its main modules?

The Spring Framework is a Java platform that provides comprehensive infrastructure support for developing Java appln. Spring handles the infrastructure part so you can focus on your appln part. Currently it consists of 5 major modules divided again into sub-modules.

1. CORE CONTAINER: It consists of the core, bean, context & expression lang modules.
2. DATA ACCESS / INTEGRATION: It consists of JDBC, ORM, OXM, JMS & Transaction modules.
3. WEB: The web layer consists of the web, web-servlet, web-struts, & web-portlet modules.
4. AOP & Instrumentation: Spring's AOP module provides an AOP Alliance - compliant aspect-oriented programming implementation allowing you to define, for ex: method interception & pointcuts to cleanly decouple code that implements functionality that should be separated.
5. Test: It supports testing of Spring components with JUnit (or) testNG. It provides consistent loading of Spring Appln Context & mocking of

those contexts.

What are the benefits of Spring framework

- it is lightweight
- IOC (Inversion of control)
- transaction management.
- exception handling.
- aspect oriented.

What are the common implementations of the `ApplicationContext`.

1. `ClassPathXmlApplicationContext`: It loads the context definition from an XML file present in the class path, treating context definitions as classpath resources. Files 'beans.xml' should be present in classpath of app.

2. `FileSystemXmlApplicationContext`: It loads the context definition from an XML file present in the file system. Need to give absolute path of the file 'beans.xml'.

`ApplicationContext app = new FileSystemXmlApplicationContext(".....").`

3. `XmlWebApplicationContext`: It is used to represent a spring container web app. It loads bean definitions from more than one xml files. We can specify their locations in `contextConfigLocation` parameter in `ContextLoaderListener` in web.xml file.