1. What is spring

* It is Framework which is used to making light-weight, loosely coupled enterprises Application in java.
* It provides pre-defined API for Database Operations, Restful web services, micro services and security.
* We can develop distributed applications very faster. It is mainly for backend application development using java

1. What are the features of Spring Framework?
2. Predefined template
3. Loose coupling
4. Light weight
5. Easy to test
6. Powerful Abstraction
7. Fast Development (RAD)
8. What is Dependency Injection (DI)?

Dependency injection is a mechanism which is used to inject the dependency class into dependent class.

* Basically, when we write any program sometime it’s needed to create the object of some class, so dependency injection is to create object creation process, it will do that work automatically by own.
* For achieving this functionality, we have only configured that particular dependency class to dependent class in XML file or we can use Annotation also.

1. What are the types of DI?

Mainly there are 5 types of DI

* Constructor injection
* Setter injection
* Field Injection(@Autowired)
* Circular injection
* Lookup method injection (mostly we used 1 & 2 in our day by day life)

5)What is IOC in spring?

* The full form of IOC is inversion of control
* Basically, the spring container uses Dependency injection for managing the application components by creating wiring them together along with configuring and managing their overall life cycles.
* The instructions for the spring container to do the tasks will provided either by XML configuration, Annotation of java code. This whole process called as inversion of control

6)What is spring configuration File?

* It is XML file which is contains the information of classes and describes how those classes configured and linked with each other.
* It is called as XML configuration file.
* Sample code looks like:

<bean id=”obj1” class=” com.app. EmployeeService”>

<property name=”empType”>

<value>export</value>

</property>

</bean>

7)What is Spring Bean?

* It is the Objects forming the Backbones of the users Application and it instantiated, configured, wired, Managed by Spring IOC Container.
* Basically, it will create by the help of configuration code which is supply by user to IOC container.

8) Difference between Constructor and Setter Injection?

* By the constructor injection Partial injection is not possible but we can achieve partial injection by setter injection
* In the constructor injection new instance will create if any modification but it is not possible in the setter injection, we can’t achieve any new instance.
* If the bean have many properties, then we preferred constructor injection and if been have some few properties then we preferred for setter injection.
* Constructor injection doesn’t override the setter properties but setter injection overrides the constructor properties

9) What is the Bean-Scope provided?

Spring provided 5 types of scope there are

1. Singleton
2. Prototype
3. Request
4. Session
5. Global-session (not exist in new versions of spring)

10)What is Bean wiring?

* When the beans are combined together inside the spring container, that is called wired or bean wiring.
* The spring container should know what beans are needed and how the beans are dependent each other while wiring beans.
* Ex: Combine EmployeeService object with EmployeeRepository object

11)What is Autowiring in spring & what are different modes it has?

* The spring framework can inject dependency Automatically.
* The IOC container will first detect those dependencies specified in the configuration file and the relationship between the beans and then it will inject Automatically this process is called Autowiring.
* It has 5 modes these are

1. No
2. Byname
3. byType
4. constructor
5. autodetect

12)What is the difference between @Autowired and @Inject?

* Both annotations are used for same purpose means @Autowired annotation is used for Autowiring in spring framework.
* @inject also used for same purpose but difference is @Inject is a standard annotation for Dependency injection and the @Autowired is specified annotation in spring for dependency injection
* @Inject is part of the java CDI (Context and dependency injection) standard introduced in java EE^(JSR-299)

13) What is the difference between @Component and @Bean

* @Component creates object inside spring container. It can be used only if we have source code of a class
* If a class is pre-defined and wants to creates object inside container then we need to use @Bean along with @Configuration

14) How many types of IOC Containers are there in spring?

1) Bean Factory: BeanFactory is like a factory class that contains a collection of beans. It instantiates the bean whenever asked for by clients.

2) ApplicationContext: The ApplicationContext interface is built on top of the BeanFactory interface. It provides some extra functionality on top BeanFactory, like :Annotations support, Multi container system.

15)What is the use of @Required annotation in spring?

@Required is applied to bean property setter methods

* It is indicating that the affected bean property must be populated at the configuration time with the help of an explicit property value in a bean definition or with auto wiring.

16) What is the use of @Autowired ?

* It is used to link (inject) two beans inside spring container
* Mostly recommended using field injection

17) what is the use of @Qualifier

* When we create more than one bean of the same type and want to wire only one of the them with a property, we can use the @Qualifier annotation along with @Autowired to remove the ambiguity by specifying which exact bean should be wired

18) What is the @Primary annotation in spring?

* Indicates that a bean should be given preference when multiple candidates are qualified to auto wired a single – valued dependency.
* In case of Autowiring process, if no Qualifier is used, @Primary is given highest priority.

19)What are lifecycle methods in spring?

* Init and destroy methods are called as Life Cycle methods in spring
* They are executed by default by spring container while creating object

20)What are different ways of writing Lifecycle methods in spring?

* Using XML (also called Declarative approach)

<bean init-method=”” destroy-method=””></bean>

* Using Spring interface (also called Programmatic Approach)

Implement interfaces: InitalizingBean; DisposableBean

* Using Annotation

@PostConstrut and @PreDestroy

21) What are the common implementations of the ApplicationContext?

* The FileSystemXmlApplicationContext container loads the definitions of the beans from an XML file. The full path of the XML bean configuration file must be provided to the constructor.
* The ClassPathXmlApplicationContext container also loads the definitions of the beans from an XML file. Here, you need to set configuration XML file in classpath.
* The WEbXMLApplicationContext container loads the XML file with definitions of all beans from within a web application

23) What are stereo Type annotations?

5 types

1)@Service

2)@Component

3)@Repository

4)@Controller

5)@RestController

24)What is Profiles in Spring?

* Multiple Environments like Stage, production, Testing, UAT
* Profiles: Loading Properties based on Environment
* We can active current profile using

--spring.profiles.active =dev( by passing at runtime)

25)What is inner bean class