HW#2

1 – IOC and DI means ?

Inversion of Control(IOC) is a software design principle. The object instances of application are managed with IOC, reducing dependencies is intended. In this way, this management are done by the Framework, not the developer.

Dependency Injection(DI) is a application method of IOC. DI is a process that separate the parts that can create dependencies . For example if a class object is used in another class, DI says do not use new keyword, says take the object as a parameter from setter method or constructor. Thus, these two classes are isolated from each other.

2 – Spring Bean Scopes ?

Beans are reusable objects and have lifecyle. Scope is activity area for beans. Spring bean scopes are managed by IOC Container and determine the occuration time and form of Beans objects.

There are 5 types of Spring bean scopes : Singleton, Prototype, Request, Session, Global Session.

3 – What does @SpringBootApplication do ?

@SpringBootApplication is the main function actually, the application starts with this method.

@SpringBootApplication contains @Configuration, @EnbaleAutoConfiguration, @ComponentScan annotations.

@Configuration specifies that a class is a bean class.

@ComponentScan without parameters, scans to bean classes in the package of the current class and saves.

@EnableAutoConfiguration provides to do auto settings.

4 – What is Spring AOP ? Where and How to use it ?

Concerns are functions except our core function like logging, performance, transaction management, security, caching, validation, exception handling.

AOP is a programming paradigm that decrease complexity and increase modularity by separating of cross-cutting concerns. So, AOP says these concerns must be seperated.

AOP saves us from repeating codes and dependency.

With aspect,advice and pointcut we use AOP.

Join point is a method which is not AOP method.

Advice is code which is run before or after join point.

Pointcut is expression which determine the which advice code is run.

Aspect is class which have advice.

5 – What is Singleton and where to use it ?

Singleton is one of the types of Spring Bean Scopes, determines the activity area of the bean.

Singleton is default types of Spring Bean Scopes in Java. Singleton provides to create only one the from bean.

6 – What is Spring Boot Actuator and Where to use it ?

Spring Boot Actuator activates production features (health check, disk usage, heap dump vs.) of program automatically and interacts with different http endpoints.

7 - What is the primary difference between Spring and Spring Boot ?

Spring boot has minimal configurations, is faster than Spring and aims to shorten codes.

8 – Why to use VCS ?

Version Control Systems provides below clauses:

Following code updates.

Rollback to previous version.

Logging changing history.

Working at same codebase with other developers at the same time.

Showing conflicts.

9 – What are SOLID Principles ? Give sample usages in Java ?

S is for single responsibility principle. For example we have a class for database processes in java, this class hasn't work for log processes also.

O is for open/closed principle. A class or method protect its properties and close for changing them but open for new properties. For example, we have database interface and just use Mysql for db but Oracle will be added, this db inheritance should not change, should open for new db.

L is for Liskov substitution principle. We should able to use subclass instead of superclass without changing code. In java interface methods must be overridden in subclass.

I is for Interface segregation principle. Interfaces must have necessary responsibilities. For example we have Animal interface if we add a method that named bark, the Animal interface doesn't fit all animals.

D is for Dependency Inversion Principle. Superclasses don't depend on subclasses. In java if we change a method in subclass, superclass is not influenced.

10 - What is RAD model ?

RAD is a software development process for fast software development. Process prototyping without detailed planning in RAD model.

11 - What is Spring Boot starter ? How is it useful ?

Spring Boot provides starters for simplify build configurations. When we want to add a new technology, we don't need search and implement in our program,starters do these for us.

12 – What is Caching ? How can we achive caching in Spring Boot ?

For frequently used datas, caching is used. So, program answers to user quickly. In Spring boot, @EnableCaching is used for caching.

13 – What & How & Where & Why to logging ?

Logging is recording, can use for protection, checking, controlling etc. If production system fails, can be fixed quickly with logging. Logging structure can be different each systems.But Spring boot use logBack default for ex.

14 - What is Swagger? Have you implemented it using Spring Boot?

With swagger, people or computers can see, read and understand features of REST API without reaching source codes.So, Swagger provides documentation. I have not implemented yet.