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Q. Difference between interface and abstract class

Ans Interface have only ^{one} abstract methods whereas Java 8+ default methods as well while in abstract class have both abstract and concrete method. A class can implement multiple interfaces but extends only one abstract class whereas interface focus on behaviour abstract classes on structure.

Q. Can an abstract class implement multiple interface and also extends another abstract class simultaneously?

Ans Yes abstract can implement multiple interfaces and extend one abstract class at the same time. This allows to inherit methods from the abstract class and provide implementation for interface methods while keeping some method abstract for subclasses.

Q. Why OOPS are important?

Ans OOPS stands for object oriented programming. It is very very important because it makes code organize, reusable and scalable if uses classes and objects structures. Programmes ensuring better security, flexibility and maintainability through concepts like encapsulation, inheritance, polymorphism, and abstractions.

Q. Difference between JDK, JRE, and JVM?

JDK stands for Java development kit. It provides tools to develop Java programmes excluding JRE, JVM.

JRE stands for Java run time environment. It runs Java applications. Includes JVM.

JVM stands for Java virtual machine which execute Java code by converting it to machine code.

Q. can we install JRE separately without JDK if yes then how will it impact Java development and execution

A. Yes JRE can be installed separately to run Java application but it cannot compile or develop Java programs since lacks development tools like Javac for Java development but JDK did as it includes both JRE and compiler.

Q. if a static block thrown an exception, what happens to the class loading process?

A. If a static block thrown an exception the class fails to load and exception initialization occurs. This means class cannot be used and any attempt to access to result in run time error and stops the execution.

Q. Difference between Soap and rest

A. Soap is a protocol that uses XML for communication while Rest is an architecture that supports multiple formats like JSON and XML and Soap is slower and more secure where Rest is faster and lightweight and widely use for web services

Q. Why do some financial services still prefer Soap over Rest? prefer Soap because it apposes ~~for security~~ strong security that is WS security by levering messaging and ACID compliant transaction it ensure data integrity and structures making it

Q How to run Springboot applications?

A To run a Springboot application we use main method inside the Springboot application annotation, class run it using IDE like intelliJ, eclipse command line like Mvn we can use other and last we deployed in a server.

Q What are the tools used for project development?

A project development we tools like IDE intelliJ, eclipse for coding, maven, gradle for build management git for version control Jira for tracking Jenkins for CI/CD docker container for deployment Splunk for monitoring

Q. What are steps to create microservices?

A To create microservices we define small independent services we choose a framework like spring boot to create REST APIs we use database per service and secure with auth we manage with docker connections enable Splunk also and we use kafka for communication

Q Which annotations used in your project?

A In my project I use @RestController, @RequestMapping, @Autowired, @Service, @Repository, @Entity, @Transactional, @SpringBootApplication and many more. These helps in handling request dependency injection, database operation and transaction and application configuration.

Q. How to use 2 databases in springboot?

A. In database in a springboot define two data sources beans, create separate entity manager factory and transactional manager and use primary annotation for the main DB confirm them in application.properties and use repositories according to each database.

Q. How to use session methods?

A. In hibernate session methods like save, update, delete, get and load are used to interact with the database. first get a session from the session factory perform operations inside a transaction then commit and close the session.

Q. How can you maintain a session in a stateless REST API while ensuring scalability?

A. In a stateless REST API maintain session using just, JSession web token and redis base or session storage. JWT stores user data in a token while Redis keeps session data centrally, ensuring assurance across multiple services without losing session consistency.

Q. What is @Service and @Component?

A. Service and component are Spring annotations use for bean creation a service annotation is for business logic classes while component annotation is a generic annotation for any spring managed class both makes objects available for dependency injection using autowire.

Q. Can a class be annotated with both `@Service` and `@Component`?

A. Yes a class can have both service and component annotation but it's unnecessary because Service annotation is specialized version of a component using Service annotation is recommendable for convenience and understanding of business logic classes.

Q. Which is main annotation in Springboot project?

A. The main annotation in Springboot project is `Springboot application` which combined configuration enable auto configuration and component scan it starts application enables auto configuration and scan for spring components making it entry point of the project.

Q. How do you handle exception in Springboot and which annotations used for exception?

A. In a Springboot exception are handled using controller advice and exception handlers so next controller advice is used to for global exception handling in rest api also a response status sets HTTP status code for specific exception and proper ^{error} response.

Q. How do you test your application?

A. So i test my application using Junit for unit test cases mocking for mocking Springboot test for entity postman for api testing and selenium for ui testing CI/CD tools like Jenkins automate test execution.

Q. How can you ensure 100% test coverage in a Springboot application?

Ans So to ensure 100% test coverage in Springboot application write unit test like Junit mockito for all methods use integration test for apis cover as cases mock dependencies and generate reports using Jacoco to track uncovered code

Q. If any problem in your application is running how would you find it?

Ans So if my Springboot application has issues while running i check logs through the splunk and any other platform debugging break points in IDE and analyze stack traces use postman for API testing monitoring with actuators checks database connections and verify configuration files

Q What is agile and what is SDLC?

Ans So agile is a flexible software development method that delivers work in small fast interactions with continuous feedback as a SDLC it is a process of building software in steps like planning, designing, coding, testing and deployment

Q What is the current company sprint duration?

Ans Sprint duration varies from company to company but typically it last two weeks in agile development some teams may use one week and four weeks sprint as well as project needs the duration is set to ensure continuous delivery and quick feedback cycle.

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Q. write a program for singleton design pattern.