1. What is Spring Boot and what are its Benefits?

* Spring Boot is an open source framework of Java for development of java application.
* It makes easier to create and run Java applications.
* No required to connect Tomcat server manually.
* It follows the conventional, not required of all the configuration

Advantages :-

* It gives inbuilt server configuration
* No requirement of xml file for creating the bean

1. Why Spring Boot is preferred over any other framework?

* Spring Boot is a Java-based framework that is preferred over other frameworks because it offers many advantages, including:
* Reduced development time:- Spring Boot reduces the time that takes to develop applications by minimizing the need for manual configuration.
* Easy to use:- Spring Boot is easy to launch, customize, and manage.
* Integrated servlet :- Spring Boot comes with integrated servlet like Tomcat, that reduces the need for manual server setup and configuration.

1. What are the key dependencies of Spring Boot?

* These are the key dependencies of Spring Boot:-

1. Mysql Driver :- It provides connection between your database and application
2. Spring Web :- It provides Spring MVC (Model-View-Controller) and RESTful web services. This means your application can handle requests like “show all users” or “delete this profile,” and send proper responses back to the user. Having the embedded server like Tomcat, so you don’t need to install manually.
3. Spring Boot DevTools :- It is like refresh button. It automatically reloads your application when it detects changes in your code, so you don’t need to manually restart the server every time. You have to only relaunch the server .
4. Spring Web Services :- It allows you to build SOAP web services and RestAPI services.
5. Spring Data JPA :- It perform database operation.. JPA internally calls the Hibernate. So Hibernate we get directly and It also allows you to define repositories (like “UserRepository” or “ProductRepository”), which can automatically handle CRUD operations (Create, Read, Update, Delete) without writing complex SQL.
6. What are the advantages of Spring Boot?

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1. What are the features of Spring Boot?

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* Easy to use:- Spring Boot is easy to launch, customize, and manage.
* Integrated servlet :- Spring Boot comes with integrated servlet like Tomcat, that reduces the need for manual server setup and configuration.

1. How do you create a Spring Boot application using Maven?

* 1st Step:- To Download and install Spring tool suite.
* 2nd Step:- Click on File -> Select New -> Select Spring Starter Project-> Name- Your Project Name -> Type -Maven-> Java Version- 17-> Packaging -Jar-> Language -Java-> Group- com.demo -> Artifact- Your Project Name-> Click on Next
* 3rd Step:- Now add key Dependency of Spring Boot like :- Mysql Driver, Spring Web, Spring Web Services, Spring Boot DevTools, Spring Data JPA
* 4th Step:- Click on Finish
* Then Automatic Project created
* In src/main/resources , there is a application.properties -> in this file give
  + spring.application.name=your Project name automatic come
  + spring.datasource.name=test
  + spring.datasource.url=jdbc:mysql://localhost:3306/your database name
  + spring.datasource.username=root
  + spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
  + spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQL8Dialect
  + spring.jpa.hibernate.ddl-auto=update
  + spring.mvc.view.prefix=/views/
  + spring.mvc.view.suffix=.jsp
* In src/main/java, make packages for Controller, Model. Repository, Services

1. What are the Spring Boot Annotations?

* @SpringBootApplication:- This annotation marks the main class of a Spring Boot application. It combines three annotations:
  + @Configuration
  + @EnableAutoConfiguration
  + @ComponentScan
* @RestController :- This is a specialized version of @Controller that adds @ResponseBody functionality
* @RequestMapping:- Maps HTTP requests to specific handler methods
* @GetMapping, @PostMapping, @PutMapping, @DeleteMapping :- These are specialized versions of @RequestMapping that simplify the mapping of HTTP methods to specific handler methods.
* @Autowired:- It used for access all the properties and method.
* @Component :- It is used to denote a class as Component. It means that Spring framework will autodetect these classes for dependency injection.
* @Service :- It is used to declare any class as a Business logic (Service) class
* @Repository :- It is for the DAO, or repository class where the database operations are performed.

1. What are the Spring Boot properties?

* In Spring Boot there is application.properties file which having server settings, database connections, logging, security configurations
  + spring.application.name=your Project name automatic come
  + spring.datasource.name=test
  + spring.datasource.url=jdbc:mysql://localhost:3306/your database name
  + spring.datasource.username=root
  + spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
  + spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQL8Dialect
  + spring.jpa.hibernate.ddl-auto=update
  + spring.mvc.view.prefix=/views/
  + spring.mvc.view.suffix=.jsp

1. What does REST stand for?

* REST stands for **Representational State(data) Transfer**.
* It is the type of Web Services.
* It is in the form of JSON(Javascript Object Notation).
* Method of REST API is:-
* POST -> For Insert the Data
* GET -> For Get the Data
* DELETE -> For Delete the Data
* PUT-> For Update the Data

1. What is a resource?

* In a Spring Boot application, a resource typically refers to an entity or object that can be accessed, manipulated, and represented over a network, especially through a RESTful API.
* Key Aspects of Resources in Spring Boot:-
* Entity Representation:- like in a user management application, a User entity can be considered a resource.
* Resource Identifier:- Each resource is identified by a unique URI (Uniform Resource Identifier). For example: A single user might be accessible at /api/users/{id}and A collection of users might be accessible at /api/users.
* CRUD Operations:- Resources typically support standard CRUD operations through HTTP methods like GET,PUT,DELETE,POST.
* Controllers:- Resources are usually managed by controllers in a Spring Boot application. Controllers handle incoming HTTP requests and define the methods that perform operations on the resources.

1. What is the difference between @Controller and @RestController?

* Both @Controller and @RestController are used to define controller classes
* @Controller:- It is used to define a standard MVC controller. In this we can return a view(jsp page) in Spring Web MVC. In thiswe need to use @ResponseBody on every handler method.
* @RestController:- @RestController annotation is a special controller used in RESTful Web services, and it’s the combination of @Controller and @ResponseBody annotation. In this , we can not return a view. In this, we don’t need to use @ResponseBody on every handler method.