Review

Challenge #1 — Scored

Your Answers | Your Notes (Editable)

1. What is Spring MVC?

SPRING MVC (Model-View-Controller) is a framework in the Spring ecosystem that is used to build web applications. It provides a way to structure your web application and separates the concerns of data (Model), presentation (View), and user interaction (Controller).

2. What is Autowiring in Spring boot?

AUTOWIRING in Spring Boot is a way to automatically inject dependencies into Spring beans without explicit manual wiring. Spring Boot uses component scanning to discover beans in the application context and automatically wire them together.

3. Show an example of a repository with methods that can search a MYSQL DB by user email of the user

```
1 import
  org.springframework.data.jpa.repository.JpaRepository;
2 import org.springframework.stereotype.Repository;
3
4 @Repository
5 public interface UserRepository extends
  JpaRepository<User, Long> {
6     User findByEmail(String email);
7 }
```

4. What is Dependency Injection?

DEPENDENCY INJECTION is a design pattern in which components are provided with their dependencies instead of creating or looking for them on their own. This helps to decouple the components and makes the system more maintainable and testable.

5. What is thymeleaf?

THYMELEAF is a modern server-side Java template engine for web and standalone environments. It can process, HTML, JavaScript, CSS, and even plain text.

6. What is the function of dispatcherServlet in Spring MVC?

The DispatcherServlet plays a central role in the Spring MVC framework. It helps to handle the incoming user requests and send them to the appropriate controller for processing. It also handles the view resolution process and manages the flow of the request through the Spring MVC application.

7. List and explain 4 relationship mapping in JPA.

```
In JPA (Java Persistence API), relationship mappings define the relationships between entities in a database. There are four main types of relationships in JPA:

One-to-One: Each entity instance is related to exactly one other entity instance.
One-to-Many: Each entity instance can be related to multiple other entities.
Many-to-One: Multiple entity instances can be related to a single other entity instance.
Many-to-Many: Multiple entity instances can be related to multiple other entities.
```

8. What is the Spring IOC?

```
Spring IOC (Inversion of Control) is a design principle in Spring framework where the control of object creation and lifecycle is shifted from the application code to the Spring container. This helps in achieving loose coupling between different components of the application and makes the code more maintainable and testable.
```

9. Create a sample controller class

```java
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class SampleController {

    @GetMapping("/view")
    public String hello() {
        return "This is a view!";
    }

    @PostMapping("/add")
    public int addNumbers(@RequestBody int num1, @RequestBody int num2) {
        return num1 + num2;
    }
}
```

10. What are the advantages of Spring Boot?

1. Spring Boot provides a fast and easy way to set up a Spring application with minimal configuration. It comes with pre-configured defaults for most things, reducing the amount of setup required.

2. Spring Boot applications are standalone, meaning they do not require an external application server. You can package your Spring Boot application as a JAR file and run it using an embedded server like Tomcat or Jetty.

3. Spring Boot builds on top of the Spring framework, leveraging its rich ecosystem of libraries and tools. It provides integration with other Spring projects such as Spring Data, Spring Security, and Spring Cloud.

4. Spring Boot uses auto-configuration to automatically configure your application based on dependencies in the classpath. This eliminates the need for manual configuration in many cases, making development faster and more efficient.

5. Spring Boot provides production-ready features out of the box, such as metrics, health checks, and externalized configuration. This helps in monitoring and managing your application in a production environment.

Overall, Spring Boot simplifies the development of Spring applications and helps developers focus on writing business logic rather than boilerplate configuration.

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