Spring Boot Annotations Cheat Sheet with Examples and Notes

1. @SpringBootApplication
   - Example:
   @SpringBootApplication
   public class MyApp { public static void main(String[] args) { SpringApplication.run(MyApp.class, args); } }
   - Note: Use at the main class to enable auto-configuration and component scanning.

2. @RestController
   - Example:
   @RestController
   public class MyController { @GetMapping("/hello") public String hello() { return "Hello"; } }
   - Note: Use for REST APIs where responses are JSON or XML.

3. @RequestMapping
   - Example:
   @RequestMapping("/api")
   public String api() { return "API Endpoint"; }
   - Note: Use to map HTTP requests at the class or method level.

4. @GetMapping / @PostMapping
   - Example:
   @GetMapping("/users")
   public List<User> getUsers() { return userService.getAllUsers(); }
   - Note: Use for HTTP GET, POST, PUT, DELETE methods for clarity.

5. @Autowired
   - Example:
   @Autowired
   private UserService userService;
   - Note: Use for dependency injection to automatically inject beans.

6. @Service
   - Example:

   @Service

   public class UserService { public List<User> getAllUsers() { return null; } }
   - Note: Use for service layer classes containing business logic.

7. @Repository
   - Example:

   @Repository

   public interface UserRepository extends JpaRepository<User, Long> {}
   - Note: Use for DAO classes interacting with the database.

8. @Component
   - Example:

   @Component

   public class MyComponent { public void doSomething() {} }
   - Note: Use for general-purpose Spring-managed components.

9. @Entity
   - Example:

   @Entity

   public class User { @Id @GeneratedValue private Long id; private String name; }
   - Note: Use for database entity classes.

10. @Table
    - Example:

    @Table(name="users")

    public class User {}
    - Note: Use to define table mapping for an entity.

11. @Id
    - Example:

@Id private Long id;

- Note: Use to define primary key field.

12. @GeneratedValue

  - Example:

  @GeneratedValue(strategy=GenerationType.IDENTITY) private Long id;

  - Note: Use for auto-generating primary key values.

13. @Value

  - Example:

  @Value("${app.name}") private String appName;

  - Note: Use to inject values from application.properties.

14. @Configuration

  - Example:

  @Configuration

  public class AppConfig { @Bean public MyBean myBean() { return new MyBean(); } }

  - Note: Use to define configuration classes.

15. @Bean

  - Example:

  @Bean

  public MyBean myBean() { return new MyBean(); }

  - Note: Use to declare Spring beans.

16. @EnableAutoConfiguration

  - Example:

  @EnableAutoConfiguration

  public class App {}

  - Note: Use to let Spring Boot configure beans automatically.

17. @ComponentScan

  - Example:

```
@ComponentScan(basePackages="com.example")
public class App {}
```

- Note: Use to specify packages for component scanning.