Common Annotations in a Spring Boot App

@SpringBootApplication

This annotation marks the main class of a Spring Boot application, combining **@Configuration**, **@EnableAutoConfiguration**, and **@ComponentScan**. It serves as the entry point, enabling Spring Boot's autoconfiguration and component scanning for seamless application setup.

@SpringBootApplication

```
public class MoviesApiApplication {
   public static void main(String[] args) {
      SpringApplication.run(
          MoviesApiApplication.class, args);
   }
}
```

@Controller

Identifying a class as a Spring MVC controller, this annotation handles HTTP requests, responding with the appropriate view or data. It plays an important role in web request processing.

```
@Controller
public class ProductController {
    @Autowired private ProductApiClient client;

    @GetMapping("/products")
    public String getProducts(Model model) {
       var products = client.listAllProducts();
       model.addAttribute("products", products);
       return "products";
    }
}
```

@RestController

Similar to **@Controller**, this annotation is specifically designed for RESTful web services. Combining **@Controller** and **@ResponseBody**, it simplifies the development of RESTful APIs by automatically converting methods' return values to JSON or XML.

```
@RestController
@RequestMapping("/movies")
public class MoviesController {
    // ...
    @GetMapping("/{id}")
    public Movie getMovie(@PathVariable String id) {
        return movieService.validateAndGetMovie(id);
    }
}
```

@RequestMapping

This annotation maps HTTP requests to handler methods within a controller. It specifies the URL patterns to handle and the methods to execute, providing a way to define the request-handling logic.

```
@RestController
@RequestMapping("/movies")
public class MoviesController {
    // ...
    @GetMapping("/{id}")
    public Movie getMovie(@PathVariable String id) {
        return movieService.validateAndGetMovie(id);
    }
}
```

@Autowired

Used for automatic dependency injection, it reduces the need for manual bean wiring. Whether applied to a constructor, field, or method, it signals that Spring should inject the required dependency.

```
@Controller
public class ProductController {
    @Autowired private ProductApiClient client;

    @GetMapping("/products")
    public String getProducts(Model model) {
       var products = client.listAllProducts();
       ...
    }
}
```

@Service

Marking a class as a service, this annotation is typically used for encapsulating business logic. It aids in component scanning and code organization, helping to structure an application with a dedicated service layer.

```
@Service
public class MovieServiceImpl implements MovieService {
    @Autowired
    private MovieRepository movieRepository;

@Override
    public List<Movie> getMovies() {
        return movieRepository.findAll();
    }
}
```

@Repository

Identified as a Spring Data repository, this annotation allows a class to interact with a data source, handling database operations and exceptions translation. It simplifies data access in a Spring application.

@Repository

```
public interface MovieRepository extends
   CrudRepository<Movie, String> {
}
```

@Configuration

Designating a class as a configuration class, this annotation defines application beans, replacing XML configuration with Java-based configuration. It plays an important role in configuring the Spring application context.

@Bean

This annotation is used to declare a method as a bean definition. This method produces a bean instance that Spring will manage within its container.

@Component

Serving as a generic stereotype annotation for any Spring-managed component, it marks a class as such, allowing it to be automatically detected and configured by Spring. It simplifies the process of declaring and managing Spring components.

@Component

```
public class NewsProducer {
   public void send(NewsMessage message) {
      // ...
   }
}
```

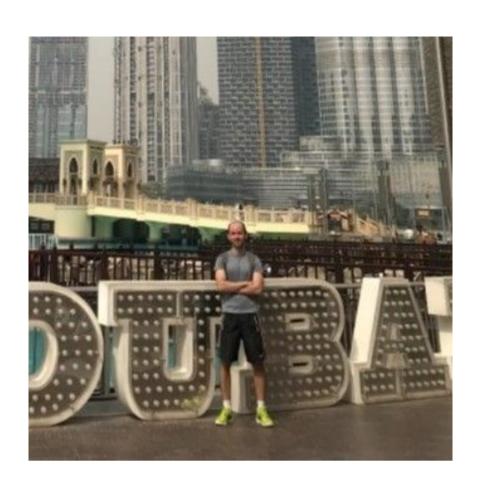
@Value

This annotation injects values from properties files or environment variables into fields, providing a clean and concise way to handle external configuration. It simplifies the retrieval of configuration values within the application.

```
@Configuration
public class MovieApiClientConfig {
    @Value("${movie-api.url}")
    private String movieApiUrl;
    // ...
}
---
movie-api.url=http://localhost:9080
```

That's all

I hope you enjoy it!



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