SME Notes: REST - Country Web Service

1. What happens in the controller method?

In the `CountryController` class, when a request is made to `/country`, the controller method annotated with `@RequestMapping("/country")` or `@GetMapping("/country")` is triggered. This method typically:

- Loads the Spring XML configuration file using `ApplicationContext` (usually `ClassPathXmlApplicationContext`).
- Retrieves the bean named `in` (or whatever ID is assigned in the XML) of type `Country`.
- Returns this `Country` object as the response.

Example:

```
@GetMapping("/country")
public Country getCountryIndia() {
    ApplicationContext context = new
ClassPathXmlApplicationContext("country.xml");
    Country country = (Country) context.getBean("in", Country.class);
    return country;
}
```

2. How the bean is converted into JSON response?

Spring Boot automatically uses **Jackson** (via `spring-boot-starter-web`) to convert Java objects into JSON responses. When the `Country` object is returned from the controller:

- The object is passed to `HttpMessageConverter`.
- Jackson's `ObjectMapper` serializes the object into JSON format.
- The `@RestController` annotation ensures that the object returned is written directly to the HTTP response body.

Sample Output:

```
{
  "code": "IN",
  "name": "India"
}
```

3. In Network Tab of Developer Tools (Browser)

To view the HTTP header details:

- Open Chrome Developer Tools (F12) > Network tab.
- Refresh the page or make the API call (`http://localhost:8083/country`).
- Click on the request name (e.g., `country`).
- Under the **Headers** tab:

- **Request Headers** show what was sent (method, URL, Accept type).
- **Response Headers** show what was received.

Example Response Headers:

```
Content-Type: application/json
Content-Length: 35
Date: Wed, 10 Jul 2025 08:00:00 GMT
```

4. In Postman - Headers Tab

- Send a GET request to `http://localhost:8083/country`.
- Switch to the **Headers** tab in the response section.
- You will see key HTTP response headers such as:

Example:

```
content-type: application/json
transfer-encoding: chunked
date: Wed, 10 Jul 2025 08:00:00 GMT
```

These headers indicate that the server has returned a JSON response, and help the client (Postman or browser) interpret the response correctly.