**Name: Sureshkumar V P**

**Company: MSG Global Solutions India Private Limited**

**Country:** **India**

**ASSIGNMENT**

**EU COUNTRY NAMES - TOP 3 HIGHEST STANDARD & TOP 3 LOWEST REDUCED VAT RATES**

**09-12-2022**

**Objective**

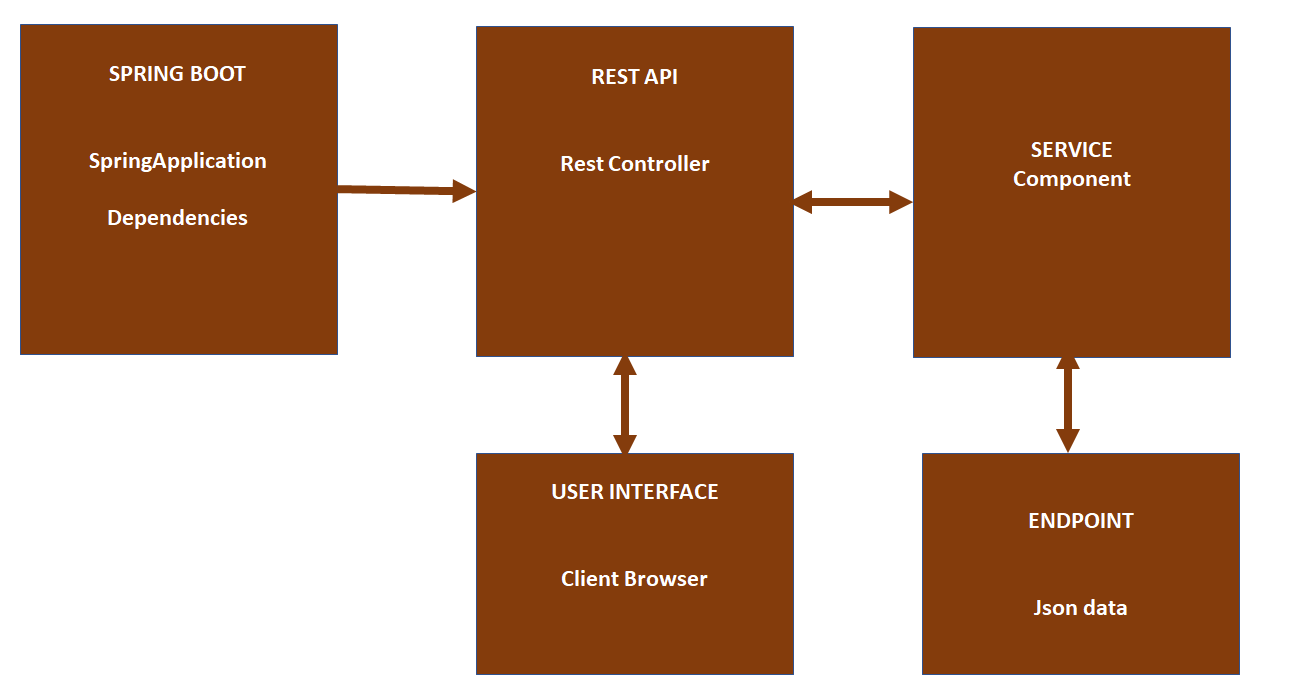
Build a microservice which exposes a REST API for:

• Return three EU countries with the highest standard VAT rate

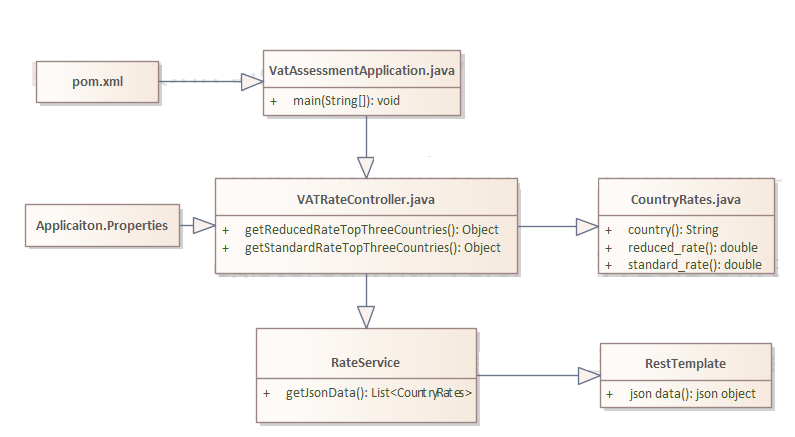
• Return three EU countries with the lowest reduced VAT rates

Input: [https://euvatrates.com/rates.json](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Feuvatrates.com%2Frates.json&data=05%7C01%7C%7C291163ebb0834e1093ee08dad697583a%7Cc2350a4a56c64ec19195e636c90735d6%7C0%7C0%7C638058242808176820%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=Nqx2a3rDR3E0nwY%2FOKMsH0gfzG2BFNE5tS1MowXBdy8%3D&reserved=0)

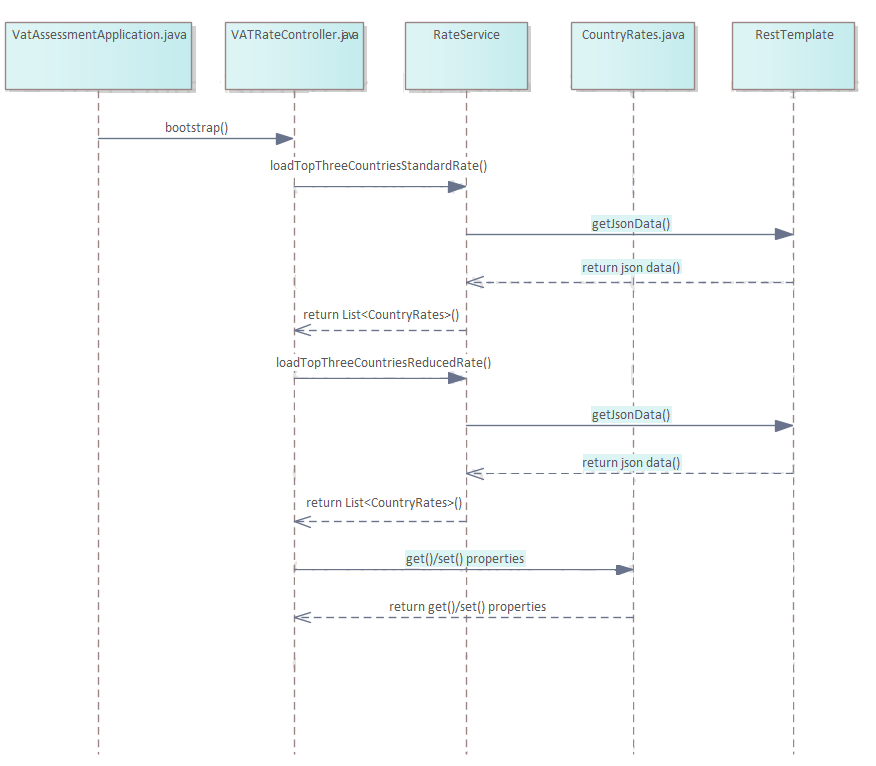
**High Level Diagram**

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**Class Diagram**

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**Sequential Diagram**

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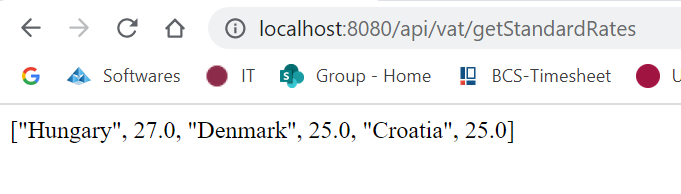
**Test Results**

* **Input:** [https://euvatrates.com/rates.json](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Feuvatrates.com%2Frates.json&data=05%7C01%7C%7C291163ebb0834e1093ee08dad697583a%7Cc2350a4a56c64ec19195e636c90735d6%7C0%7C0%7C638058242808176820%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=Nqx2a3rDR3E0nwY%2FOKMsH0gfzG2BFNE5tS1MowXBdy8%3D&reserved=0)



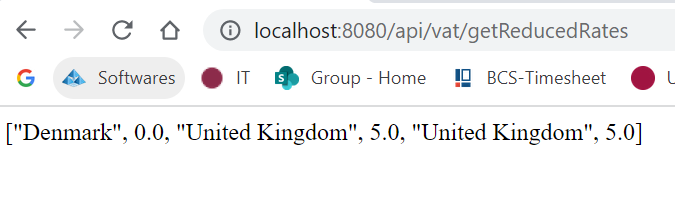
* Return three EU countries with the highest standard VAT rate

**Output URL:** [**http://localhost:8080/api/vat/getStandardRates**](http://localhost:8080/api/vat/getStandardRates)



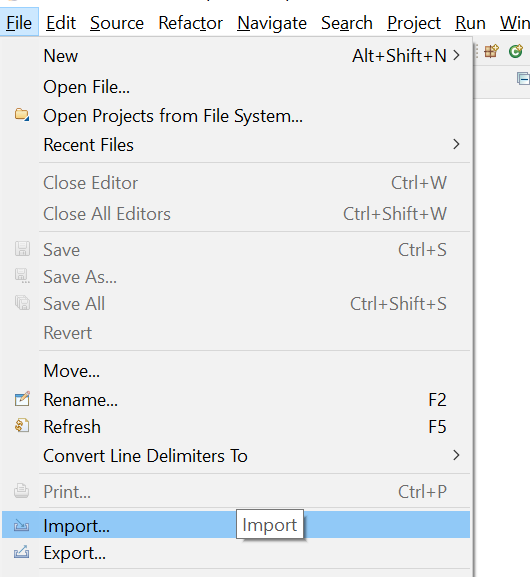
* Return three EU countries with the lowest reduced VAT rates

**Output URL:** [**http://localhost:8080/api/vat/getReducedRates**](http://localhost:8080/api/vat/getReducedRates)

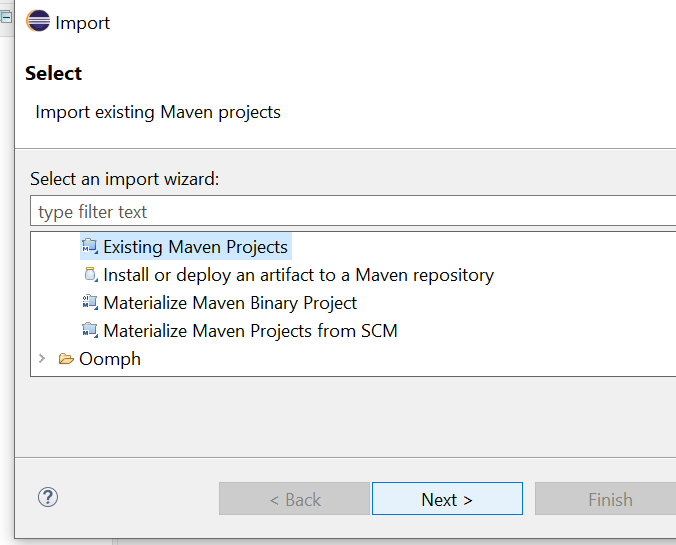


**Steps to configure and execute (in eclipse ide)**

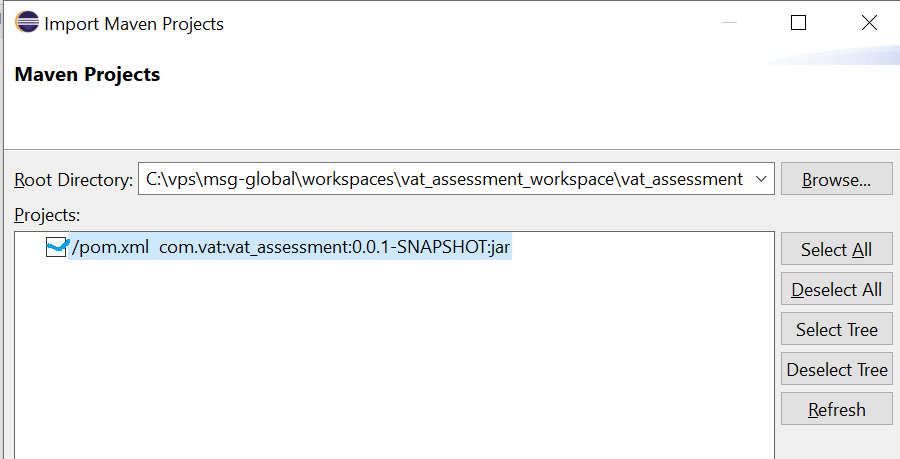
1. Download archive file (vat\_assessment.7z) from one drive (link shared via email) and extract into local folder
2. Open eclipse tool
   1. File and select import as Maven project by choosing the extracted project folder

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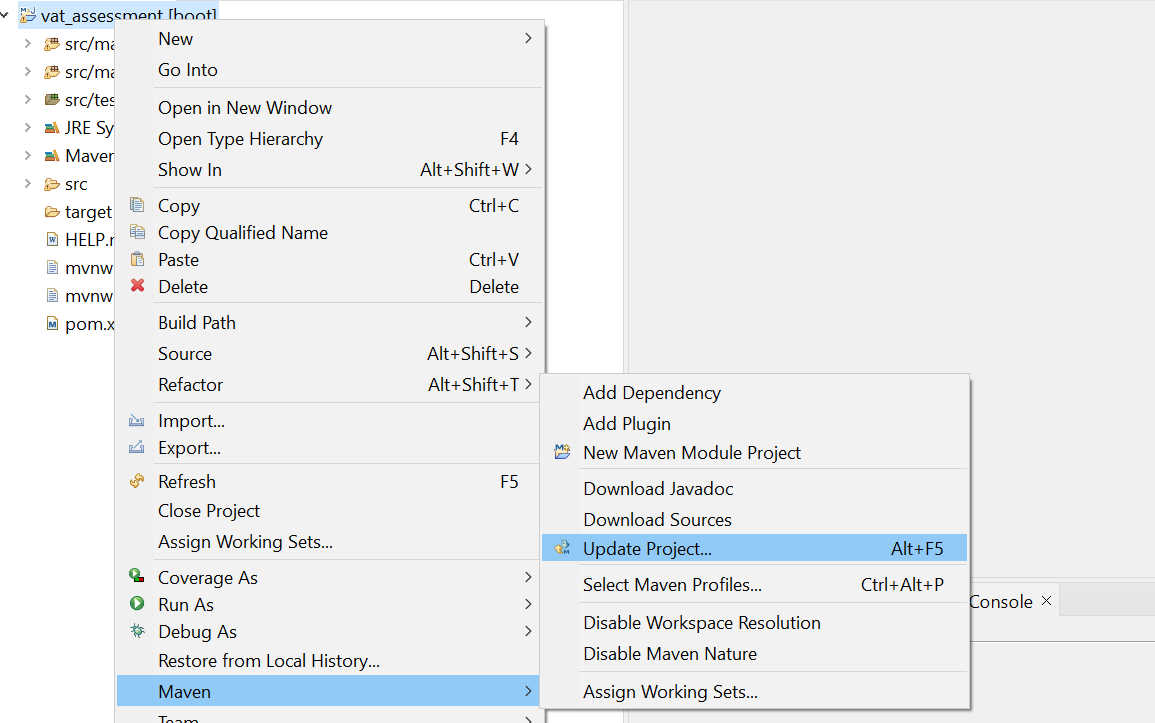
* 1. Select Existing Maven Projects

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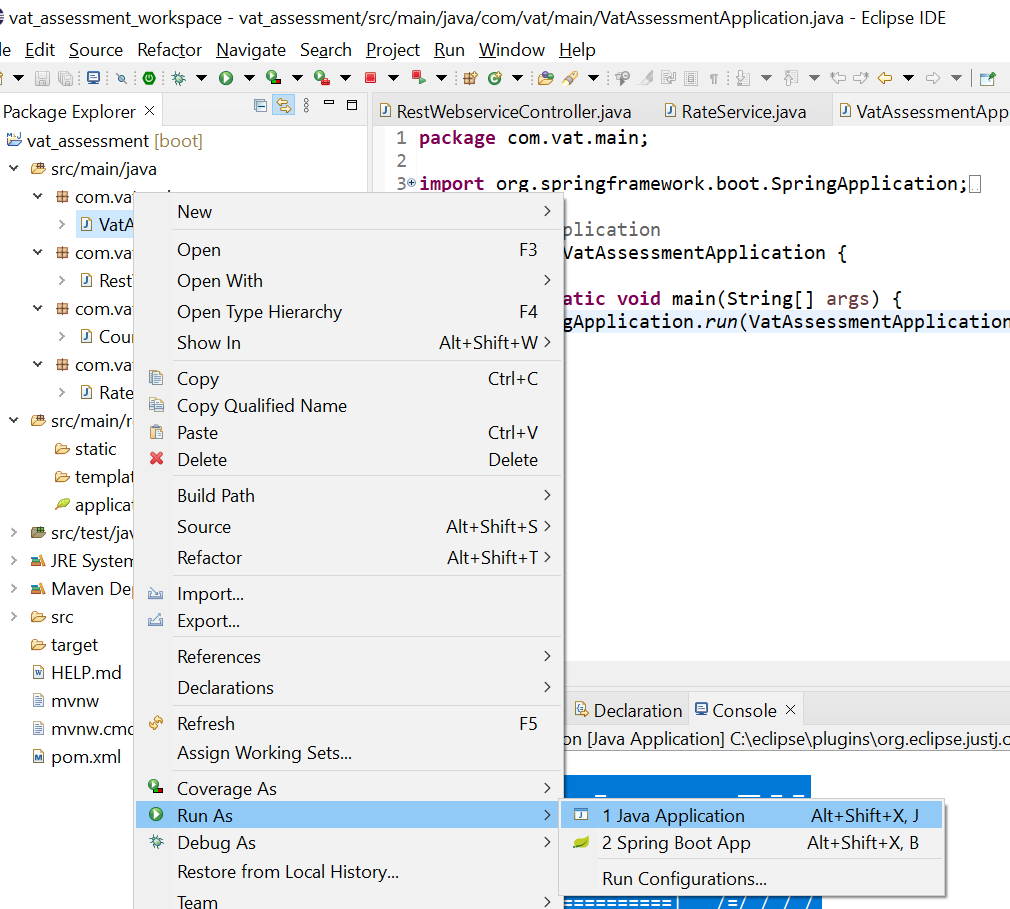
* 1. Select Root directory of the project extracted and select pom.xml check box and Finish

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1. Update maven by selecting the project

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1. Select VatAssessmentApplication.java and click Run as Java Application

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1. Once Spring Boot started by confirming in console



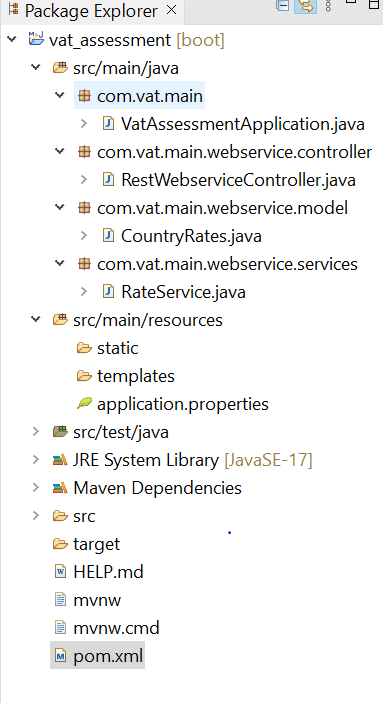
1. Use below URL's to test the assignment

[http://localhost:8080/api/vat/getStandardRates](http://localhost:8080/api/vat/standardrate)

[http://localhost:8080/api/vat/getReducedRates](http://localhost:8080/api/vat/reducedrate)

**Created Files for Assignments**

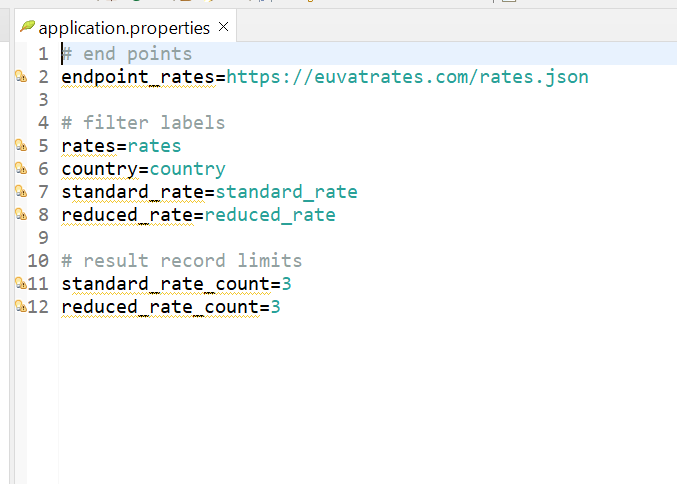
1. **Project Structure**



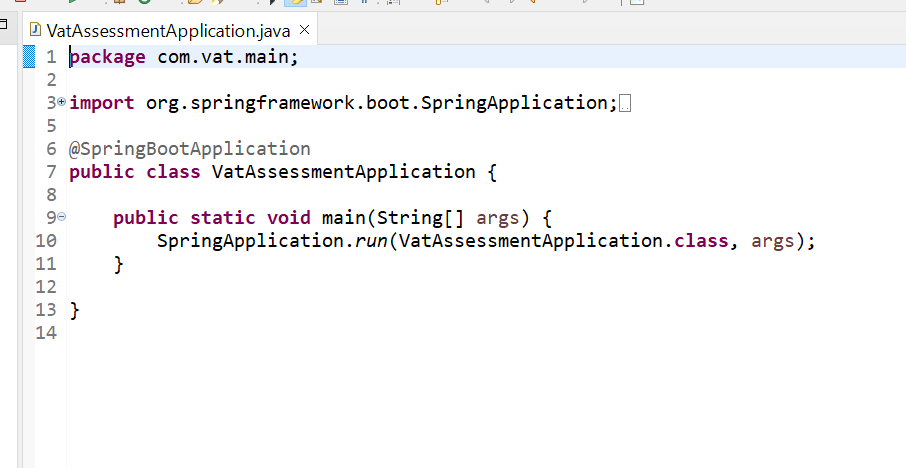
1. **Pom.xml** - Used to load dependencies
   1. **Spring-boot-starter-parent** – used to bootstrap the spring application
   2. **Spring-boot-starter-web** – used to start the web app and to support to make rest template call to the end point
   3. **Org.json** – Used to support object mapper to load the json data and to filter the json data by using json node



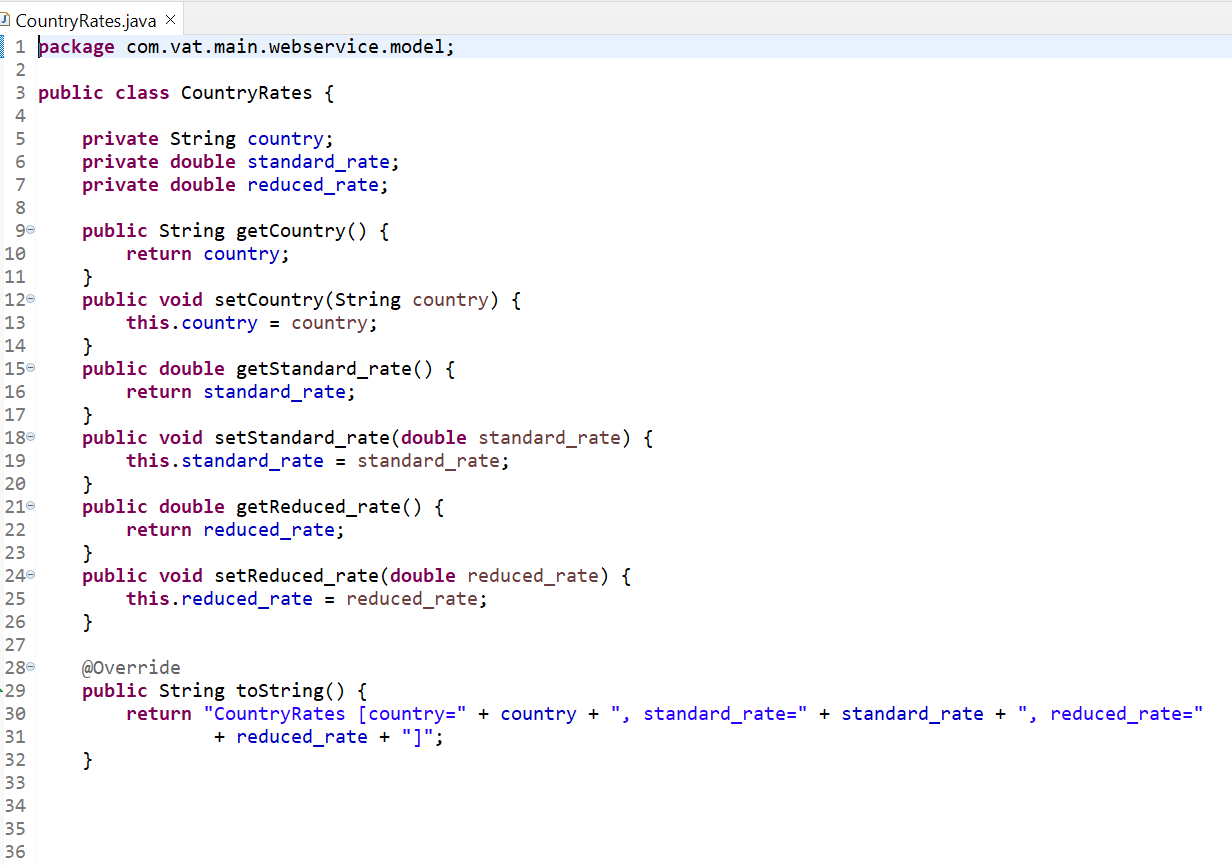
1. **Application.properties** – Used to maintain the endpoint as key/values and constant key values



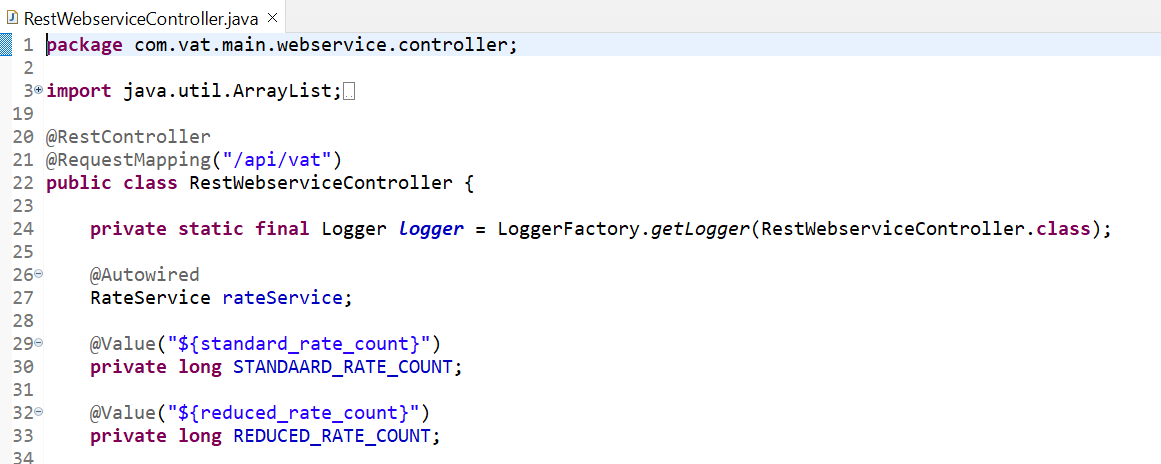
1. **VatAssessmentApplication.java** – Used to bootsrap the spring boot main class

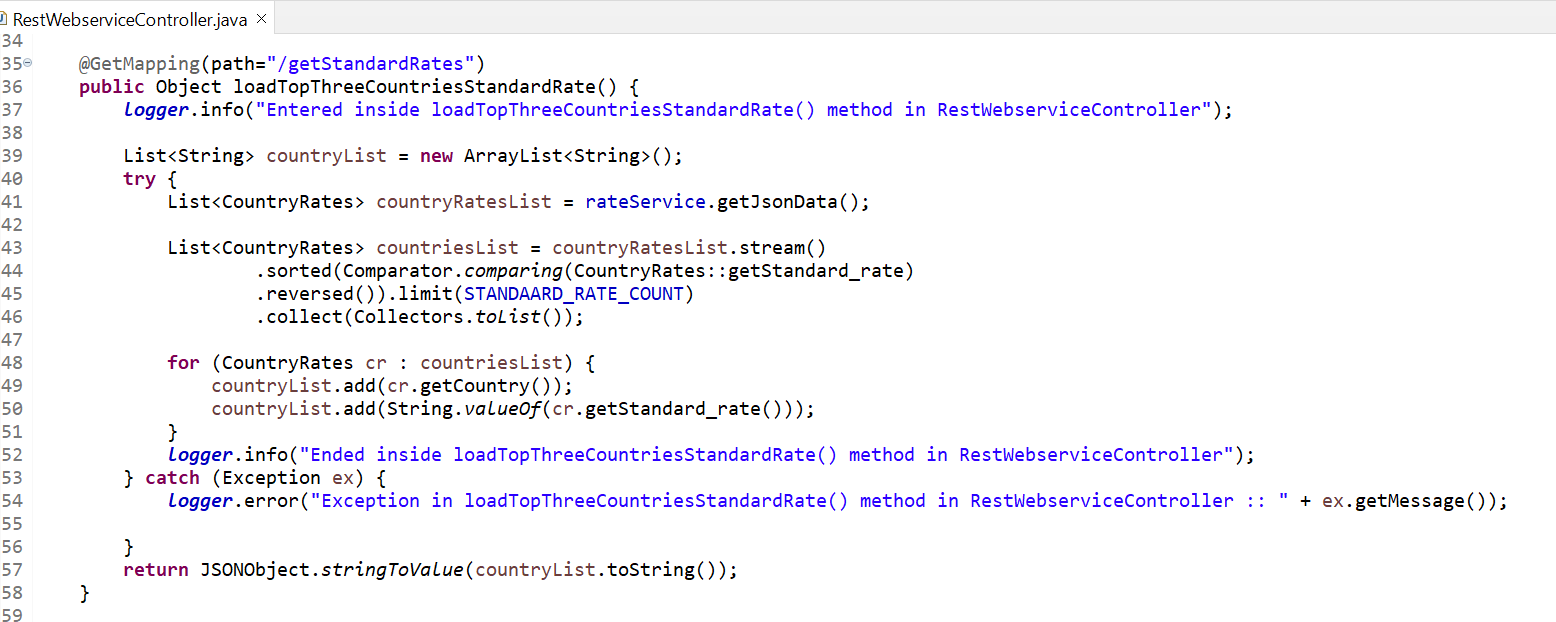


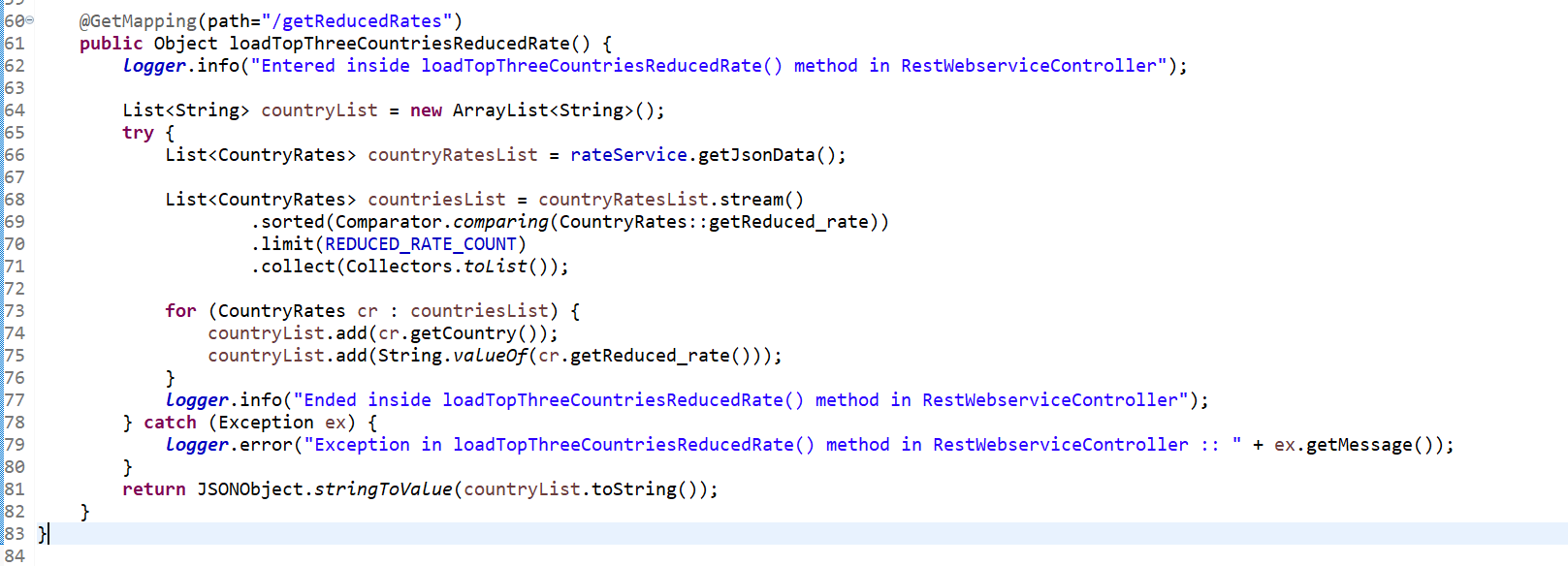
1. **CountryRates.java** – Used to maintain getter/setters in model bean class for the parameters Country, Standard Rate and Reduced Rate



1. **VatRateController.java** – Used to invoke rate service to loa endpoint data and apply the filter logic as per requirements
   1. getStandardRateTopThreeCountries() method used to apply the requiremnt logic for top 3 countries highest standard vat rate
   2. getReducedRateTopThreeCountries() method used to apply the requirement logic for top 3 countries lowest reduced vat rate







1. RestService.java – Used to make a rest service call using rest template to load the rates json data
   1. getJsonData() method used to load the json data from endpoint and filter the data based on requirement

