Semester Project Web Shop

Develop a Web Shop REST API.

Story

You are a small team building a web shop for a new customer. The customer wants to have a separate Frontend and Backend. You should develop the Backend. The customer wants you to use Spring Boot. You should implement a REST-based API to access and manage the data. The data should be exchanged via JSON.

Think of a new shop to sell products. You could sell Book, Drinks, Cars, or something completely different.

Requirements

- All routes should use the **REST** style
- All routes should handle **JSON** (except the files route)
- All data should be **validated**
- All data should be stored on a **database**
- There should be a page where **all products** are visible
- The products should have a product **image**
- You should be able to filter the products by **categories**
- All products have a **details page**
- A user can **login** with a username/email and password
- You can either be a normal **user** or an **administrator**
- Users can see all products
- Users can put all products into their **shopping card**
- Users can remove products from their shopping card
- Administrators can **add, edit, and delete** products and users
- Authorization should be done by **JWT**
- Use correct **HTTP codes**
- Write at least 20 unit test and 10 integration tests

Additions for a group of 3:

- Products have a specific **amount**
- Users can **order** their shopping card
- Users can only order if the products are **available**
- **Orders** can have the status “ordered”, “shipped” and “canceled”
- Administrators can see and update all orders
- Users can only see their orders
- Write 10 more unit tests and 5 more integration tests

Points

Topic	Points
Use REST principles (routes, JSON, ids, …)	20
Use a SQL Database and an ORM	10
Clean CRUD controllers (only call services and repositories)	15
Validate data (use Spring Boot data validation)	5
Access security (anonym, user, admin, JWT, …)	10
Permission security (shopping card access)	5
Correct file handling	5
Functional requirements (see above)	20
Unit/Integration test	10