

Exercise 02 - Decomposing the ProductSrv

Required Services

The following services are involved and have to be started before the final exercise validation:

- CustomerSrv (<http://localhost:8000>)
- NotificationSrv (<http://localhost:8010>)
- OrderSrv (<http://localhost:8030>)
- ProductSrv (<http://localhost:8050>)
- CategorySrv (<http://localhost:8060>)
- WarehouseSrv (<http://localhost:8070>)
- WebUI (<http://localhost:5000>)

Description

The **ProductSrv** has grown over time and is now fairly large compared to the other services. It is responsible for several different entities, namely products, product categories, and the available amount of product copies in the warehouse. The following resources are currently provided:

```
GET      /categories (experiment.webshop.products.resources.ProductResource)
POST     /categories (experiment.webshop.products.resources.ProductResource)
DELETE   /categories/{id} (experiment.webshop.products.resources.ProductResource)
GET      /categories/{id} (experiment.webshop.products.resources.ProductResource)
PUT      /categories/{id} (experiment.webshop.products.resources.ProductResource)

GET      /products (experiment.webshop.products.resources.ProductResource)
POST     /products (experiment.webshop.products.resources.ProductResource)
DELETE   /products/{id} (experiment.webshop.products.resources.ProductResource)
GET      /products/{id} (experiment.webshop.products.resources.ProductResource)
PUT      /products/{id} (experiment.webshop.products.resources.ProductResource)

GET      /products/{id}/availability
(experiment.webshop.products.resources.ProductResource)
PUT      /products/{id}/availability
(experiment.webshop.products.resources.ProductResource)
```

The lead developer has decided to split up the **ProductSrv** to increase maintainability and scaling efficiency. Two new services will be created: A **CategorySrv** handling product categories and a **WarehouseSrv** responsible for product availability. The CRUD operations related to products will remain in the **ProductSrv**. Runnable skeleton projects for the new services have already been created, they just provide no resources yet.

Tasks

1. **Move the product category related functionality.** Move all functionality related to product categories from the **ProductSrv** to the new **CategorySrv**. It already has a resource class (`experiment.webshop.categories.resources.CategoryResource`) and a repository class

(`experiment.webshop.categories.db.CategoryRepository`) that can be extended. Make sure to also copy all necessary model classes to the `experiment.webshop.categories.api` package that is currently empty. In the end, the following resources should be provided by the new `CategorySrv` instead:

```
GET      /categories (experiment.webshop.categories.resources.CategoryResource)
POST     /categories (experiment.webshop.categories.resources.CategoryResource)
DELETE   /categories/{id} (experiment.webshop.categories.resources.CategoryResource)
GET      /categories/{id} (experiment.webshop.categories.resources.CategoryResource)
PUT      /categories/{id} (experiment.webshop.categories.resources.CategoryResource)
```

2. **Move the product availability related functionality.** Move all functionality related to product availability from the `ProductSrv` to the new `WarehouseSrv`. It already has a resource class (`experiment.webshop.warehouse.resources.WarehouseResource`) and a repository class (`experiment.webshop.warehouse.db.WarehouseRepository`) that can be extended. Make sure to also copy all necessary model classes to the `experiment.webshop.warehouse.api` package that is currently empty. In the end, the following resources should be provided by the new `WarehouseSrv` instead:

```
GET      /products/{id}/availability
(experiment.webshop.warehouse.resources.WarehouseResource)
PUT      /products/{id}/availability
(experiment.webshop.warehouse.resources.WarehouseResource)
```

3. **Fix the service consumers of the moved functionality.** The old `ProductSrv` had two consumers that used its resources, namely the `OrderSrv` (that uses `GET /products/{id}/availability`) and the `WebUI` (that uses `GET /categories`, `GET /products`, and `GET /products/{id}/availability`). These two consumers have to be adjusted with the new URLs to reflect the changes of the service decomposition. The `OrderSrv` change has to be performed in the `createOrder()` method of the `experiment.webshop.orders.resources.OrderResource` class. The `WebUI` changes have to be performed in `app/main.js`: The retrieving of all categories has to be fixed in the `created()` method while checking product availability has to be fixed in `checkProductAvailability()`.

Validation

When you are finished with all tasks, make sure all required services (see [Required Services](#)) and the exercise validation UI is up and running (if not, execute `exercise-validation/build-and-run-validation-ui.bat`) and then navigate to `http://localhost:5001` (**it is important to start from this page, because it will determine which version you are working on**). Click on `Exercise 02` and then on `Start Validation`. If every check is successful (`status: true`), pause your stopwatch and notify an experiment admin for the manual validation part and to write down your time.