

# Exercise 01 - Order Process Changes

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## 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>)

## Description

The **OrderSrv** is responsible for orchestrating the process of creating a new order, which can be invoked via **POST** <http://localhost:8030/orders>. The current process looks as follows (see the **createOrder()** method in the **webshop.orders.resources.OrderResource** class):

1. The customer's credit rating (1-6) is validated by invoking the **CustomerSrv** via **GET** <http://localhost:8000/customers/{id}/credit-rating-check> (**webshop.customers.resources.CustomerResource**). Ratings of 4 or worse are rejected, ratings of 1-3 are accepted.
2. If the credit rating check was successful, the availability of the requested items is checked via the **ProductSrv**. For each item, **GET** <http://localhost:8050/products/{id}/availability?amount={amount}> (**webshop.products.resources.ProductResource**) is invoked. A product counts as **available**, if at least 3 copies would remain in stock after fulfilling the new order.
3. If all requested items are **available**, the order is created and stored via the **OrderRepository** (**webshop.orders.db.OrderRepository**).

After some research, the sales team has decided that this process should now be adjusted and extended.

## Tasks

1. **Change the credit rating validation logic.** From now on, ratings of 1-4 should be accepted and ratings from 5-6 should be rejected. In short, the worst allowed rating should be increased from 3 to 4. This **CustomerSrv** change has to be performed in the **updateAndCheckCreditRating()** method of the **webshop.customers.resources.CustomerResource** class.
2. **Change the product availability validation logic.** From now on, at least 2 copies of the ordered product have to remain in stock after fulfilling the new order for the product to count as **available**. In short, the minimal remaining amount should be decreased from 3 to 2. This **ProductSrv** change has to be performed in the **checkProductAvailability()** method of the **webshop.products.resources.ProductResource** class.
3. **Add a new final process step.** After creating a new order and before returning the final response, the **NotificationSrv** should be invoked to send a marketing mail with similar products to the customer via **POST** <http://localhost:8010/marketing-mails>. Use the provided Jersey **restClient** instance for this. As request payload, you have to create an instance of **webshop.orders.api.MarketingMailRequest**. An example is provided below.

```
// Invoking the NotificationSrv to send a SIMILAR_PRODUCTS_MAIL for the new order
MarketingMailRequest marketingMailRequest = new
MarketingMailRequest("SIMILAR_PRODUCTS_MAIL", createdOrder);

Invocation.Builder request = restClient.target(notificationSrvUrl).request();
request.post(Entity.json(marketingMailRequest), BaseResponse.class);
```

## 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.sh`) 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 01** and then on **Start Validation**. If every check is successful (`status: true`), pause your stopwatch and notify an experiment admin to write down your time.