

# 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 /orders](#) ([experiment.webshop.orders.resources.OrderResource](#)). The following JSON payload is an example for a new order request:

```
{
  "customerId": 1,
  "items": [
    {
      "productId": 1,
      "amount": 2
    },
    {
      "productId": 2,
      "amount": 1
    }
  ]
}
```

The current process looks as follows (see the [createOrder\(\)](#) method in the [experiment.webshop.orders.resources.OrderResource](#) class):

1. Use the provided [customerId](#) to refresh and check the customer's credit rating (1-6) by invoking the [CustomerSrv](#) via [GET /customers/{id}/credit-rating-check](#) ([experiment.webshop.customers.resources.CustomerResource](#)). Ratings of 4 or worse are rejected, ratings of 1-3 are accepted. An example response may look as follows:

```
{
  "customerId": 1,
  "acceptable": false
}
```

2. If the credit rating check was successful, the availability of the requested items is checked via the `ProductSrv`. For each item, `GET /products/{id}/availability?amount={amount}` (`experiment.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. An example response may look as follows:

```
{
  "productId": 1,
  "available": true,
  "requestedAmount": 3
}
```

3. If all requested items are `available`, the order is created and stored via the `OrderRepository` (`experiment.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 order of the first two process steps.** The product availability check should be the first step with the customer credit rating check being second. This `OrderSrv` change has to be performed in the `createOrder()` method of the `experiment.webshop.orders.resources.OrderResource` class.
2. **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 `experiment.webshop.customers.resources.CustomerResource` class.
3. **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 `experiment.webshop.products.resources.ProductResource` class.
4. **Add a new final process step.** After successful ordering, the `NotificationSrv` should be invoked to send a marketing mail with similar products to the customer via `POST /marketing-mails`. Use the provided Jersey `restClient` instance for this. You can copy and adapt one of the existing invocations from the same method (e.g. the credit rating check). Instead of `get()`, invoke the `post()` method of a created `request` (see below). An example payload (`experiment.webshop.orders.api.MarketingMailRequest`) is also provided below (`order` will of course be the newly created order).

POST request example:

```
Invocation.Builder request = restClient.target(url).request();
BaseResponse response = request.post(Entity.json(payload), BaseResponse.class);
```

Payload example:

```
{
  "type": "SIMILAR_PRODUCTS_MAIL",
  "order": {
    "id": 6,
    "created": 1525695805999,
    "status": "NEW",
    "customerId": 6,
    "items": [
      {
        "productId": 1,
        "amount": 2
      },
      {
        "productId": 2,
        "amount": 1
      }
    ]
  }
}
```

## 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>. Click on **Exercise 01** 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.