

# 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>)
- OrderProcessSrv (<http://localhost:8020>)
- OrderSrv (<http://localhost:8030>)
- ProductSrvFacade (<http://localhost:8040>)
- ProductSrv (<http://localhost:8050>)
- Apache Zookeeper (<localhost:2181>)
- Apache Kafka (<localhost:9092>)

## Description

The `OrderProcessSrv` is responsible for orchestrating the process of creating a new order, which can be invoked via `POST /order-process` (`experiment.webshop.orderprocess.resources.OrderProcessResource`). 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 `createOrderProcess()` method in the `experiment.webshop.orderprocess.resources.OrderProcessResource` 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,
```

```
"rating": 6
}
```

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,
  "availableAmount": 6,
  "requestedAmount": 3
}
```

3. If all requested items are available in the necessary capacity, the order is created and stored by invoking the `OrderSrv` via `POST /orders` with the original order payload.

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

## Tasks

All changes have to be performed in the `OrderProcessSrv`, more precisely within the `createOrderProcess()` method of the `experiment.webshop.orderprocess.resources.OrderProcessResource` class.

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.
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.
3. **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 http://localhost:8010/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(notificationSrvUrl).request();
request.post(Entity.json(marketingMailRequest), BaseResponse.class);
```

MarketingMailRequest 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` (**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.