Commerce Facades

Exercise

SAP Customer Experience

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GOAL

On the product details page, you can already see how much stock is available for a product. If a product is out-of-stock, customers would like to see an estimate of how many days until the product is back in stock again. In this exercise, we are going to add a new attribute to a product's stock data that will allow us to display the estimated days until that product is once again in stock.

INSTRUCTIONS

Preparation

P1 Begin by running this exercise's **setup** Ant target:

- If you haven't done so in the current terminal window, set Ant and SAP Commerce Cloud platform environment variables by navigating to the `YOURPATH/workspace/hybris/bin/platform` directory and executing:

  `. ./setantenv.sh` (on MacOS or Linux) or `setantenv.bat` (on Windows).

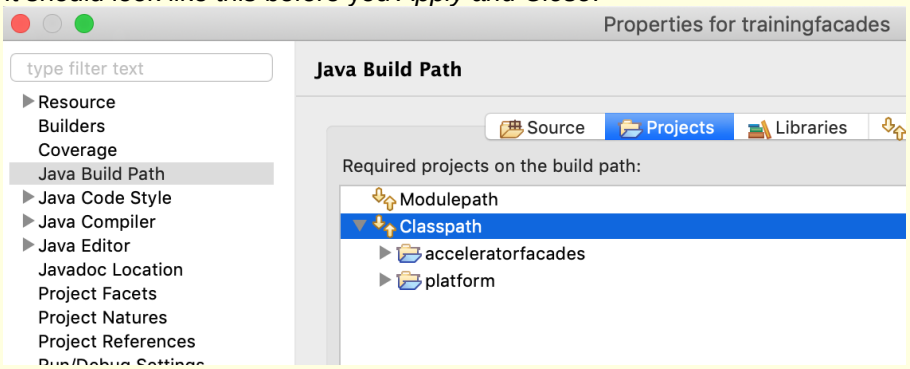
- Then navigate to `YOURPATH/workspace/TrainingLabTools/exercise_Facades` and execute:

```
ant -f facades_tasks.xml setup
```

The setup task creates an extension (**trainingfacades**) for you and adds it to localextensions.xml.

P2 Now import the **trainingfacades** extension into your IDE.

Java Build Path problems?
Remember that in Eclipse you may need to setup your Java Build Path manually so that your new project will find all relevant class files.
Right click your project, select *Build Path >> Configure Build Path…* and add projects: **acceleratorfacades** and **platform** by clicking *Add…*
It should look like this before you *Apply and Close*:



Step 1 • Add a new StockData Property, estimatedRestockDays

We want to enable the capability to display the estimated days until an out-of-stock product is back in stock on the product details page. Based on the accelerator's architecture, a DTO is used to transfer the data from the facade to its view. Your first task is to add the **estimatedRestockDays** property to this DTO so that it can be accessed from the product details view.

In `trainingfacades-beans.xml`, add **estimatedRestockDays** as a new property of type Integer, to the out-of-the-box DTO, *de.hybris.platform.commercefacades.product.data.StockData*. Use your lecture slides as a reference. Run `ant all` to generate the code supporting this newly-added property in the auto-generated StockData class before moving to the next step.

Step 2 • Populate the estimatedRestockDays Property

You should now make sure that the **estimatedRestockDays** property on the *StockData* DTO gets populated:

2.1 Create the *my.commerce.trainingfacades.populators.DefaultProductRestockEstimatePopulator* class in the extension's `src` folder. It should implement the *de.hybris.platform.converters.Populator* interface and provide an implementation for its *populate(…)* method. The source object passed to the populate method is a *ProductModel* object or one of its subtypes. The target object is the *StockData* object (or one of its subtypes) that we added our **estimatedRestockDays** property to in the previous step. Use your theory slides as a reference for what the populator class should look like.

2.2 You will need to inject two services and a facade into the populator class:

- *de.hybris.platform.store.services.BaseStoreService*
- *de.hybris.platform.acceleratorfacades.futurestock.FutureStockFacade*
- *de.hybris.platform.commerceservices.stock.CommerceStockService*.

Make sure to provide public setters for these member variables so that they can be properly injected by the Spring framework.

2.3 As we're now using code defined outside our extension, our **trainingfacades** project now has a dependency on other extensions. Go ahead and add the **acceleratorfacades** extension as a dependency in the `extensioninfo.xml` file within the **trainingfacades** extension folder. Don't forget to also update the build path of your IDE's **trainingfacades** project with the same dependency information on **acceleratorfacades**.

2.4 In the populate method, we must first check if the product passed in is out-of-stock. We can do this by getting the product's **StockLevelStatus** (*de.hybris.basecommerce.enums.StockLevelStatus*) using the injected *CommerceStockService.getStockLevelStatusForProductAndBaseStore(…)* method. This method requires a ProductModel and BaseStoreModel to be passed in. We already have the ProductModel. To get the BaseStoreModel, you can use the injected BaseStoreService's *getCurrentBaseStore()* method.

Example:

```
commerceStockService.getStockLevelStatusForProductAndBaseStore(productModel,
baseStoreService.getCurrentBaseStore());
```

2.5 Once we have obtained the StockLevelStatus for the source Product, we can check if it is out-of-stock by comparing it to the static enum value from the StockLevelStatus class:

```
if(StockLevelStatus.OUTOFSTOCK.equals(stockLevelStatus))
```

2.6 If the product's StockLevelStatus is OUTOFSTOCK, we can now obtain its restock date. Use the injected *FutureStockFacade.getFutureAvailability()* method, which takes in the ProductModel's code as a String and returns a List of FutureStockModel objects. Just get the FutureStockModel at the 0 index of the ArrayList and call its *getDate()* method to return a java.util.Date object.

Example:

```
futureStockFacade.getFutureAvailability(productModel.getCode()).get(0).getDate();
```

Note: The *FutureStockFacade*'s out-of-the-box implementation, *DefaultFutureStockFacade*, is a mock implementation that will always provide the restock date as **2052-08-06**.

2.7 Now that we have the estimated restock date, we can calculate the number of days between the current date and the restock date. You can use any Java solution that you prefer to calculate the number of days between these two dates, as it is not important for this exercise how that number is obtained as long as it is the correct number. This number is our estimatedRestockDays number.

Example (using the Java 8 *ChronoUnit between()* method):

```
final LocalDate restockDateConverted =
restockDate.toInstant().atZone(ZoneId.systemDefault()).toLocalDate();

estimatedRestockDays = (int) Math.ceil(ChronoUnit.DAYS.between(currentDate,
restockDateConverted));
```

2.8 Remember to assign the result of your computations to the StockData parameter object.

Step 3 • Add Populator to Converter

DefaultProductRestockEstimatePopulator is now complete and ready to use. But it won't be used unless it's associated with a converter. Like the DTO in the previous part, we want to reuse what's already there – in this case, the **stockConverter** bean. Recall how to add a populator to a pre-existing converter, usually defined in another extension, without directly modifying the pre-existing bean definitions. (And if you can't recall, refer to the lecture slides!)

3.1 Make the necessary changes in `trainingfacades-spring.xml` to create a bean for the *DefaultProductRestockEstimatePopulator* and add it to the appropriate converter. Don't forget to add your service/façade injections to your populator bean.

3.2 To make your changes take effect, **run 'ant all' and restart your server**.

Hint: If you have trouble completing this exercise, look under `${YOURPATH}/TrainingLabsTool/resources/trainingfacades/solution/trainingfacades-spring.xml`.

Verify

To verify your solution, go to **HAC** and run the script `verifyExerciseFacades`.

Note: It is not part of the exercise to actually add the display of the estimatedRestockDays value to the product details page. As it is, the only way to test it on the actual storefront is to include some logging in the populator and then click on a product that you know has no stock (such as the product with code 1320808). Look for the logging output in your *cmd* or *Terminal* window. See the solution files for an example of how to use logging.

It is left as a challenge to the student to add the display of the estimatedRestockDays property via an add-on or directly to the yaccelerator storefront `productDetails.tag`, but a solution is not provided for this.

Solution

If you don't wish to complete this exercise manually, you can install the solution provided:

S1 Navigate to the *Terminal* or *cmd* window where the server is running, and if it is running, stop it by entering `CTRL-C`.

S2 Navigate to `YOURPATH/TrainingLabTools/facades` and execute:

```
ant -f facades_tasks.xml solution
```

RECAP

In this exercise, you learned how to use facades and populators to pass data from the services layer to the frontend layer.

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