



Data Modeling

Exercise

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GOAL

This exercise covers the basics of data modeling in SAP Commerce Cloud. In this exercise, you will learn how to build onto an already-defined data model by defining additional types and relations.

INSTRUCTIONS

First, take a look at the UML diagram below. This is the data model you will be working with. The colors represent the status of a data type (item type) in the system.

If you can't see the colors, the OOTB items (Product and User) are in dark-bordered rectangles, and items you will need to define are in bold text.

	the corresponding item is available OOTB in the SAP Commerce Cloud platform.
	a definition of this item or property is provided as part of the exercise setup.
	Items, properties, and relations you will have to define (denoted in bold text).

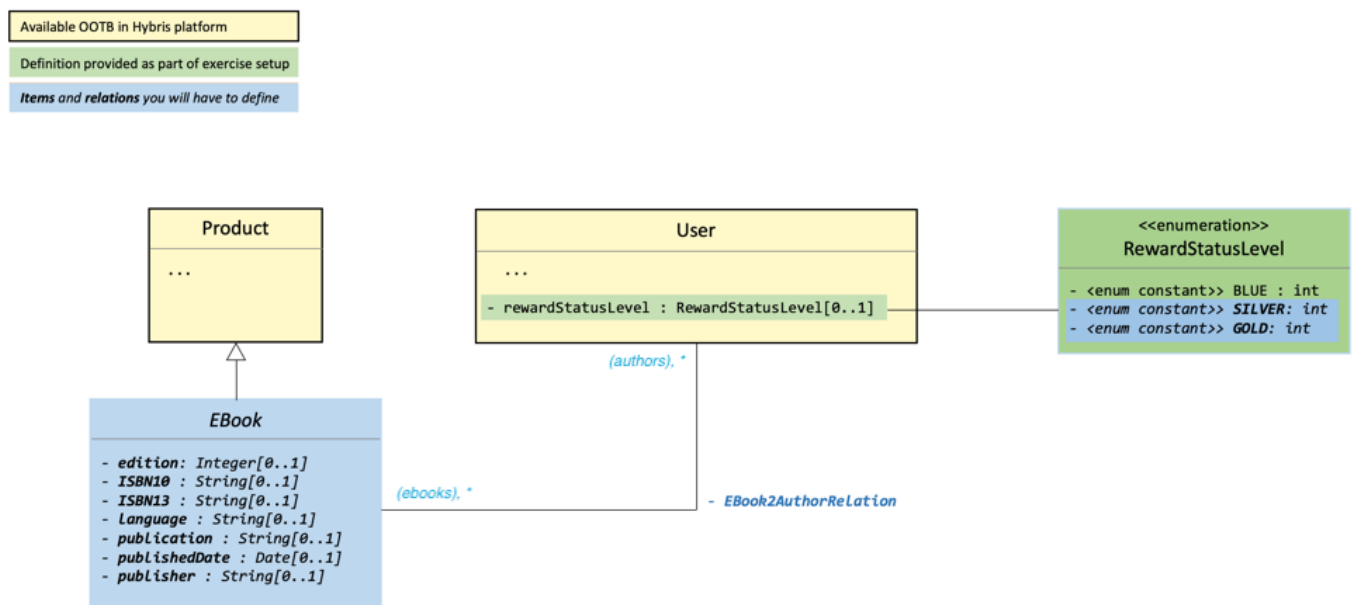


Figure: UML Diagram of Data Model

Preparation

- P1 To prepare your system for working on this exercise, open a *Terminal* or *cmd* window, navigate to the `MYPATH/workspace/TrainingLabTools/exercise_DataModeling` directory, and run the following Ant target:

```
ant -f data_modeling_tasks.xml setup
```

This will create a new extension named `trainingdatamodeling` and add it to your `localextensions.xml`.

- P2 Now you have to import the new extension into your IDE. In Eclipse, click: *File > Import*. In the dialog, select *General > Existing Projects into Workspace*. In the **Import Projects** dialog, select `MYPATH/workspace/hybris/bin/custom/trainingdatamodeling` as the root directory and click **FINISH**. The new extension is now visible in your IDE.

Now you can start working on the exercise. You will be editing two files, `trainingdatamodeling-items.xml` and `trainingdatamodeling-locales_en.properties`, located here:

`MYPATH/workspace/hybris/bin/custom/trainingdatamodeling/resources/trainingdatamodeling-items.xml`

`MYPATH/workspacess/hybris/bin/custom/trainingdatamodeling/resources/localization/trainingdatamodeling-locales_en.properties`

Step 1 - Define the EBook type and add EBook Attributes

Using the UML diagram as a reference, complete the definition of the *EBook* item type in `trainingdatamodeling-items.xml` (which was copied to your `trainingdatamodeling` extension's resources folder by the exercise's *ant* setup task). As noted above, the attributes you need to add are highlighted in blue and bold.

HINTS

- 1) EBook is a subtype of Product.
- 2) The UML diagram uses an array-style notation to indicate an attribute's cardinality (i.e., [1] denotes an attribute for which a value is mandatory; [0..1] denotes an attribute for which a value is optional). Each endpoint of a relation indicates that attribute's cardinality with either 1 or * (many). Look at other attributes of the EBook item type in `trainingdatamodeling-items.xml` as a reference.
- 3) When declaring an attribute, don't forget the mandatory tag: `<persistence type="..." />`.

Step 2 - Add a Relation

Create a many-to-many relation between EBook and User as shown in the UML diagram. Use **EBook2AuthorRelation** as the code for this relation (please enter the code exactly as specified, including the capitalization; if you don't, the verification script will complain). Use **ebooks** and **authors**, respectively, as qualifiers for EBook and User in this relation. To see examples, you can look at relations defined in other extensions' `items.xml` files. (Remember to include the deployment tag required by a many-to-many relation). For this exercise, declare the relation with a **localized="false"** attribute.

Step 3 - Add Enumeration Attributes

The Customer can have 3 different status levels: BLUE, SILVER, and GOLD. Complete the enumType `RewardStatusLevel` defined in `trainingdatamodeling-items.xml`, by adding the missing `<value>` elements. Use the UML diagram as a reference.

Step 4 - Localize Attribute Names

Provide a localized name and description for the `publication` and `publisher` attributes of EBook in `trainingdatamodeling-locales_en.properties`

HINTS

Be careful... you're localizing the **publication** and **publisher** property's meta-data, **not** making each a "localized:" property. If the distinction isn't clear, consult the slides for this chapter or ask your instructor for clarification

Step 5 - Update SAP Commerce Cloud

In the command line, navigate to the platform directory and run `ant all`. Then restart the SAP Commerce Cloud server.

Go to HAC on your browser (<http://localhost:9001> or <https://localhost:9002>) and update the platform (NOTE: you need to check only two options: **Update running system** and **Localize types**).

Update Options



If you don't know why you should choose these options, please take a look at [Initializing and Updating the SAP Commerce Cloud](#) before proceeding.

View Your Changes in Backoffice



If you are curious, you may view some of the changes that you made to an already-existing type, like **User**, in Backoffice. To do so, login to Backoffice at <https://localhost:9002/backoffice/login.zul> using the following credentials: (user) `admin`, (password) `nimda`. Then go to *System > Types* and search for the type **User**. Click on **User** and navigate to the **PROPERTIES** tab. The new attributes should appear here. Similarly, you can also search for the **EBook** type, click on it, and navigate to the **PROPERTIES** tab. The new attributes should also appear using the labels you defined in Step 4.

Verify

To verify your solution, go to HAC and run the `verifyDataModelingExercise` script to check your changes.

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 `MYPATH/TrainingLabTools/exercise Data Modeling` and execute:

```
ant -f data modeling tasks.xml solution
```

RECAP

In this exercise you have learned to define new item types and relations based on a data model. You have also learned how you can localize item types and their attributes.

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