



PARTNER

## **SAP BTP Data-to-Value Hands-on Exercise Series**

### **DV200 Exercise01 – Creating a Graphical View with Data Builder of SAP Data Warehouse Cloud**

This document will guide you step by step on the process of creating a Graphical view with Data Builder in SAP Data Warehouse Cloud, joining the Books and Authors from Bookshop Solution in SAP HANA as a Book Author Dimension View.

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## DISCLAIMER

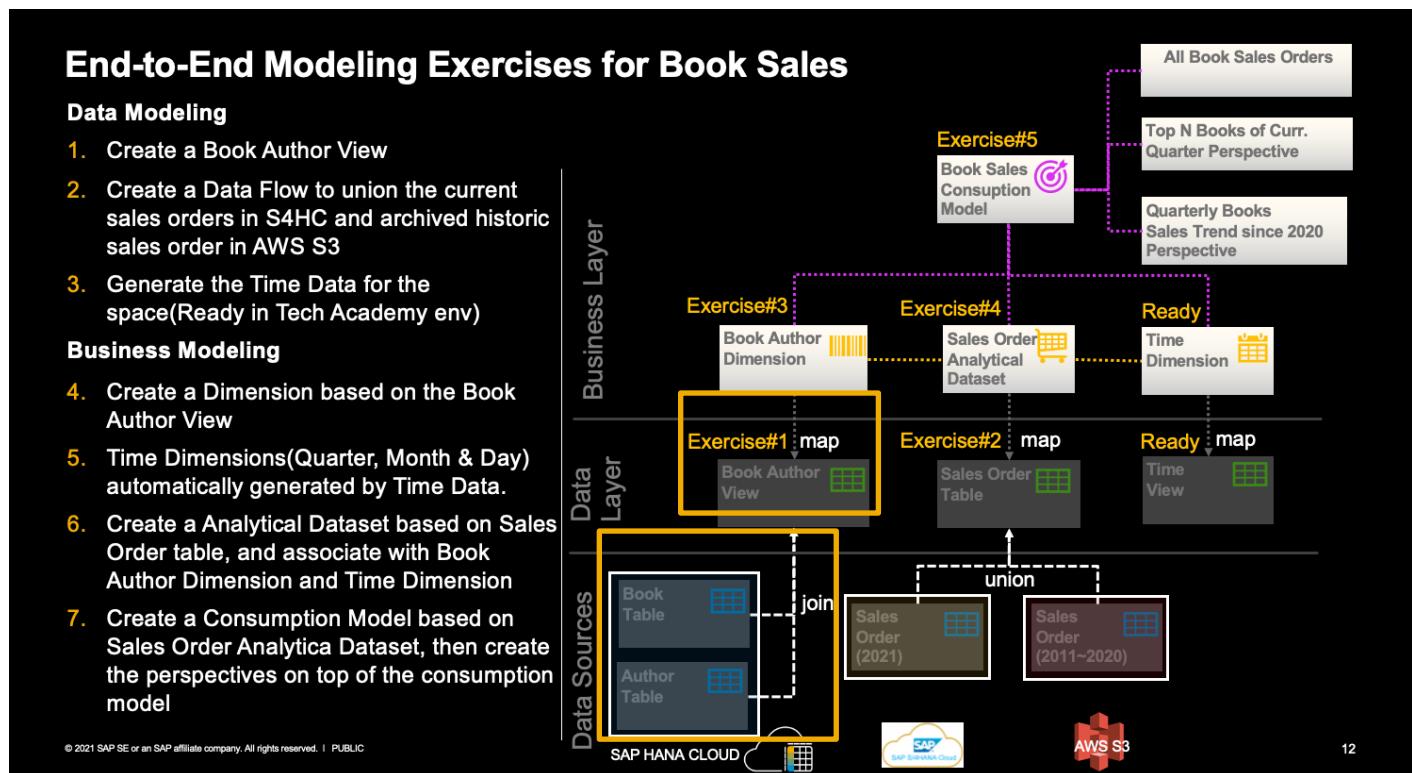
All functionality presented here is subject to change and may be changed by SAP at any time for any reason without notice.

## OBJECTIVE

The objective of this exercise is to provide the steps needed to create a Graphical View using SAP HANA Cloud as a source.

## SCENARIO

In this session we will use the scenario as seen in Exercise#1 in the below image.



In this session we will create a Graphical View using Data Builder, which will join the Book and Author data of bookshop solution as Book Author Dimension View through SAP HANA Cloud connection. The view will use two source tables from SAP HANA Cloud:

- SAP\_CAPIRE\_BOOKSHOP\_AUTHORS
- SAP\_CAPIRE\_BOOKSHOP\_BOOKS

## ENVIRONMENT ACCESS

Before proceeding with the exercise, please obtain the Tenant details and Login Credentials of SAP Data Warehouse Cloud provided to you as instruction below.

**SAP Data Warehouse Cloud** (to login SAP Data Warehouse Cloud and perform the exercise):

- Tenant URL
- Username: Your assigned User ID
- Password: Your assigned User Password

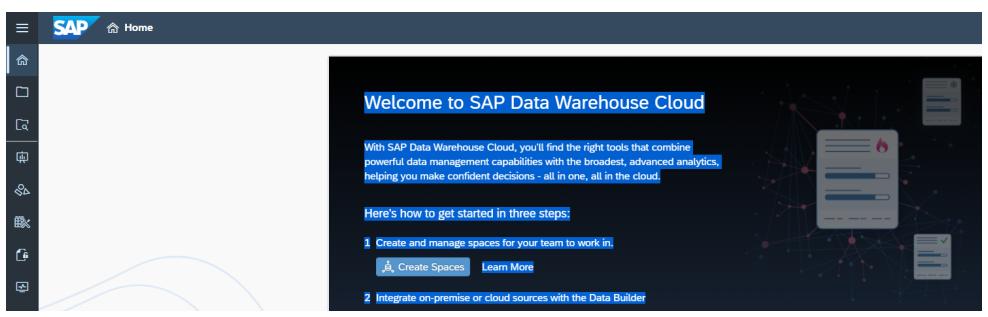
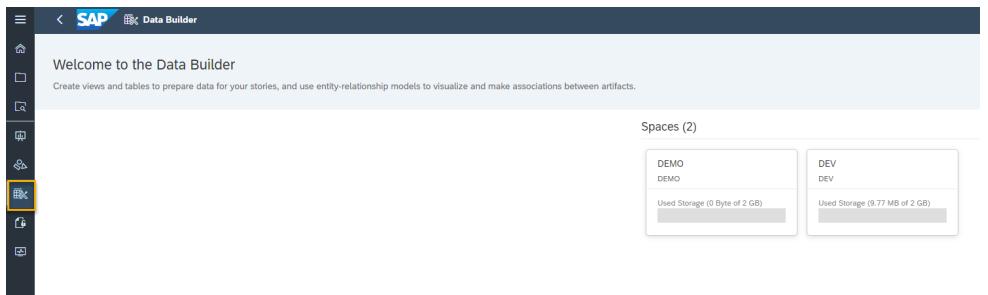
For the Bootcamp participants, please use the SAP Data Warehouse tenant provided by SAP, and your assigned user id and password:

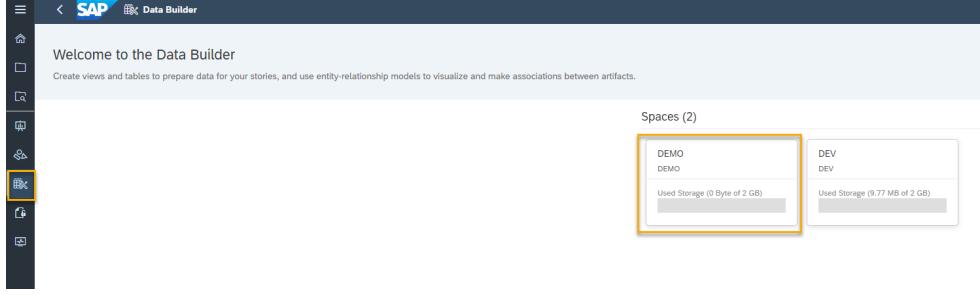
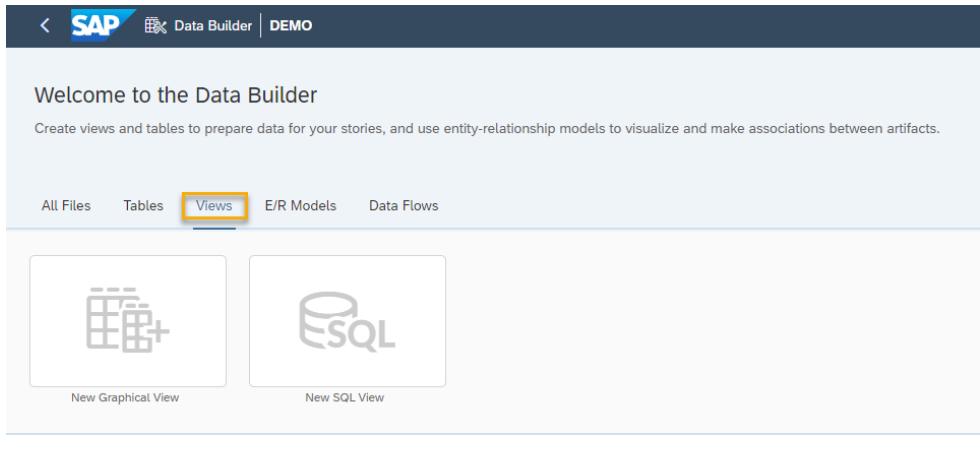
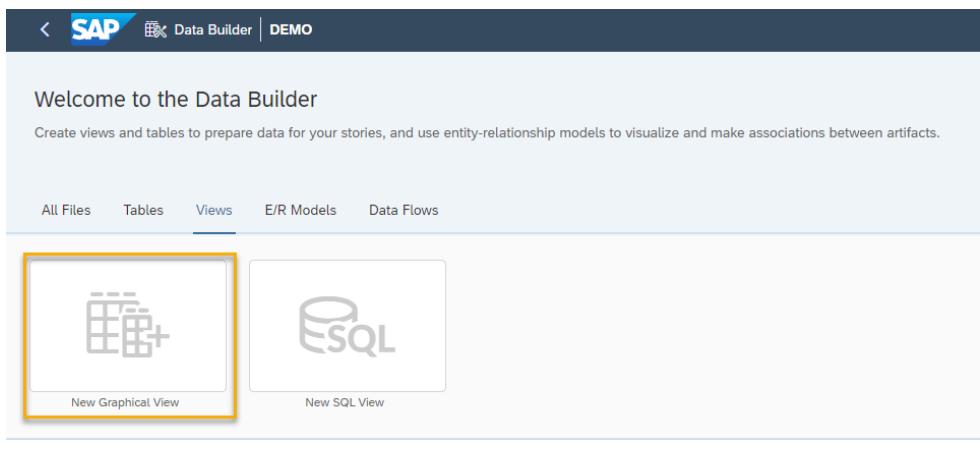
- The SAP Data Warehouse cloud tenant URL is available in the dedicated **Microsoft Teams > General (Channel) > System Access (Tab) > SAP Data Warehouse Cloud (Section)**, which you have been invited.
  - Your assigned user id and password for SAP Data Warehouse Cloud are communicated individually via email.

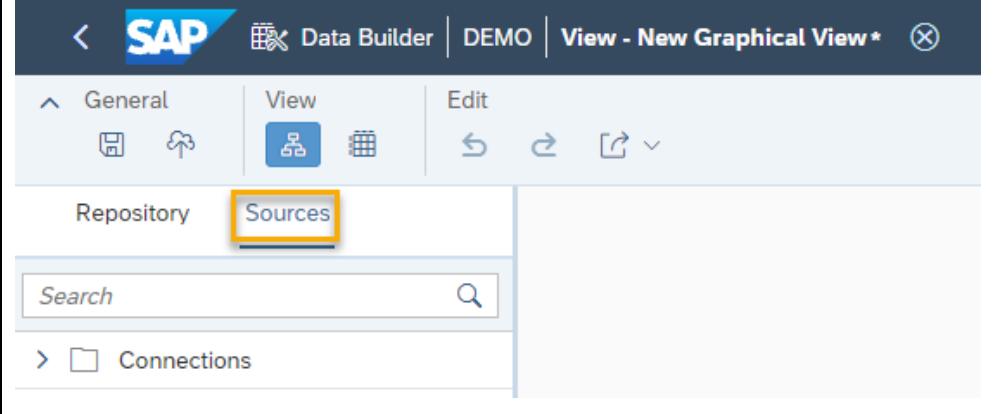
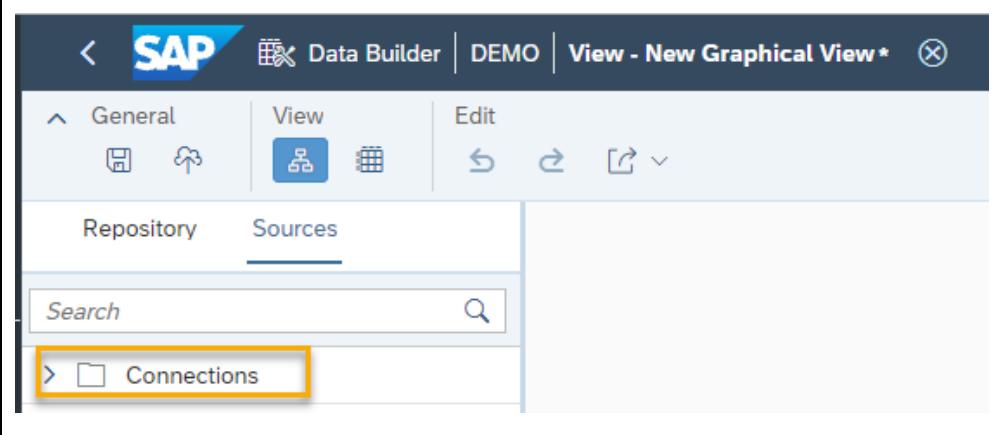
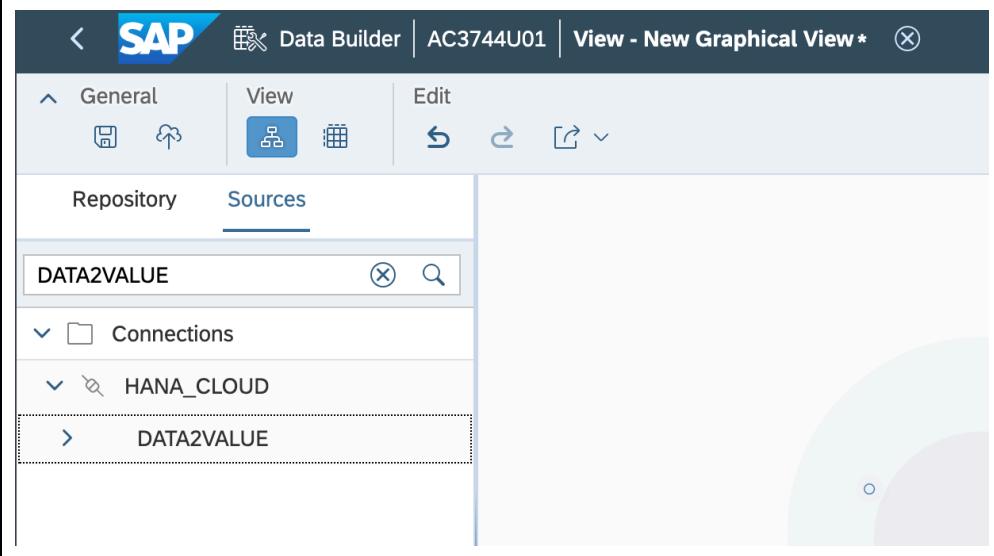
## PREREQUISITES

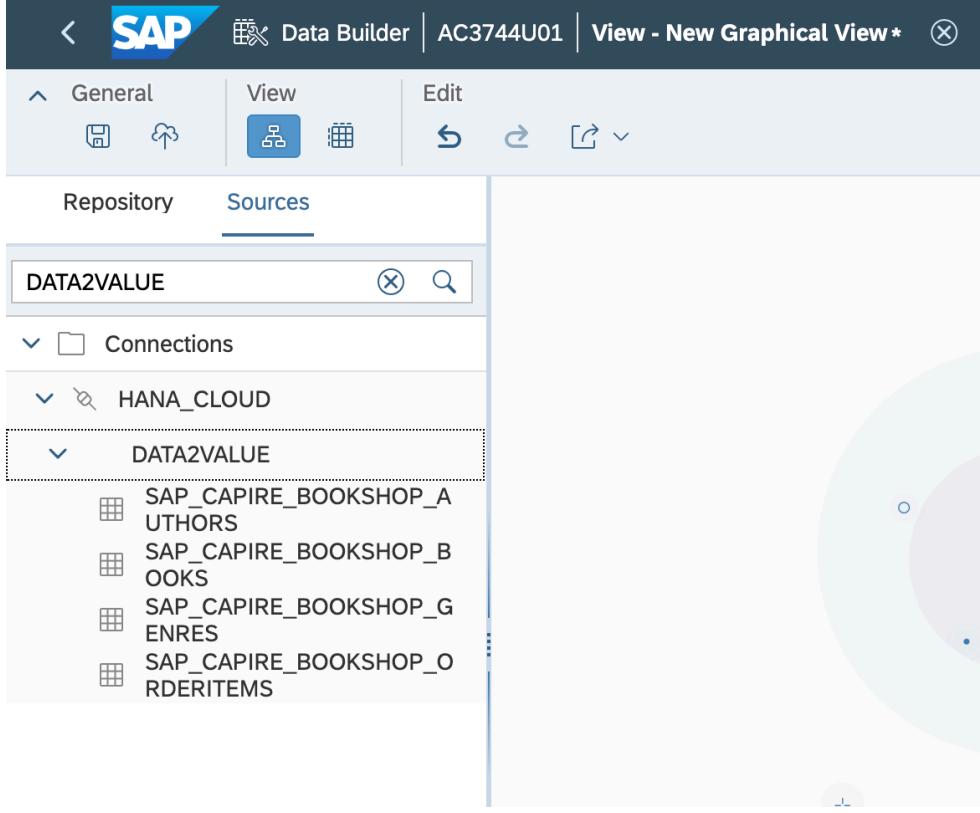
- You have completed [DV140\\_Exercise02](#). As a result, the connection of SAP HANA Cloud is created and valid in SAP Data Warehouse Cloud. Please, check in the exercise instructions available in the Teams channel (you have been invited to) if the SAP HANA Cloud connection is already preconfigured in DWC for you. In this case, you don't need to go through [DV140\\_Exercise02](#), but you need just to use the provided SAP HANA Cloud connection name.

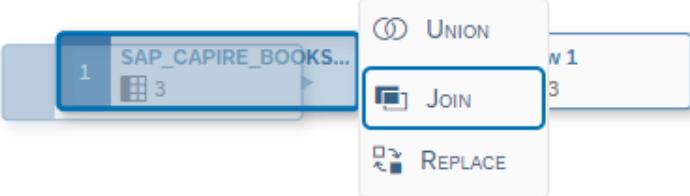
## EXERCISE STEP DETAILS

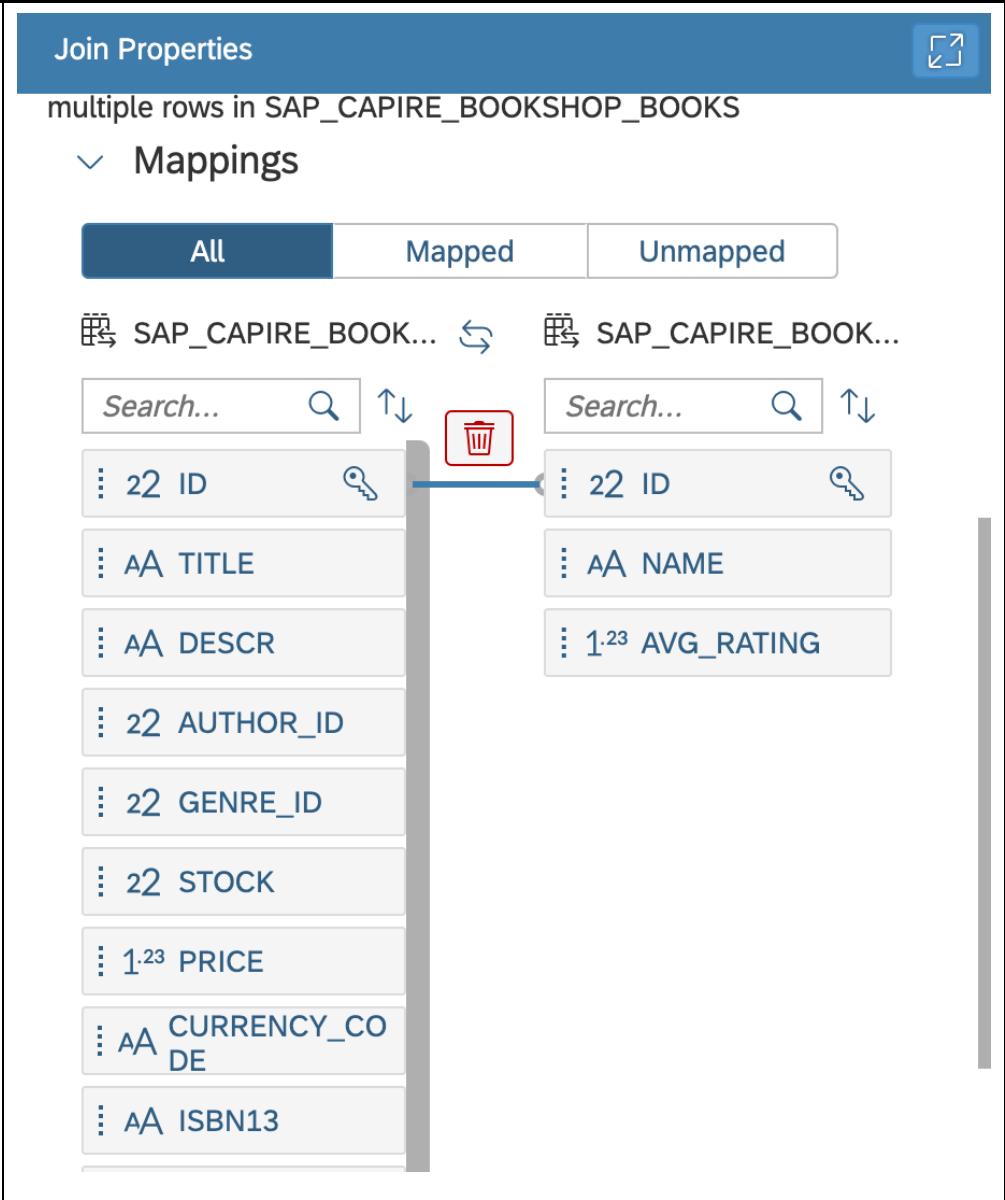
Explanation	Screenshot
Log on to SAP Data Warehouse Cloud with the given tenant URL and assigned user credential mentioned above.	
Go to the Home Screen.	

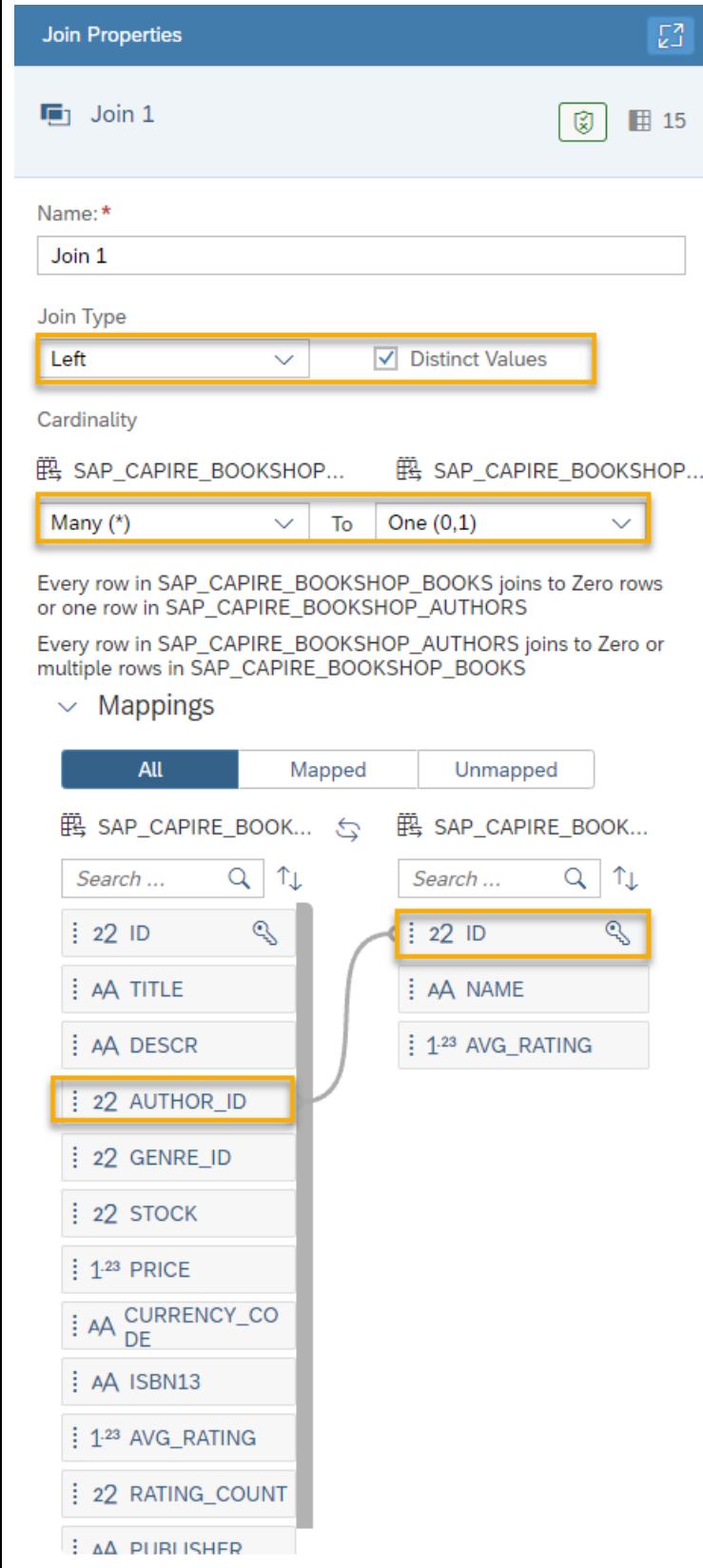
Explanation	Screenshot
Click on the Space.	 <p>Welcome to the Data Builder</p> <p>Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.</p> <p>Spaces (2)</p> <ul style="list-style-type: none"> <li>DEMO (highlighted with a yellow box)       <ul style="list-style-type: none"> <li>Used Storage (0 Byte of 2 GB)</li> </ul> </li> <li>DEV       <ul style="list-style-type: none"> <li>Used Storage (9.77 MB of 2 GB)</li> </ul> </li> </ul>
Click on Views.	 <p>Welcome to the Data Builder</p> <p>Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.</p> <p>All Files   Tables   <b>Views</b>   E/R Models   Data Flows</p> <p>New Graphical View   New SQL View</p>
Select New Graphical View.	 <p>Welcome to the Data Builder</p> <p>Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.</p> <p>All Files   Tables   Views   E/R Models   Data Flows</p> <p>New Graphical View   New SQL View</p>

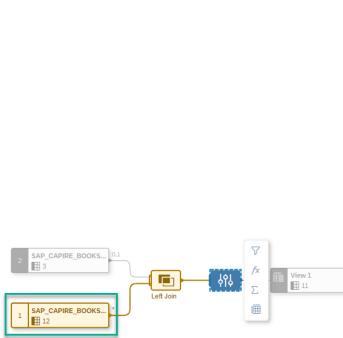
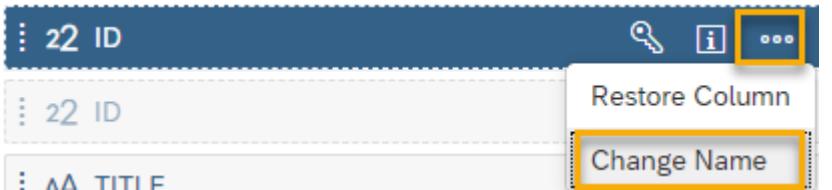
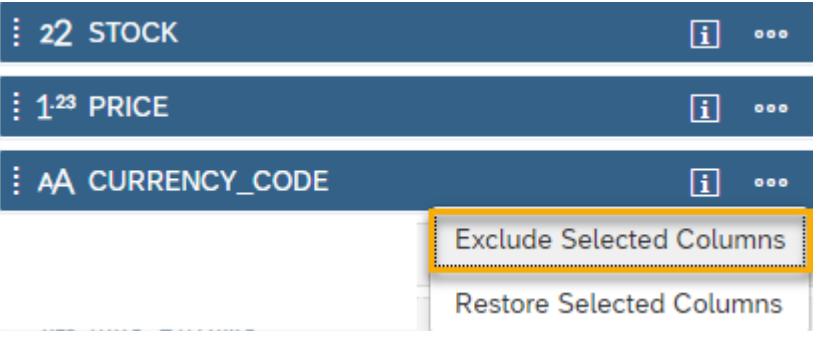
Explanation	Screenshot
Navigate to Sources.	 <p>The SAP Data Builder interface is shown with the title bar "View - New Graphical View*". The top navigation bar includes "General", "View", "Edit", and icons for file operations. Below the navigation is a toolbar with icons for repository, sources, and search. The main menu has two tabs: "Repository" and "Sources", with "Sources" being the active tab. A search bar is present below the tabs. A sidebar on the left shows a tree view with "Connections" expanded.</p>
Open the Connections.	 <p>The SAP Data Builder interface is shown with the title bar "View - New Graphical View*". The top navigation bar includes "General", "View", "Edit", and icons for file operations. Below the navigation is a toolbar with icons for repository, sources, and search. The main menu has two tabs: "Repository" and "Sources", with "Sources" being the active tab. A search bar is present below the tabs. A sidebar on the left shows a tree view with "Connections" selected.</p>
<p>Open the Connections and look for <b>HANACLOUD_&lt;USERID&gt;</b>, which is created in <a href="#">Exercise 02-Connecting SAP HANA Cloud to SAP Data Warehouse Cloud</a>.</p> <p>If a connection to SAP HANA Cloud has been preconfigured for you in DWC, please, look for the connection name provided in the exercise instructions on the bootcamp Teams channel.</p> <p>NB: The connection name shown in the screenshot is just an example!</p> <p>In the Search box, provide the name of the Container</p>	 <p>The SAP Data Builder interface is shown with the title bar "View - New Graphical View*". The top navigation bar includes "General", "View", "Edit", and icons for file operations. Below the navigation is a toolbar with icons for repository, sources, and search. The main menu has two tabs: "Repository" and "Sources", with "Sources" being the active tab. A search bar is present below the tabs. A sidebar on the left shows a tree view. The "Connections" node is expanded, revealing a "HANA_CLOUD" node, which contains a "DATA2VALUE" node. The "DATA2VALUE" node is highlighted with a dotted selection box.</p>

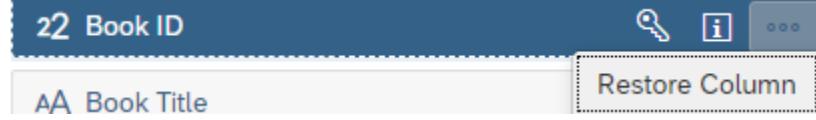
Explanation	Screenshot
(Schema) where the bookshop solution data resides. For the Data-to-Value bootcamp, please, use schema <b>DATA2VALUE</b> , in which the bookshop data is loaded.	
Open the schema.	 <p>The screenshot shows the SAP Data Builder interface with the title bar "SAP Data Builder   AC3744U01   View - New Graphical View*". The top navigation bar includes "General", "View", "Edit", and icons for file operations. Below the navigation is a toolbar with icons for repository, sources, and connections. The main area is titled "Repository" and shows the schema "DATA2VALUE" selected. Under "DATA2VALUE", the following tables are listed: SAP_CAPIRE_BOOKSHOP_AUTHORS, SAP_CAPIRE_BOOKSHOP_BOOKS, SAP_CAPIRE_BOOKSHOP_GENRES, and SAP_CAPIRE_BOOKSHOP_ORDERITEMS.</p>
<p>Select the table <b>SAP_CAPIRE_BOOKSHOP_AUTHORS</b> and drag it to the Canvas.</p> <p>Accept the Business Name as Technical name as shown or change it if needed.</p> <p>Click on Import and Deploy.</p> <p>Watch out for the message for successful deployment.</p>	<p>Import Table</p> <hr/> <p>Business Name: <b>SAP_CAPIRE_BOOKSHOP_AUTHORS</b></p> <p>Technical Name: <b>SAP_CAPIRE_BOOKSHOP_AUTHORS</b></p> <p><b>Import and Deploy</b> <b>Cancel</b></p>

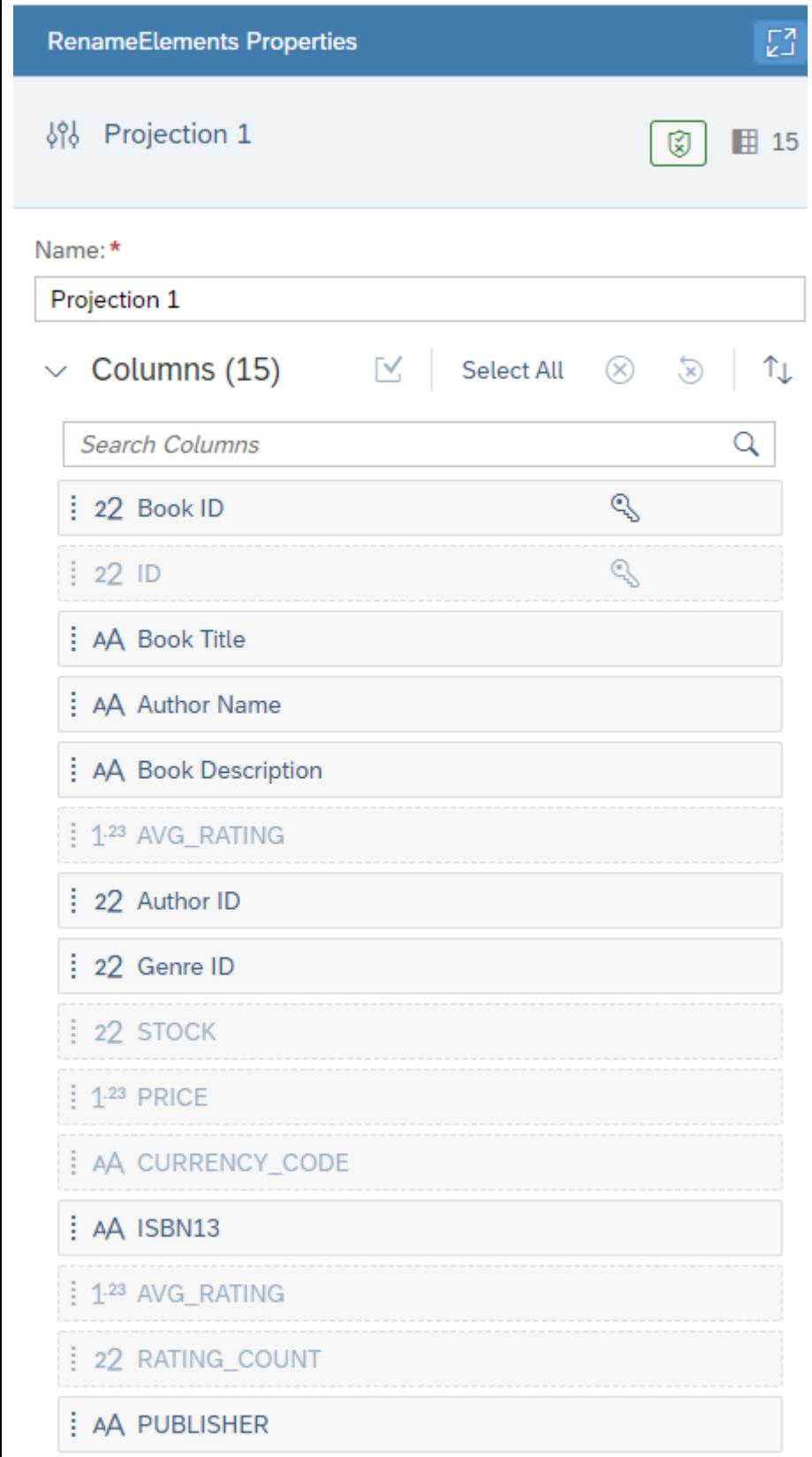
Explanation	Screenshot
<p>The table will be linked to the output as shown.</p>	
<p>Select the table <b>SAP_CAPIRE_BOOKSHOP_BOOKS</b> and drag to the Canvas and place it on the SAP_CAPIRE_BOOKSHOP_P_AUTHORS table. System provides an option to join</p>	
<p>Accept the Business Name as Technical name as shown or change it if needed. Click on Import and Deploy. Watch out for the message for successful deployment.</p>	<p>Import Table</p> <hr/> <p>Business Name: <input type="text" value="SAP_CAPIRE_BOOKSHOP_BOOKS"/></p> <p>Technical Name: <input type="text" value="SAP_CAPIRE_BOOKSHOP_BOOKS"/></p> <p><input type="button" value="Import and Deploy"/> <input type="button" value="Cancel"/></p>

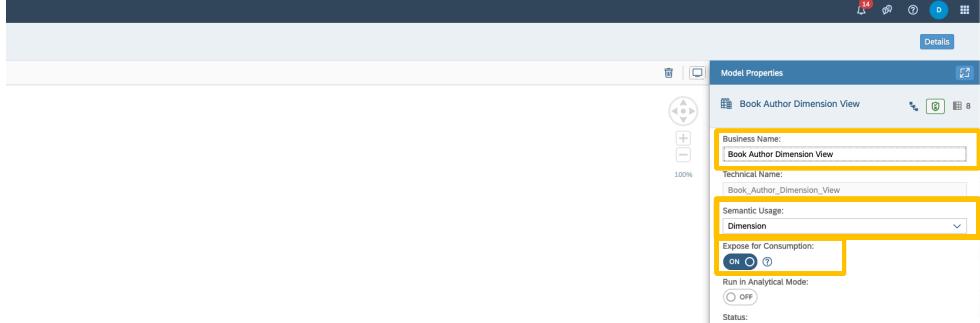
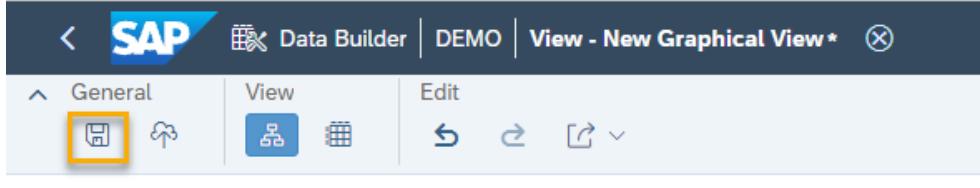
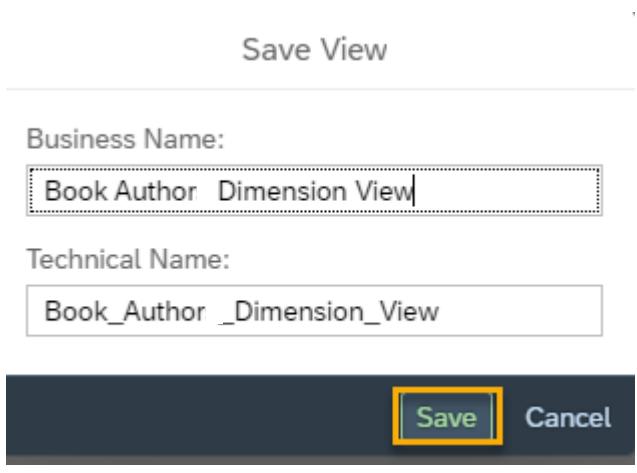
Explanation	Screenshot																				
<p>Select Left outer join and update the Cardinality.</p> <p>Initially the join is on the column ID by name determined by default by DWC, which is incorrect in this case.</p> <p>Delete the Join by selecting the mapping and clicking the Delete button.</p>	 <p>multiple rows in SAP_CAPIRE_BOOKSHOP_BOOKS</p> <p>Mappings</p> <p>All    Mapped    Unmapped</p> <p>SAP_CAPIRE_BOOK...    SAP_CAPIRE_BOOK...</p> <table border="1"> <thead> <tr> <th>Search...</th> <th>22 ID</th> <th>AA TITLE</th> <th>AA DESCRIPTOR</th> <th>22 AUTHOR_ID</th> <th>22 GENRE_ID</th> <th>22 STOCK</th> <th>1<sup>23</sup> PRICE</th> <th>AA CURRENCY_CODE</th> <th>AA ISBN13</th> </tr> </thead> <tbody> <tr> <td>Search...</td> <td>22 ID</td> <td>AA TITLE</td> <td>AA DESCRIPTOR</td> <td>22 AUTHOR_ID</td> <td>22 GENRE_ID</td> <td>22 STOCK</td> <td>1<sup>23</sup> PRICE</td> <td>AA CURRENCY_CODE</td> <td>AA ISBN13</td> </tr> </tbody> </table>	Search...	22 ID	AA TITLE	AA DESCRIPTOR	22 AUTHOR_ID	22 GENRE_ID	22 STOCK	1 <sup>23</sup> PRICE	AA CURRENCY_CODE	AA ISBN13	Search...	22 ID	AA TITLE	AA DESCRIPTOR	22 AUTHOR_ID	22 GENRE_ID	22 STOCK	1 <sup>23</sup> PRICE	AA CURRENCY_CODE	AA ISBN13
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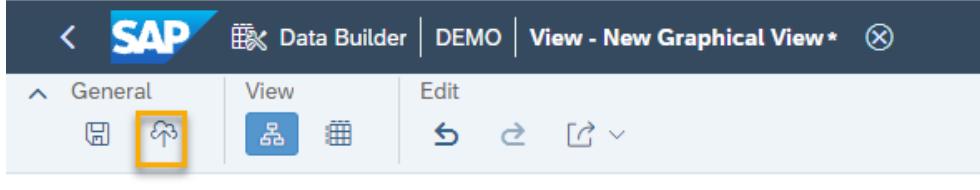
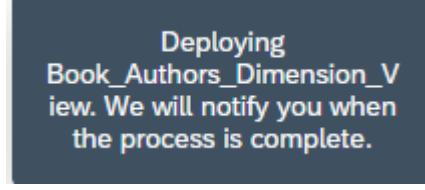
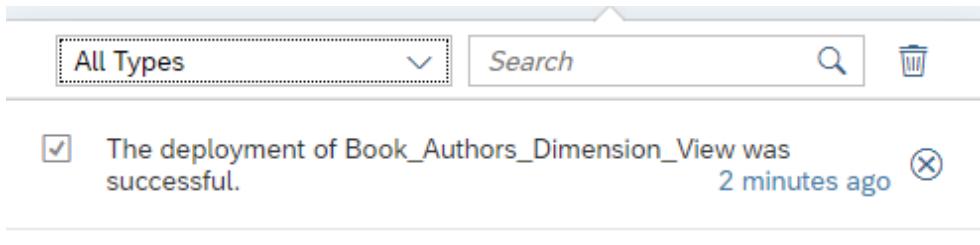
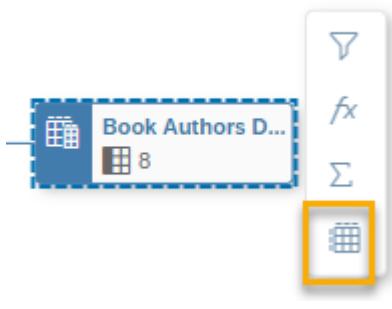
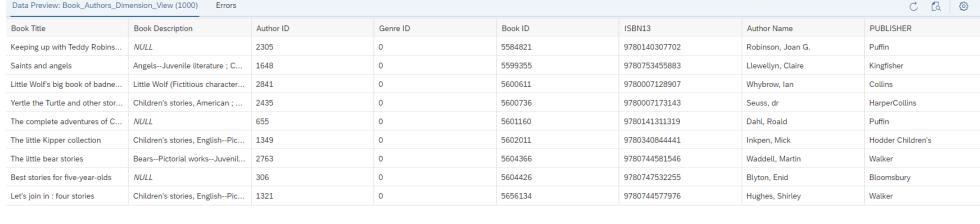
Explanation	Screenshot																																										
<p>Change the mapping as shown here. To map select the source object and drag it to the target object.</p>	 <p>Join Properties</p> <p>Join 1</p> <p>Name: * Join 1</p> <p>Join Type: Left <input checked="" type="checkbox"/> Distinct Values</p> <p>Cardinality: Many (*) To One (0,1)</p> <p>Every row in SAP_CAPIRE_BOOKSHOP_BOOKS joins to Zero rows or one row in SAP_CAPIRE_BOOKSHOP_AUTHORS</p> <p>Every row in SAP_CAPIRE_BOOKSHOP_AUTHORS joins to Zero or multiple rows in SAP_CAPIRE_BOOKSHOP_BOOKS</p> <p>Mappings</p> <table border="1"> <thead> <tr> <th>All</th> <th>Mapped</th> <th>Unmapped</th> </tr> </thead> <tbody> <tr> <td>SAP_CAPIRE_BOOK... </td> <td>SAP_CAPIRE_BOOK... </td> <td></td> </tr> <tr> <td>22 ID </td> <td>22 ID </td> <td></td> </tr> <tr> <td>AA TITLE</td> <td>AA NAME</td> <td></td> </tr> <tr> <td>AA DESCRIPT</td> <td>1<sup>23</sup> AVG_RATING</td> <td></td> </tr> <tr> <td>22 AUTHOR_ID</td> <td></td> <td></td> </tr> <tr> <td>22 GENRE_ID</td> <td></td> <td></td> </tr> <tr> <td>22 STOCK</td> <td></td> <td></td> </tr> <tr> <td>1<sup>23</sup> PRICE</td> <td></td> <td></td> </tr> <tr> <td>AA CURRENCY_CO DE</td> <td></td> <td></td> </tr> <tr> <td>AA ISBN13</td> <td></td> <td></td> </tr> <tr> <td>1<sup>23</sup> AVG_RATING</td> <td></td> <td></td> </tr> <tr> <td>22 RATING_COUNT</td> <td></td> <td></td> </tr> <tr> <td>AA PUBLISHER</td> <td></td> <td></td> </tr> </tbody> </table>	All	Mapped	Unmapped	SAP_CAPIRE_BOOK...	SAP_CAPIRE_BOOK...		22 ID	22 ID		AA TITLE	AA NAME		AA DESCRIPT	1 <sup>23</sup> AVG_RATING		22 AUTHOR_ID			22 GENRE_ID			22 STOCK			1 <sup>23</sup> PRICE			AA CURRENCY_CO DE			AA ISBN13			1 <sup>23</sup> AVG_RATING			22 RATING_COUNT			AA PUBLISHER		
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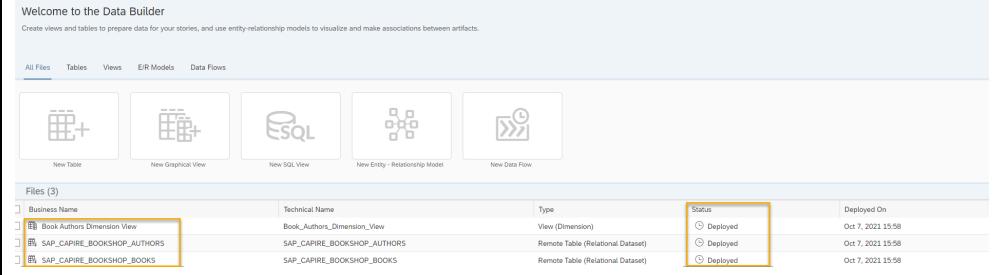
Explanation	Screenshot
<p>Click on Projection icon </p> <p>Here we will rename some columns and hide a few columns.</p> <p>To ensure you are changing the expected column select the column in the projection view and in the canvas check on the mapping for the source.</p> <p>You need to <b>rename the ID coming from the BOOKS table to "Book ID"</b>, not to make confusion in the following with the other ID coming from the AUTHORS table.</p> <p>If you are not sure about the provenance of the ID field, click on it and see which branch is highlighted in yellow.</p>	
<p>To rename the column names select the 3 dots icon.</p>	
<p>Select Change Name option.</p>	
<p>To exclude the unneeded columns, either select one or multiple columns and select the Exclude Selected Columns option. Here we will exclude the following columns:</p> <ul style="list-style-type: none"> <li>• STOCK</li> <li>• PRICE</li> <li>• CURRENCY_CODE</li> </ul>	

Explanation	Screenshot
If you want to restore a column, select the column, and choose the Restore Column option	 <p>The screenshot shows a software interface with a toolbar at the top. On the far right of the toolbar, there is a button with three dots (...). A dashed rectangular box highlights this button, and the text "Restore Column" is written to its right.</p>

Explanation	Screenshot
<p>After the changes we should have the columns for output as shown here.</p> <p><b>The greyed ones are the hidden ones that remain in the list, this is OK.</b></p>	 <p>The screenshot shows the 'RenameElements Properties' dialog with 'Projection 1' selected. The 'Columns (15)' section lists the following columns:</p> <ul style="list-style-type: none"> <li>z2 Book ID</li> <li>z2 ID</li> <li>AA Book Title</li> <li>AA Author Name</li> <li>AA Book Description</li> <li>1-23 AVG_RATING</li> <li>z2 Author ID</li> <li>z2 Genre ID</li> <li>z2 STOCK</li> <li>1-23 PRICE</li> <li>AA CURRENCY_CODE</li> <li>AA ISBN13</li> <li>1-23 AVG_RATING</li> <li>z2 RATING_COUNT</li> <li>AA PUBLISHER</li> </ul> <p>Some columns like '1-23 AVG_RATING', '1-23 PRICE', and 'AA CURRENCY_CODE' are displayed in a faded, greyed-out style, indicating they are hidden or inactive.</p>

Explanation	Screenshot
<p>In the central canvas select the output view and change the definition in the output view as shown:</p> <ul style="list-style-type: none"> <li><b>Business Name:</b> Book Author Dimension View</li> <li><b>Semantic Usage:</b> Dimension</li> <li><b>Expose for Consumption:</b> On</li> </ul>	
<p>Later we will use this view to</p> <ul style="list-style-type: none"> <li>create a Book Author Dimension in <a href="#">DV200 Exercise04</a> with Business Builder, therefore, the semantic usage is set as Dimension</li> <li>as the data source of <a href="#">DV220 Exercise01</a> about Book Genre Clustering. Please, assure to switch on Expose for Consumption.</li> </ul>	
<p>Click Save.</p>	
<p>Confirm the Name and click Save.</p>	

Explanation	Screenshot
Click Deploy.	
You will see a message below as shown.	
You receive also a notification of the status.	
Click on Notification and check the details.	
You can check the output using the Data Preview option.	
The preview is as shown in the screenshot. As a result, we have a Book Author Dimension View defined.	

Explanation	Screenshot																				
<p>You can also check for the deployed objects by navigating to Data Builder→ Select Space→ Go to All Files</p>	 <p>Welcome to the Data Builder Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.</p> <p>All Files   Tables   Views   E/R Models   Data Flows</p> <p>New Table   New Graphical View   New SQL View   New Entity - Relationship Model   New Data Flow</p> <p>Files (3)</p> <table border="1"> <thead> <tr> <th>Business Name</th> <th>Technical Name</th> <th>Type</th> <th>Status</th> <th>Deployed On</th> </tr> </thead> <tbody> <tr> <td>Book Authors Dimension View</td> <td>Book_Authors_Dimension_View</td> <td>View (Dimension)</td> <td><input checked="" type="radio"/> Deployed</td> <td>Oct 7, 2021 15:58</td> </tr> <tr> <td>SAP_CAPIRE_BOOKSHOP_AUTHORS</td> <td>SAP_CAPIRE_BOOKSHOP_AUTHORS</td> <td>Remote Table (Relational Dataset)</td> <td><input checked="" type="radio"/> Deployed</td> <td>Oct 7, 2021 15:58</td> </tr> <tr> <td>SAP_CAPIRE_BOOKSHOP_BOOKS</td> <td>SAP_CAPIRE_BOOKSHOP_BOOKS</td> <td>Remote Table (Relational Dataset)</td> <td><input checked="" type="radio"/> Deployed</td> <td>Oct 7, 2021 15:58</td> </tr> </tbody> </table>	Business Name	Technical Name	Type	Status	Deployed On	Book Authors Dimension View	Book_Authors_Dimension_View	View (Dimension)	<input checked="" type="radio"/> Deployed	Oct 7, 2021 15:58	SAP_CAPIRE_BOOKSHOP_AUTHORS	SAP_CAPIRE_BOOKSHOP_AUTHORS	Remote Table (Relational Dataset)	<input checked="" type="radio"/> Deployed	Oct 7, 2021 15:58	SAP_CAPIRE_BOOKSHOP_BOOKS	SAP_CAPIRE_BOOKSHOP_BOOKS	Remote Table (Relational Dataset)	<input checked="" type="radio"/> Deployed	Oct 7, 2021 15:58
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