



PARTNER

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

DV200 Exercise02 – Creating a Data Flow with Data Builder of SAP Data Warehouse Cloud

This document will guide you step by step on the process of creating a Data Flow to combine the archived historic book sales order (2011~2019) from Amazon S3 and live book sales order (2020~2021) from SAP S/4HANA Cloud, persist the output result into a local table in SAP Data Warehouse Cloud as a complete analytical dataset of book sales orders.

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DISCLAIMER

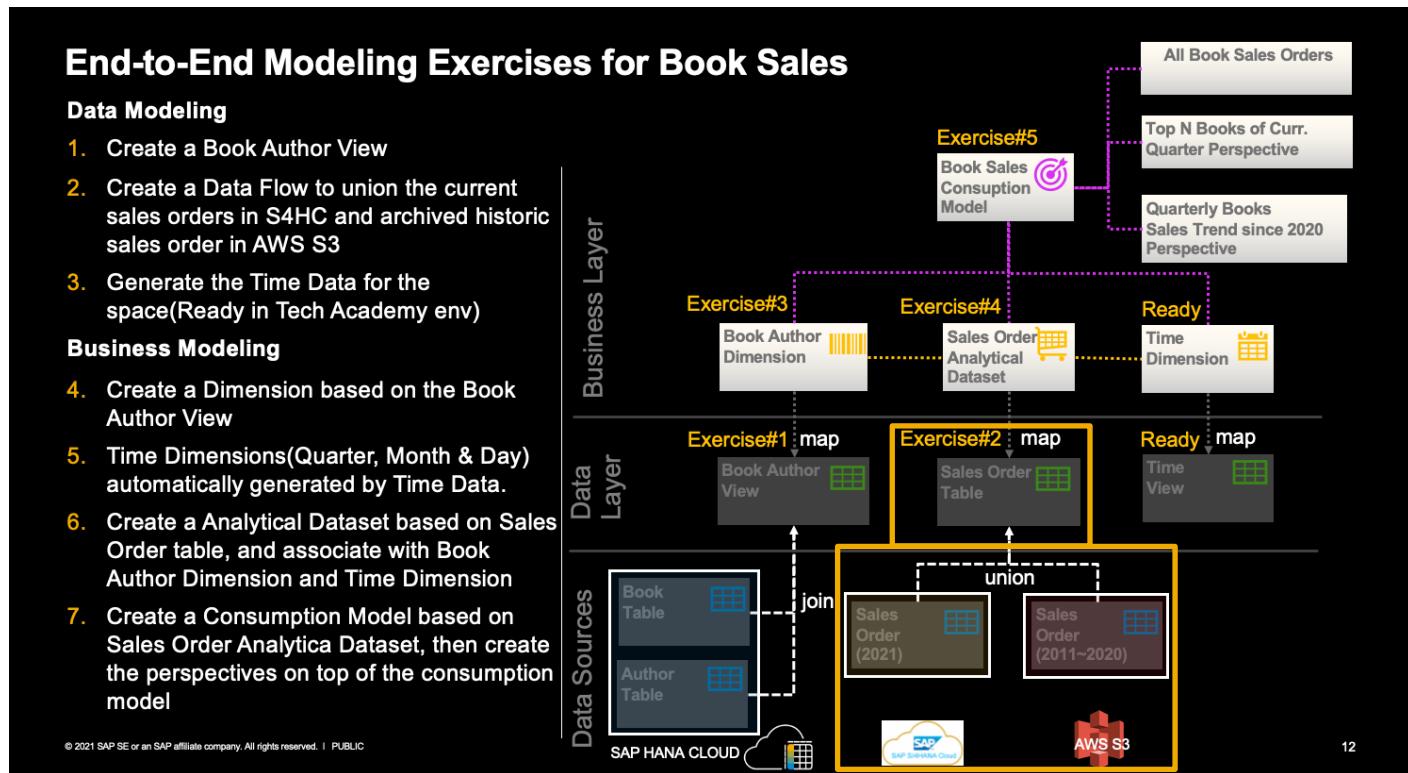
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OBJECTIVE

The objective of this exercise is to provide the steps needed to create a Data flow using S/4 HANA Cloud and Amazon S3 as source.

SCENARIO

In this session we will use the scenario as seen in Demo #2 in the below image:



In this session we will create a Data Flow View using Data Builder. We will use the the SAP S/4 HANA Cloud and the Amazon S3 connections to access respectively:

- The CDS View C_SALESDOCUMENTITEMDEX_1 from S/4 HANA Cloud filtered SDDocumentCategory by Order ('C') as Live Sales Order Data of the bookshop.
- The archived Sales Order Data of the bookshop from the Amazon S3.

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.

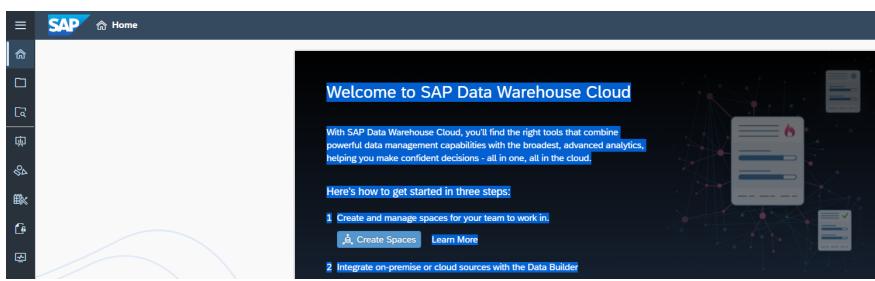
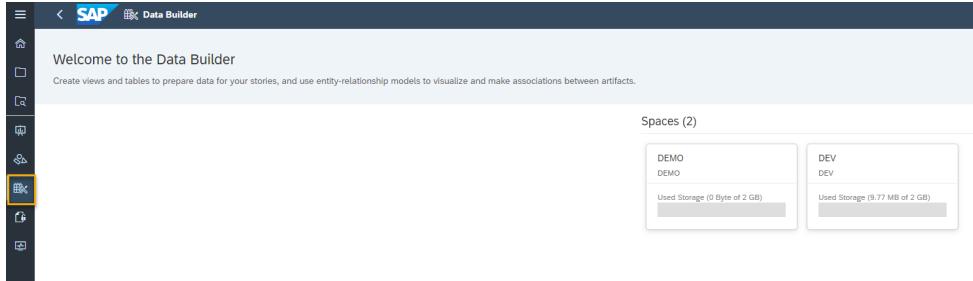
- The SAP Data Warehouse cloud tenant URL is available in the dedicated **Microsoft Teams > General (Channel) > System Access (Tab) > SAP Data Warehouse Cloud (Section)**, which you have been invited.
 - Your assigned user id and password for SAP Data Warehouse Cloud are communicated individually via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

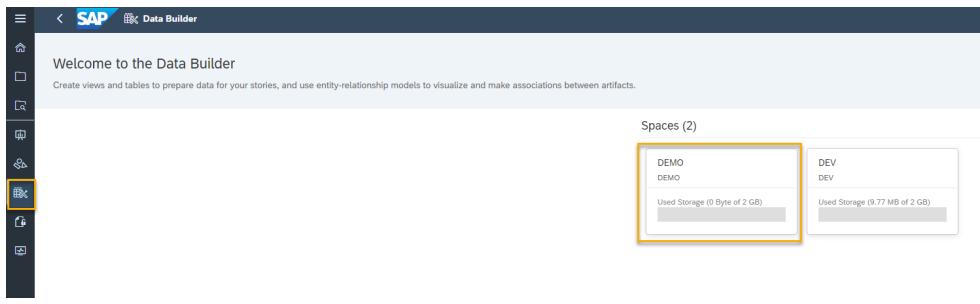
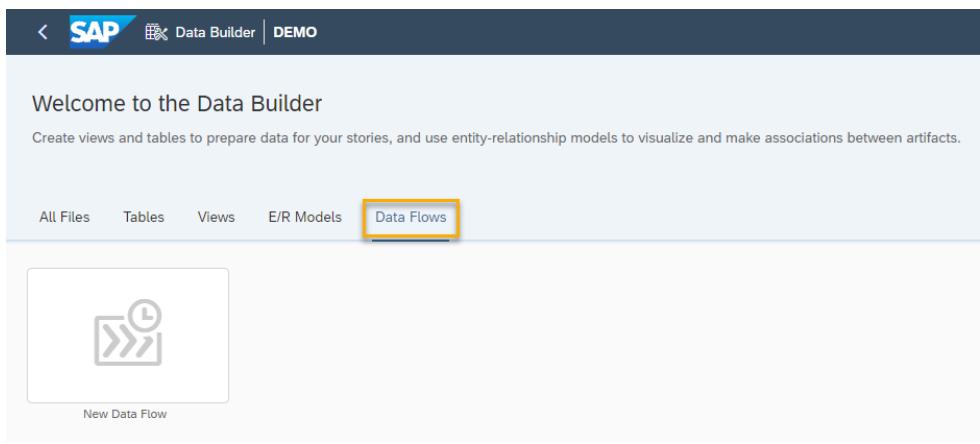
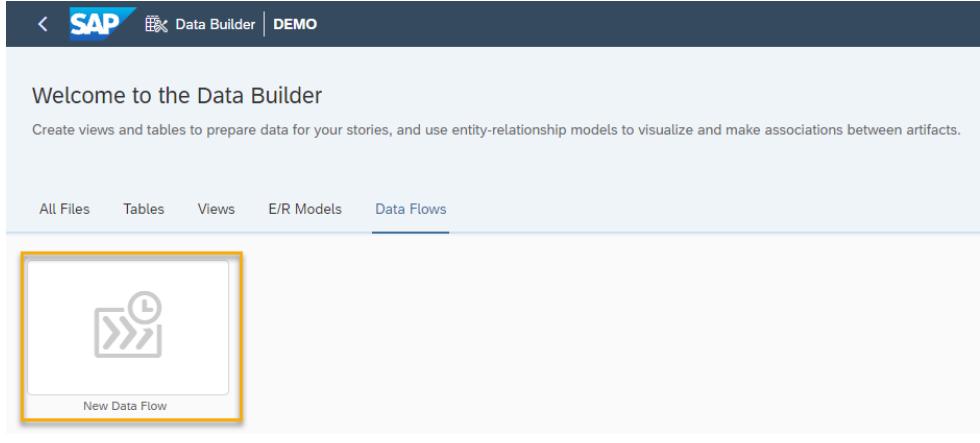
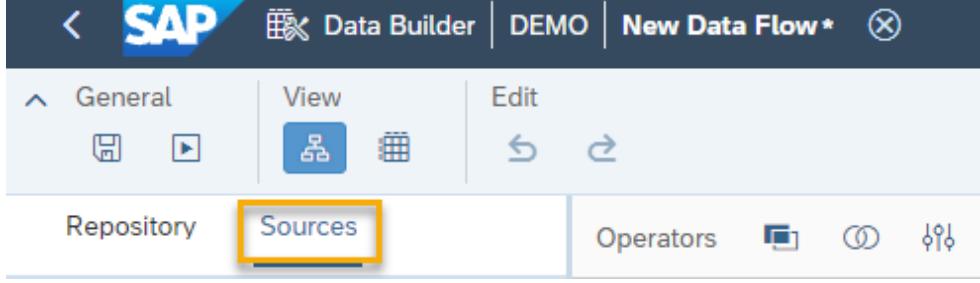
PREREQUISITES

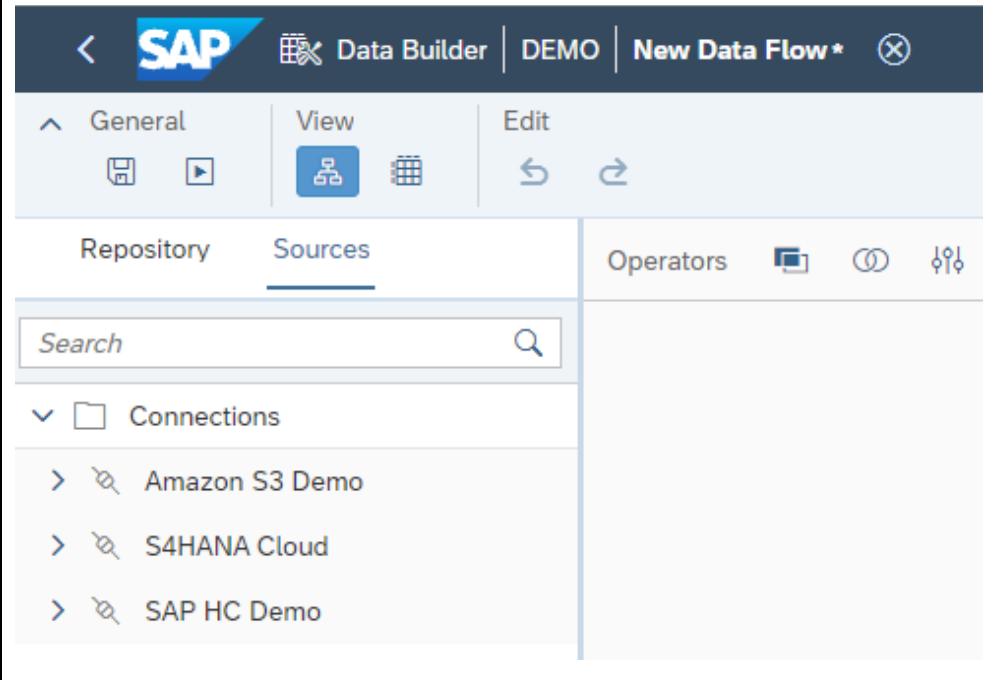
The connections to SAP S/4HANA Cloud and Amazon S3 are created and valid in SAP Data Warehouse Cloud as per:

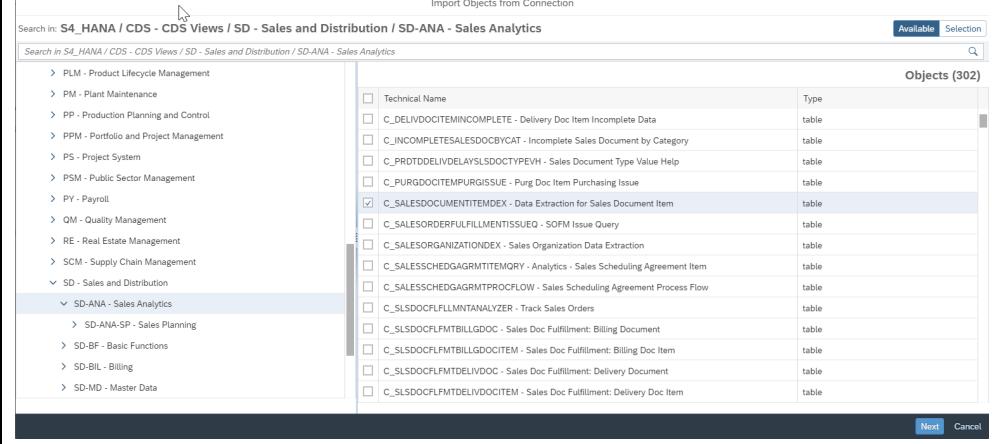
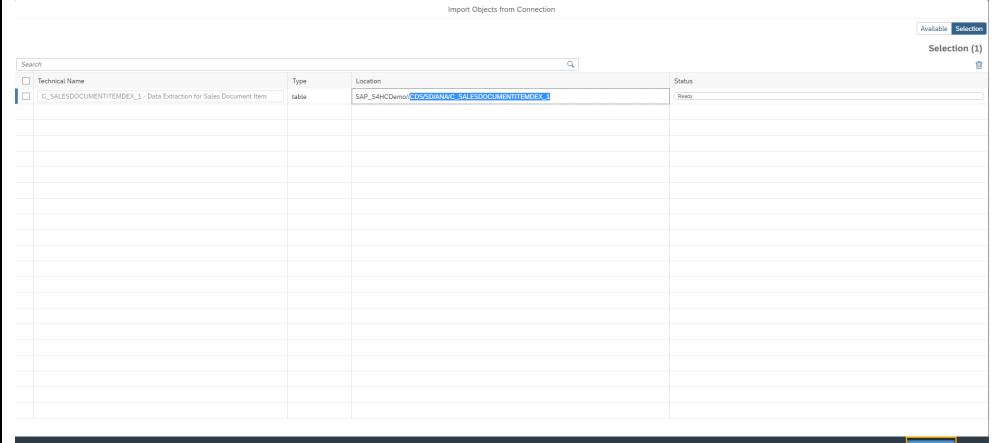
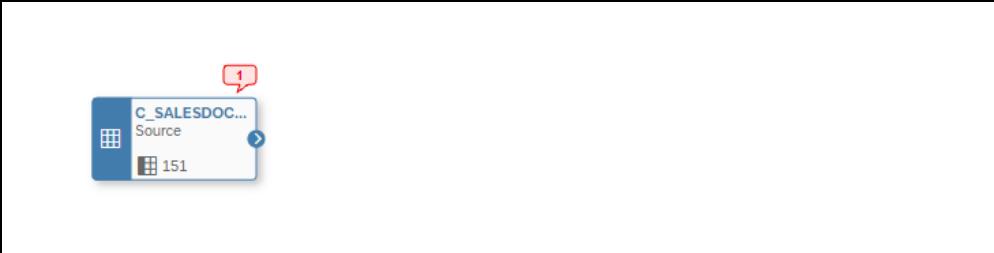
- DV140_Exercise01: Connect SAP S/4HANA Cloud to SAP Data Warehouse Cloud.
- DV140_Exercise03: Connect AWS S3 to SAP Data Warehouse Cloud.

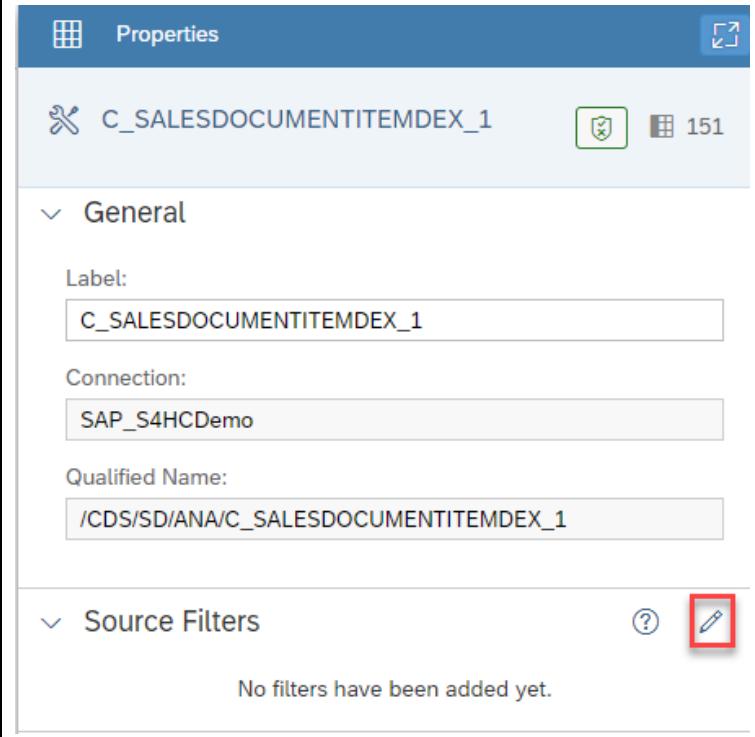
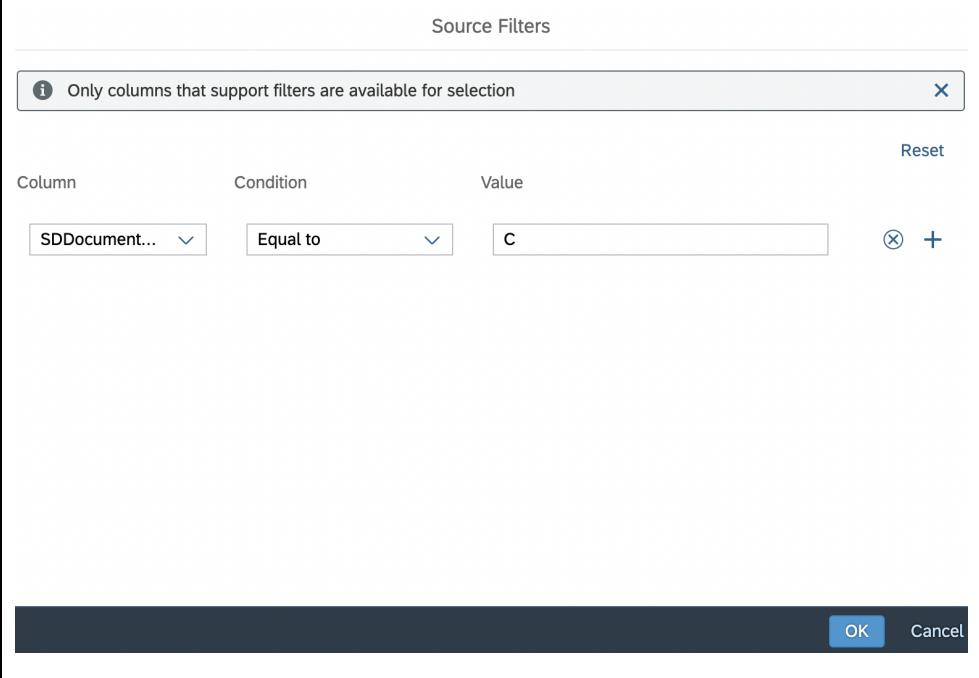
EXERCISE STEP DETAILS

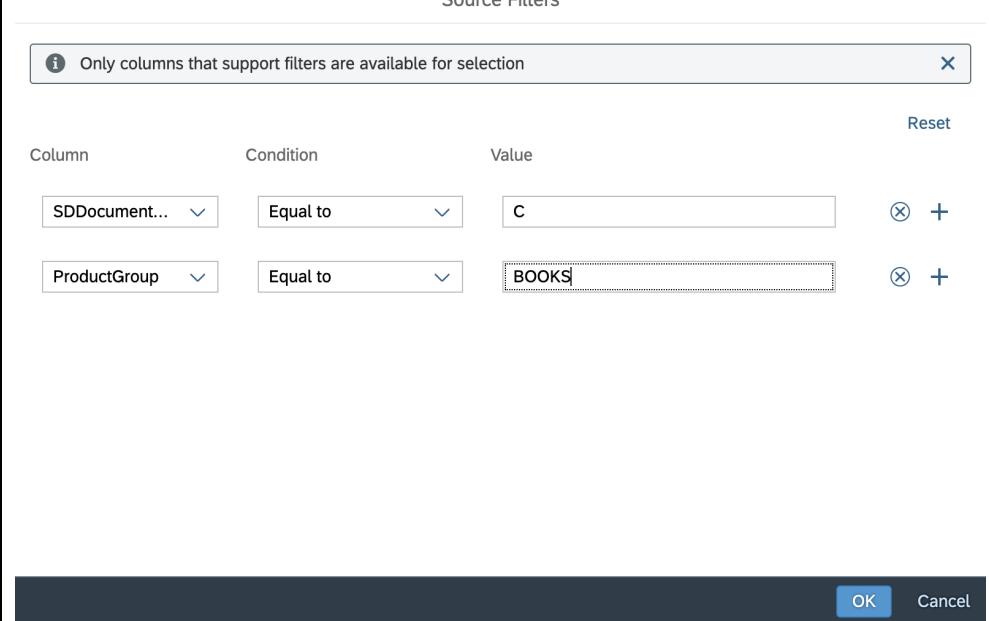
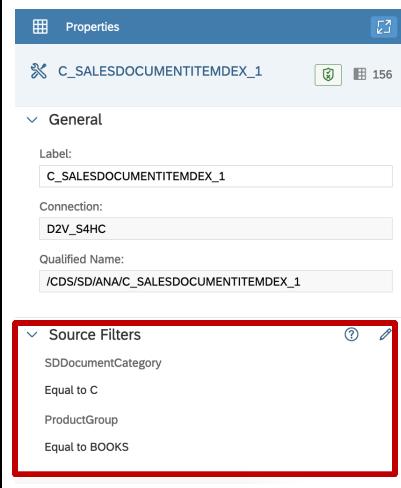
Explanation	Screenshot
Log on to SAP Data Warehouse Cloud with the given tenant URL and assigned user credential mentioned above.	
Go to the Home Screen.	

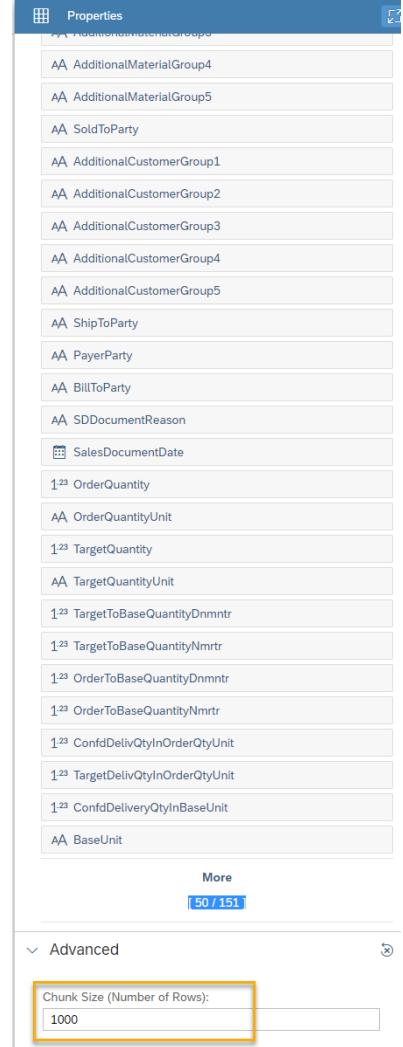
Explanation	Screenshot
Click on the Space.	 <p>Welcome to the Data Builder</p> <p>Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.</p> <p>Spaces (2)</p> <ul style="list-style-type: none"> DEMO (Selected) DEV <p>Used Storage (0 Byte of 2 GB)</p> <p>Used Storage (9.77 MB of 2 GB)</p>
Click on Data Flows.	 <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 Data Flow</p>
Select New Data Flows.	 <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 Data Flow</p>
Navigate to Sources.	 <p>< SAP Data Builder DEMO New Data Flow* X</p> <p>General View Edit</p> <p>Repository Sources Operators</p>

Explanation	Screenshot
Open the Connections.	
<p>Open the S4HANA Cloud Connection. Click on Import connection using the icon shown.</p> <p>NB: The name of the S4HANA Cloud connection shown in this screenshot is just an example. Please, check the name you assigned to the connection when you went through exercise DV140_Exercise01. The convention we suggested is: S4HC_<USERID>.</p>	

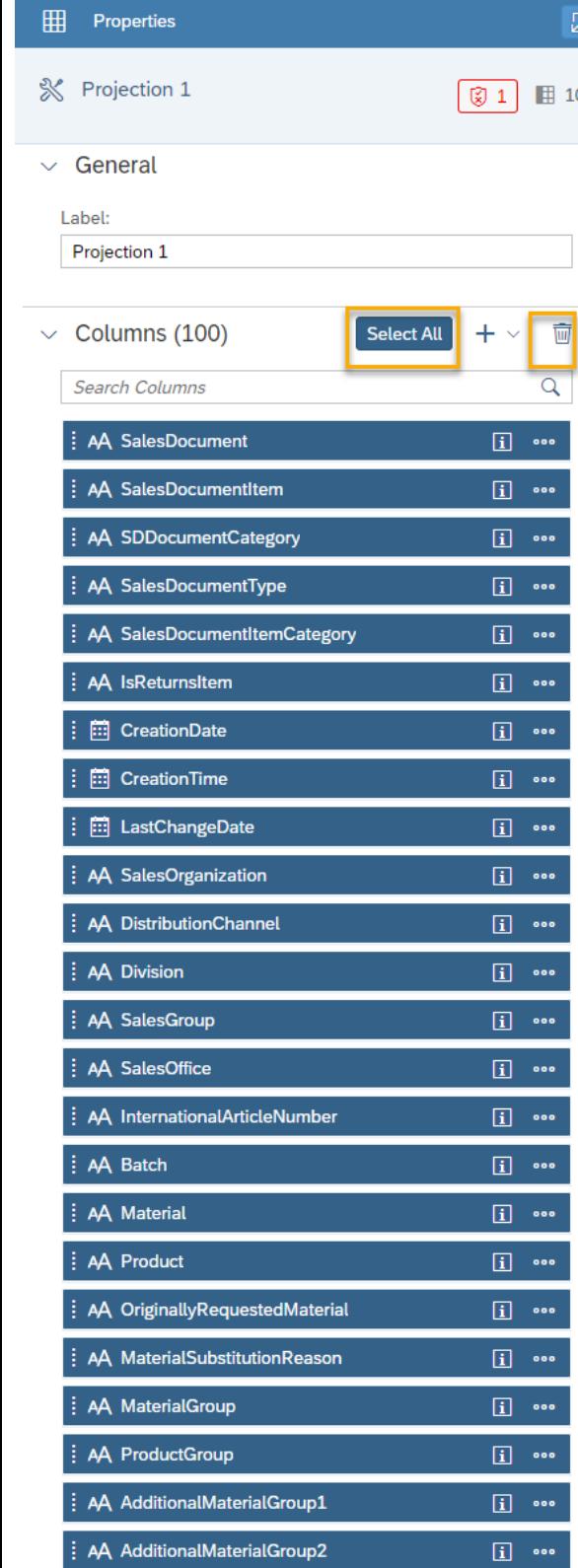
Explanation	Screenshot
<p>In the popup window. Navigate to SD - Sales and Distribution → SD-ANA - Sales Analytics.</p> <p>On the right side select the CDS view C_SALESDOCUMENTITEMD EX → Click Next.</p>	 <p>The screenshot shows a search interface for selecting objects from a connection. The search bar at the top says "Search in S4_HANA / CDS - CDS Views / SD - Sales and Distribution / SD-ANA - Sales Analytics". Below the search bar is a tree view of SAP modules and sub-modules. Under "SD-ANA - Sales Analytics", the node "C_SALESDOCUMENTITEMD EX" is highlighted with a yellow box. To the right of the tree view is a table titled "Objects (302)" listing various objects with their technical names and types. The object "C_SALESDOCUMENTITEMD EX" is selected, indicated by a checked checkbox. At the bottom right of the dialog are "Next" and "Cancel" buttons.</p>
<p>We can leave the proposed name and choose Add Selection.</p>	 <p>The screenshot shows a dialog for adding a selection. It includes fields for "Technical Name" (set to "C_SALESDOCUMENTITEMD_EX - Data Extraction for Sales Document Item"), "Type" (set to "table"), "Location" (set to "SAP_S4HCDemo_CDSVIEWNAME_CDSDOCUMENTITEMDEX"), and "Status" (set to "Ready"). At the bottom right are "Add Selection" and "Cancel" buttons.</p>
<p>Once the object is imported you will see that on the central canvas.</p>	 <p>The screenshot shows the central canvas with a blue rounded rectangle icon representing the imported object. A small red box with the number "1" is placed above the icon, indicating the imported object.</p>
<p>We only need the data that has the below status:</p> <p>SDDocumentCategory = 'C', ProductGroup = 'BOOKS'.</p> <p>We will set a filter for these restrictions, which only return the book sales orders.</p>	<p>Select the Object on Central Canvas and Edit the Properties</p>

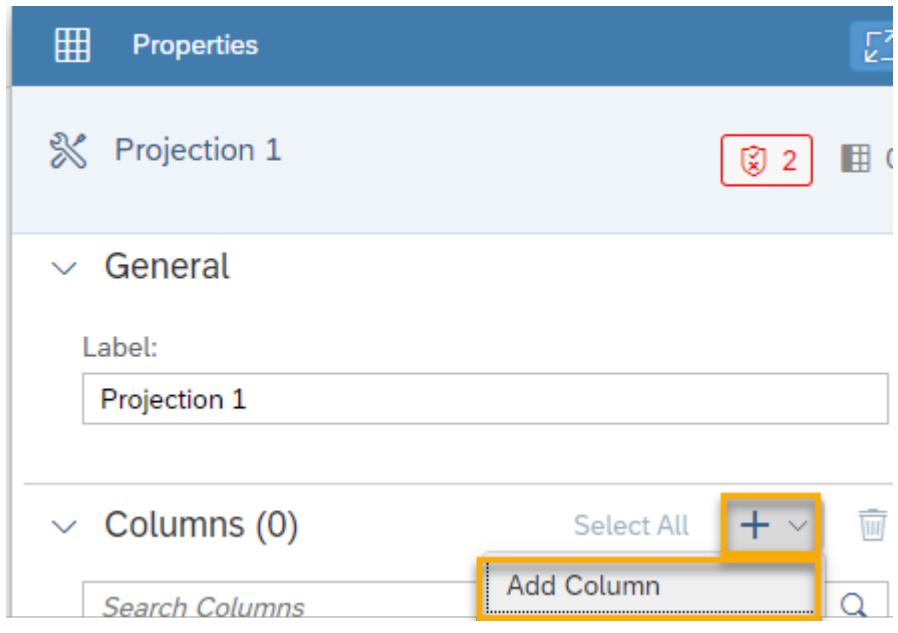
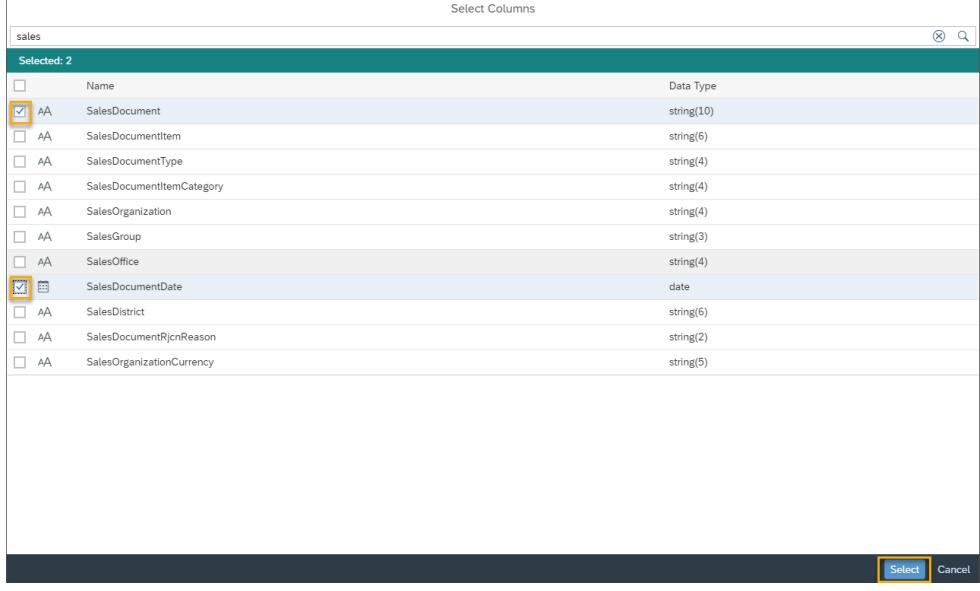
Explanation	Screenshot
	 <p>The screenshot shows the SAP Fiori Properties dialog for a model component named C_SALESDOCUMENTITEMDEX_1. The General section contains fields for Label (C_SALESDOCUMENTITEMDEX_1), Connection (SAP_S4HCDemo), and Qualified Name (/CDS/SD/ANA/C_SALESDOCUMENTITEMDEX_1). The Source Filters section, which is collapsed, has a red box around its edit icon.</p>
<p>Select the 1st filter on SDDocumentCategory.</p>	 <p>The screenshot shows the Source Filters dialog. It displays a message: "Only columns that support filters are available for selection". A single filter entry is shown: Column SDDocument..., Condition Equal to, Value C. There are buttons for OK and Cancel at the bottom.</p>

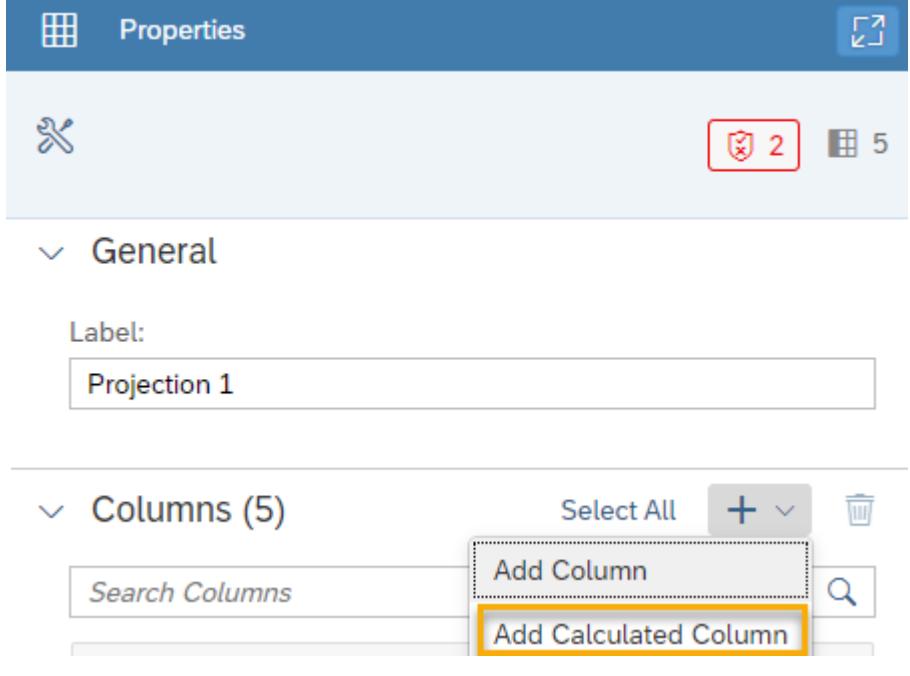
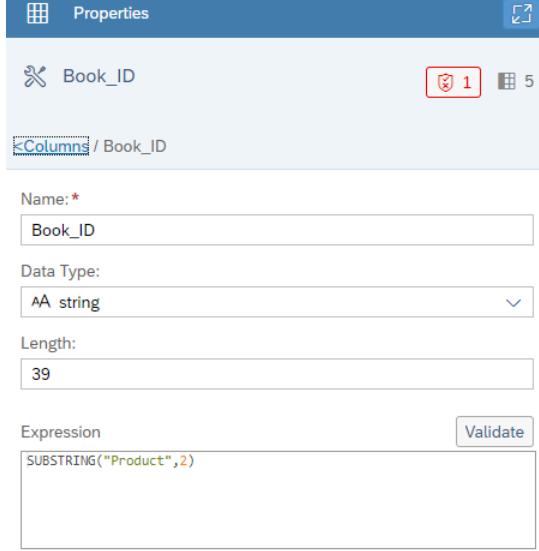
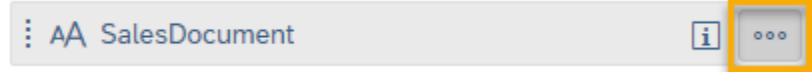
Explanation	Screenshot												
<p>Click + to add another filter on ProductGroup.</p>	 <p>Source Filters</p> <p>Only columns that support filters are available for selection</p> <table border="1"> <thead> <tr> <th>Column</th> <th>Condition</th> <th>Value</th> <th>Reset</th> </tr> </thead> <tbody> <tr> <td>SDDocument...</td> <td>Equal to</td> <td>C</td> <td>+</td> </tr> <tr> <td>ProductGroup</td> <td>Equal to</td> <td>BOOKS</td> <td>+</td> </tr> </tbody> </table> <p>OK Cancel</p>	Column	Condition	Value	Reset	SDDocument...	Equal to	C	+	ProductGroup	Equal to	BOOKS	+
Column	Condition	Value	Reset										
SDDocument...	Equal to	C	+										
ProductGroup	Equal to	BOOKS	+										
<p>You should see the restrictions under the Source Filters section.</p>	 <p>Properties</p> <p>C_SALESDOCUMENTITEMDEX_1 156</p> <p>General</p> <p>Label: C_SALESDOCUMENTITEMDEX_1</p> <p>Connection: D2V_S4HC</p> <p>Qualified Name: /CDS/SD/ANA/C_SALESDOCUMENTITEMDEX_1</p> <p>Source Filters</p> <ul style="list-style-type: none"> SDDocumentCategory Equal to C ProductGroup Equal to BOOKS 												

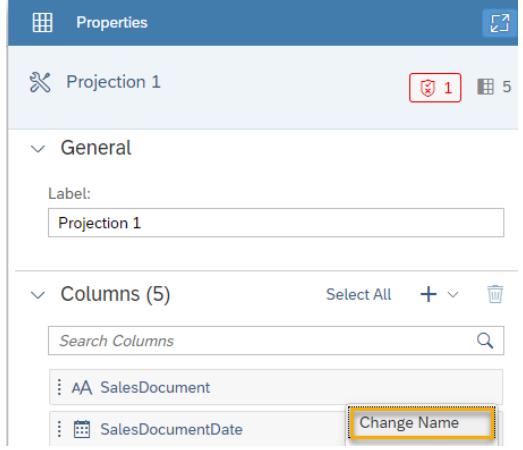
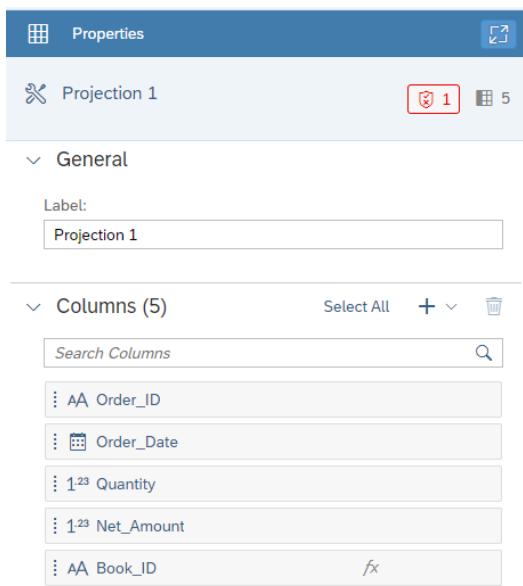
Explanation	Screenshot
<p>Navigate to the Advanced section and set the Chunk size to 1000.</p>	 <p>The screenshot shows the 'Properties' window with the 'Advanced' section expanded. The 'Chunk Size (Number of Rows)' field is highlighted with a yellow box and contains the value '1000'.</p>
<p>We do not need all fields so we will apply a Projection and select the required fields (only 5). At the top of the central canvas choose projection in the Operators window.</p>	 <p>The screenshot shows the Operators window with the projection operator (Π) highlighted with a yellow box.</p>
<p>Drag the Projection operator on the central canvas.</p>	 <p>The screenshot shows the central canvas with two components: a 'Source' component (labeled 'C_SALESDOC...' with '151' rows) and a 'Projection 1' component (with '0' rows). The projection component has a red box labeled '2' above it, indicating the step where it is being placed.</p>

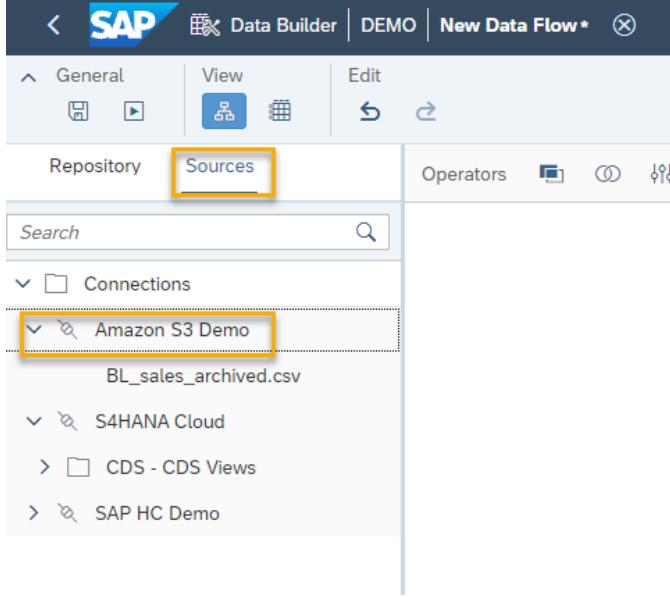
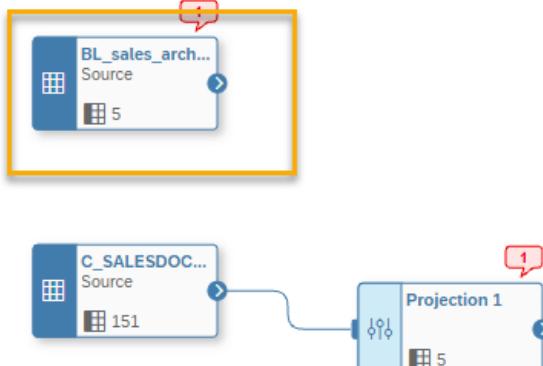
Explanation	Screenshot
<p>Drag the arrow from source to target to link the source with the operator.</p>	 <p>The screenshot shows a data flow diagram with two main components: a 'C_SALESDOC...' Source and a 'Projection 1' operator. A blue arrow connects the output of the Source to the input of the Projection operator. The Source component has a red callout bubble with the number '1'. The Projection operator has a red callout bubble with the number '2'.</p>

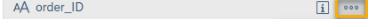
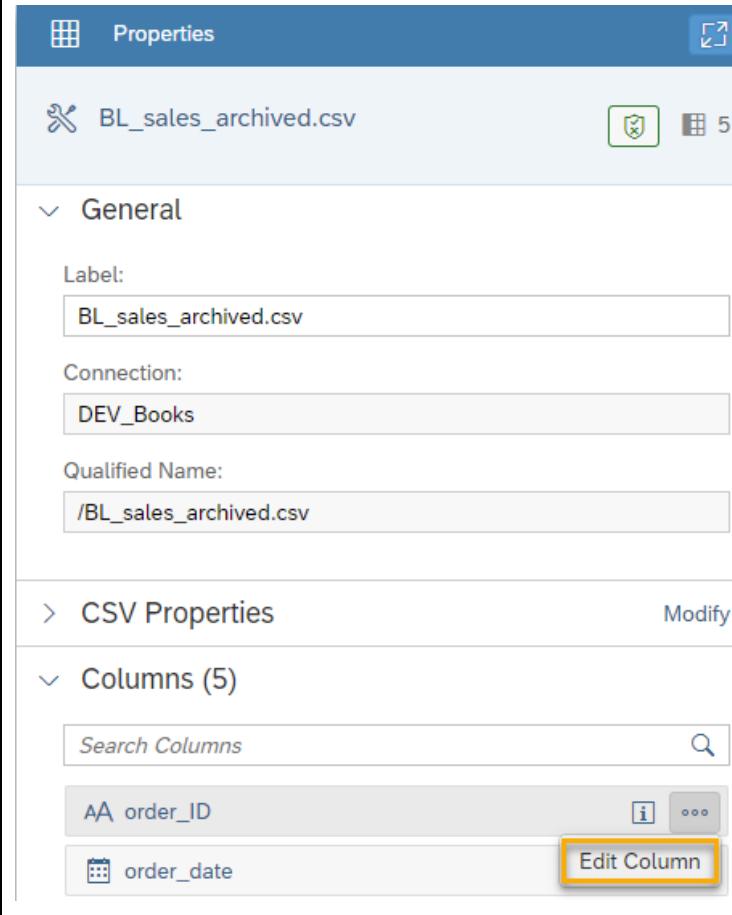
Explanation	Screenshot
<p>We have to do a bulk removal, so we will select all the fields and then we will delete them.</p>	 <p>The screenshot shows the 'Properties' screen for a 'Projection 1' entity. Under the 'General' tab, there is a 'Label' field containing 'Projection 1'. In the 'Columns (100)' section, there is a 'Select All' button and a trash can icon. Both of these are highlighted with orange boxes. Below these buttons is a search bar labeled 'Search Columns'. The list of columns includes various fields such as SalesDocument, SalesDocumentItem, SDDocumentCategory, SalesDocumentType, SalesDocumentItemCategory, IsReturnsItem, CreationDate, CreationTime, LastChangeDate, SalesOrganization, DistributionChannel, Division, SalesGroup, SalesOffice, InternationalArticleNumber, Batch, Material, Product, OriginallyRequestedMaterial, MaterialSubstitutionReason, MaterialGroup, ProductGroup, AdditionalMaterialGroup1, and AdditionalMaterialGroup2. Each column entry has an information icon and a three-dot ellipsis icon.</p>

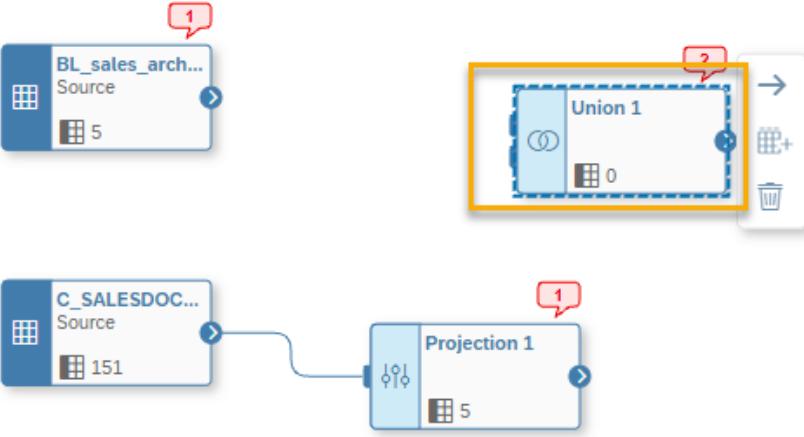
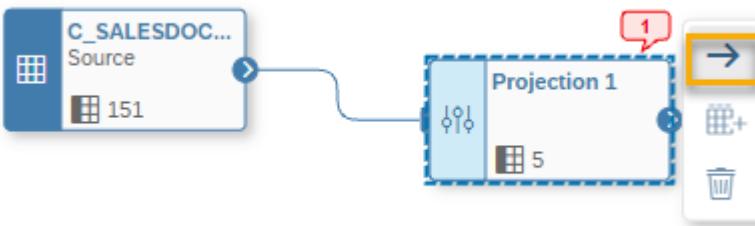
Explanation	Screenshot																																								
<p>Next, we will add the 5 columns that we need.</p> <p>In the table you see the source field, the name we would like to assign to them in the projection and the required action on each field.</p>	<table border="1"> <thead> <tr> <th data-bbox="523 255 812 287">Source</th><th data-bbox="812 255 1062 287">Target</th><th data-bbox="1062 255 1486 287">Change</th></tr> </thead> <tbody> <tr> <td data-bbox="523 297 812 329">SalesDocument</td><td data-bbox="812 297 1062 329">Order_ID</td><td data-bbox="1062 297 1486 329">Name Change</td></tr> <tr> <td data-bbox="523 340 812 371">SalesDocumentDate</td><td data-bbox="812 340 1062 371">Order_Date</td><td data-bbox="1062 340 1486 371">Name Change</td></tr> <tr> <td data-bbox="523 392 812 456">Product</td><td data-bbox="812 392 1062 456">Book_ID</td><td data-bbox="1062 392 1486 456">Derived using Expression SUBSTRING("Product",2)</td></tr> <tr> <td data-bbox="523 466 812 498">OrderQuantity</td><td data-bbox="812 466 1062 498">Quantity</td><td data-bbox="1062 466 1486 498">Name Change</td></tr> <tr> <td data-bbox="523 508 812 572">NetAmount</td><td data-bbox="812 508 1062 572">Net_Amount</td><td data-bbox="1062 508 1486 572">Derived using converter TO_DECIMAL("NetAmount ",15,2)</td></tr> </tbody> </table>	Source	Target	Change	SalesDocument	Order_ID	Name Change	SalesDocumentDate	Order_Date	Name Change	Product	Book_ID	Derived using Expression SUBSTRING("Product",2)	OrderQuantity	Quantity	Name Change	NetAmount	Net_Amount	Derived using converter TO_DECIMAL("NetAmount ",15,2)																						
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SalesDocument	Order_ID	Name Change																																							
SalesDocumentDate	Order_Date	Name Change																																							
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OrderQuantity	Quantity	Name Change																																							
NetAmount	Net_Amount	Derived using converter TO_DECIMAL("NetAmount ",15,2)																																							
<p>To add a column, click on + icon and then select Add Column</p>																																									
<p>Select the fields as shown in the table above.</p>	 <table border="1"> <thead> <tr> <th data-bbox="523 1305 556 1315">sales</th><th data-bbox="523 1326 1465 1336">Select Columns</th></tr> </thead> <tbody> <tr> <td data-bbox="523 1347 589 1358">Selected: 2</td><td data-bbox="523 1368 1465 1379"></td></tr> <tr> <td data-bbox="523 1389 556 1400"><input type="checkbox"/></td><td data-bbox="523 1389 1465 1400">Name</td><td data-bbox="1192 1389 1237 1400">Data Type</td></tr> <tr> <td data-bbox="523 1410 556 1421"><input checked="" type="checkbox"/></td><td data-bbox="523 1410 1465 1421">AA SalesDocument</td><td data-bbox="1192 1410 1237 1421">string(10)</td></tr> <tr> <td data-bbox="523 1431 556 1442"><input type="checkbox"/></td><td data-bbox="523 1431 1465 1442">AA SalesDocumentItem</td><td data-bbox="1192 1431 1237 1442">string(6)</td></tr> <tr> <td data-bbox="523 1453 556 1463"><input type="checkbox"/></td><td data-bbox="523 1453 1465 1463">AA SalesDocumentType</td><td data-bbox="1192 1453 1237 1463">string(4)</td></tr> <tr> <td data-bbox="523 1474 556 1484"><input type="checkbox"/></td><td data-bbox="523 1474 1465 1484">AA SalesDocumentItemCategory</td><td data-bbox="1192 1474 1237 1484">string(4)</td></tr> <tr> <td data-bbox="523 1495 556 1505"><input type="checkbox"/></td><td data-bbox="523 1495 1465 1505">AA SalesOrganization</td><td data-bbox="1192 1495 1237 1505">string(4)</td></tr> <tr> <td data-bbox="523 1516 556 1526"><input type="checkbox"/></td><td data-bbox="523 1516 1465 1526">AA SalesGroup</td><td data-bbox="1192 1516 1237 1526">string(3)</td></tr> <tr> <td data-bbox="523 1537 556 1548"><input type="checkbox"/></td><td data-bbox="523 1537 1465 1548">AA SalesOffice</td><td data-bbox="1192 1537 1237 1548">string(4)</td></tr> <tr> <td data-bbox="523 1558 556 1569"><input checked="" type="checkbox"/></td><td data-bbox="523 1558 1465 1569">AA SalesDocumentDate</td><td data-bbox="1192 1558 1237 1569">date</td></tr> <tr> <td data-bbox="523 1579 556 1590"><input type="checkbox"/></td><td data-bbox="523 1579 1465 1590">AA SalesDistrict</td><td data-bbox="1192 1579 1237 1590">string(6)</td></tr> <tr> <td data-bbox="523 1600 556 1611"><input type="checkbox"/></td><td data-bbox="523 1600 1465 1611">AA SalesDocumentRjcnReason</td><td data-bbox="1192 1600 1237 1611">string(2)</td></tr> <tr> <td data-bbox="523 1622 556 1632"><input type="checkbox"/></td><td data-bbox="523 1622 1465 1632">AA SalesOrganizationCurrency</td><td data-bbox="1192 1622 1237 1632">string(5)</td></tr> </tbody> </table>	sales	Select Columns	Selected: 2		<input type="checkbox"/>	Name	Data Type	<input checked="" type="checkbox"/>	AA SalesDocument	string(10)	<input type="checkbox"/>	AA SalesDocumentItem	string(6)	<input type="checkbox"/>	AA SalesDocumentType	string(4)	<input type="checkbox"/>	AA SalesDocumentItemCategory	string(4)	<input type="checkbox"/>	AA SalesOrganization	string(4)	<input type="checkbox"/>	AA SalesGroup	string(3)	<input type="checkbox"/>	AA SalesOffice	string(4)	<input checked="" type="checkbox"/>	AA SalesDocumentDate	date	<input type="checkbox"/>	AA SalesDistrict	string(6)	<input type="checkbox"/>	AA SalesDocumentRjcnReason	string(2)	<input type="checkbox"/>	AA SalesOrganizationCurrency	string(5)
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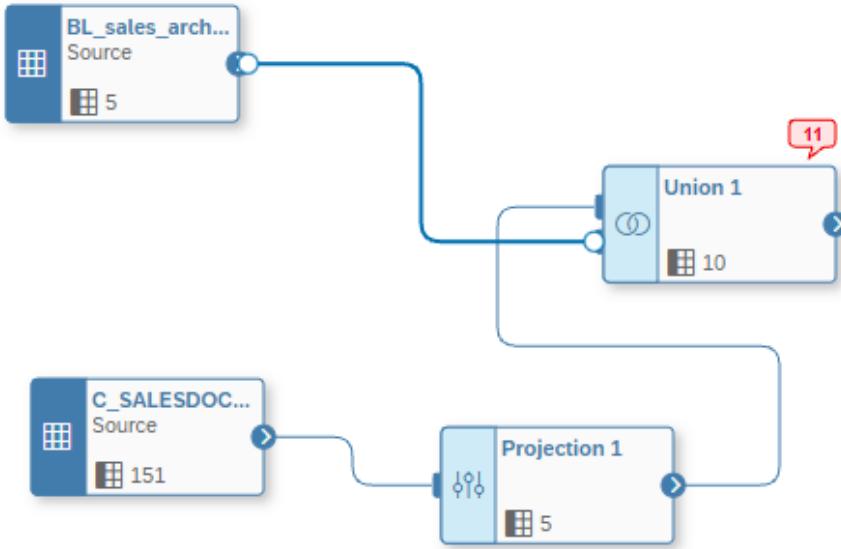
Explanation	Screenshot
Repeat for OrderQuantity.	
Add a Calculated column for Book ID.	 <p>The screenshot shows the 'Properties' dialog for a calculated column. At the top right, there are icons for refresh, close, and minimize. Below them, a shield icon with '2' and a grid icon with '5' are visible. The 'General' section is expanded, showing the 'Label' field containing 'Projection 1'. The 'Columns' section is expanded, showing 5 columns. A button labeled 'Select All' with a plus sign is followed by a dropdown arrow and a trash can icon. Below this is a search bar labeled 'Search Columns'. A callout box points to the 'Add Calculated Column' button, which is highlighted with a yellow border.</p>
Enter the Properties as shown. Repeat the same procedure for adding the calculated column Net_Amount.	 <p>The screenshot shows the 'Properties' dialog for a calculated column named 'Book_ID'. The 'Name' field is set to 'Book_ID'. The 'Data Type' is 'string'. The 'Length' is set to 39. In the 'Expression' field, the value 'SUBSTRING("Product",2)' is entered. A 'Validate' button is located to the right of the expression field.</p>
Click on the three dots icon available for each column.	 <p>The screenshot shows the properties dialog for a SalesDocument. At the bottom right, there is a small icon consisting of three dots arranged in a triangle, enclosed in a yellow-bordered box.</p>

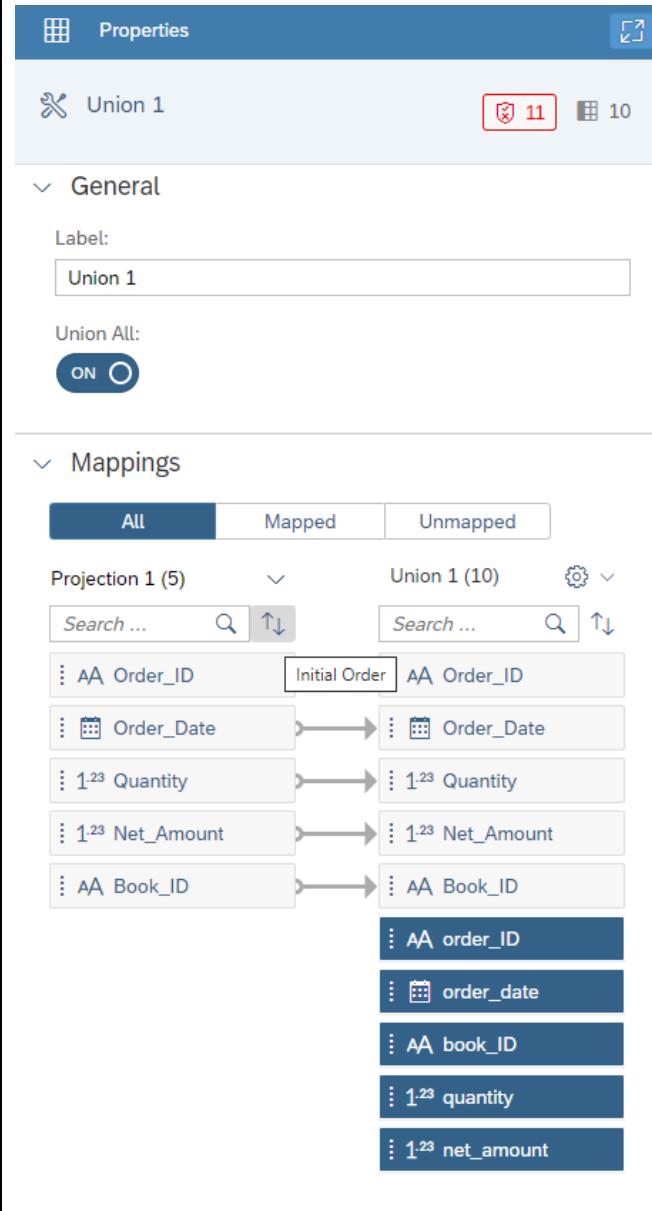
Explanation	Screenshot								
<p>Choose Change Name.</p> <p>Change the name of all the columns following what it is reported in the table below.</p> <table border="1" data-bbox="127 445 502 614"> <thead> <tr> <th data-bbox="127 445 372 487">Source</th><th data-bbox="372 445 502 487">Target</th></tr> </thead> <tbody> <tr> <td data-bbox="127 487 372 530">SalesDocument</td><td data-bbox="372 487 502 530">Order_ID</td></tr> <tr> <td data-bbox="127 530 372 572">SalesDocumentDate</td><td data-bbox="372 530 502 572">Order_Date</td></tr> <tr> <td data-bbox="127 572 372 614">OrderQuantity</td><td data-bbox="372 572 502 614">Quantity</td></tr> </tbody> </table>	Source	Target	SalesDocument	Order_ID	SalesDocumentDate	Order_Date	OrderQuantity	Quantity	
Source	Target								
SalesDocument	Order_ID								
SalesDocumentDate	Order_Date								
OrderQuantity	Quantity								
<p>Now you should have the 5 fields as shown here.</p>									

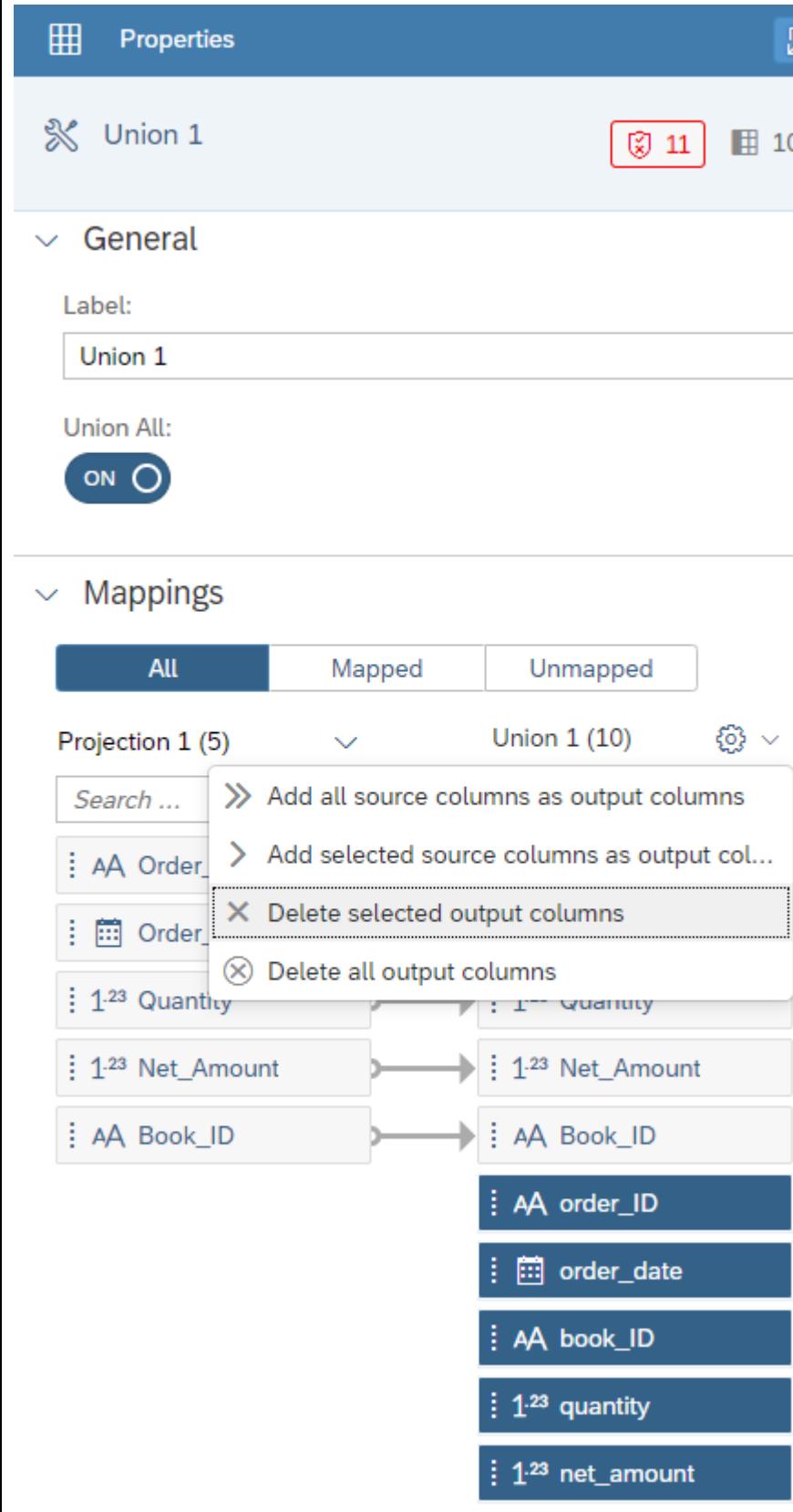
Explanation	Screenshot															
<p>Navigate to Connections → select the Amazon S3 connection.</p> <p>NB: The name of the S3 connection shown in this screenshot is just an example. Please, check the name you assigned to the connection when you went through exercise DV140_Exercise03. The convention we suggested is: S3_<USERID>.</p>																
<p>Drag the BL_sales_archived.csv file to central canvas.</p>																
<p>Change the Datatypes for the BL_Sales_Archived data set as shown here.</p>	<table border="1" data-bbox="518 1465 1188 1706"> <thead> <tr> <th data-bbox="518 1465 719 1543">Column Name</th><th data-bbox="719 1465 997 1543">Existing Data Type</th><th data-bbox="997 1465 1188 1543">New Data Type</th></tr> </thead> <tbody> <tr> <td data-bbox="518 1543 719 1586">Order_ID</td><td data-bbox="719 1543 997 1586">int32</td><td data-bbox="997 1543 1188 1586">String(10)</td></tr> <tr> <td data-bbox="518 1586 719 1628">Book_ID</td><td data-bbox="719 1586 997 1628">int32</td><td data-bbox="997 1586 1188 1628">String(39)</td></tr> <tr> <td data-bbox="518 1628 719 1670">Quantity</td><td data-bbox="719 1628 997 1670">int32</td><td data-bbox="997 1628 1188 1670">Decimal(15,3)</td></tr> <tr> <td data-bbox="518 1670 719 1712">Net_Amount</td><td data-bbox="719 1670 997 1712">int32</td><td data-bbox="997 1670 1188 1712">Decimal(15,2)</td></tr> </tbody> </table>	Column Name	Existing Data Type	New Data Type	Order_ID	int32	String(10)	Book_ID	int32	String(39)	Quantity	int32	Decimal(15,3)	Net_Amount	int32	Decimal(15,2)
Column Name	Existing Data Type	New Data Type														
Order_ID	int32	String(10)														
Book_ID	int32	String(39)														
Quantity	int32	Decimal(15,3)														
Net_Amount	int32	Decimal(15,2)														

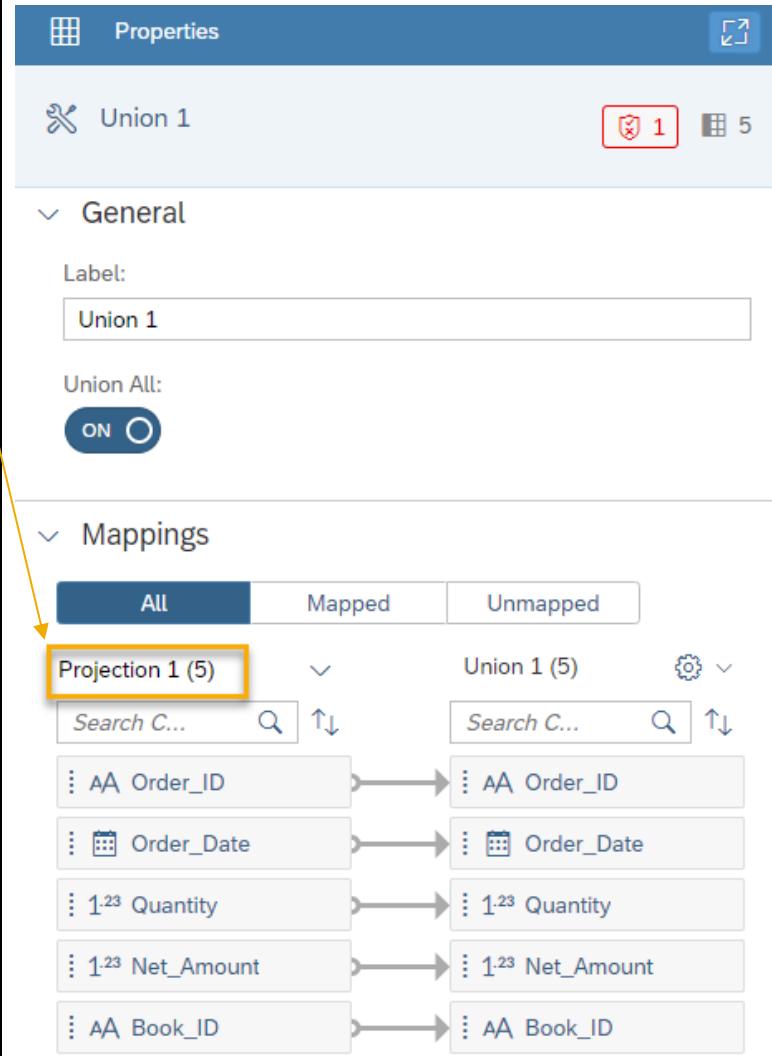
Explanation	Screenshot
<p>Click on the column and select the icon as shown below to edit the field properties.</p> 	 <p>The screenshot shows the SAP Fiori Properties screen for a CSV file named 'BL_sales_archived.csv'. Under the 'General' section, the 'Label' is set to 'BL_sales_archived.csv', 'Connection' is 'DEV_Books', and 'Qualified Name' is '/BL_sales_archived.csv'. In the 'CSV Properties' section, there is a 'Modify' link. The 'Columns (5)' section contains a search bar and two entries: 'AA_order_ID' and 'order_date'. The 'Edit Column' button for 'order_date' is highlighted with a yellow box.</p>
<p>Now we need to merge the data coming from S4HANA Cloud and S3. To do that, navigate to Operators section and choose the UNION operator.</p>	 <p>The screenshot shows the SAP Fiori Operators section. It displays several operators: 'Operators' (blue square), 'UNION' (two overlapping circles, highlighted with a yellow box), 'INTERSECT' (two overlapping circles), 'EXCEPT' (minus sign), 'SUM' (Sigma symbol), 'AVERAGE' (mean symbol), and 'TOTAL' (grid with plus sign).</p>

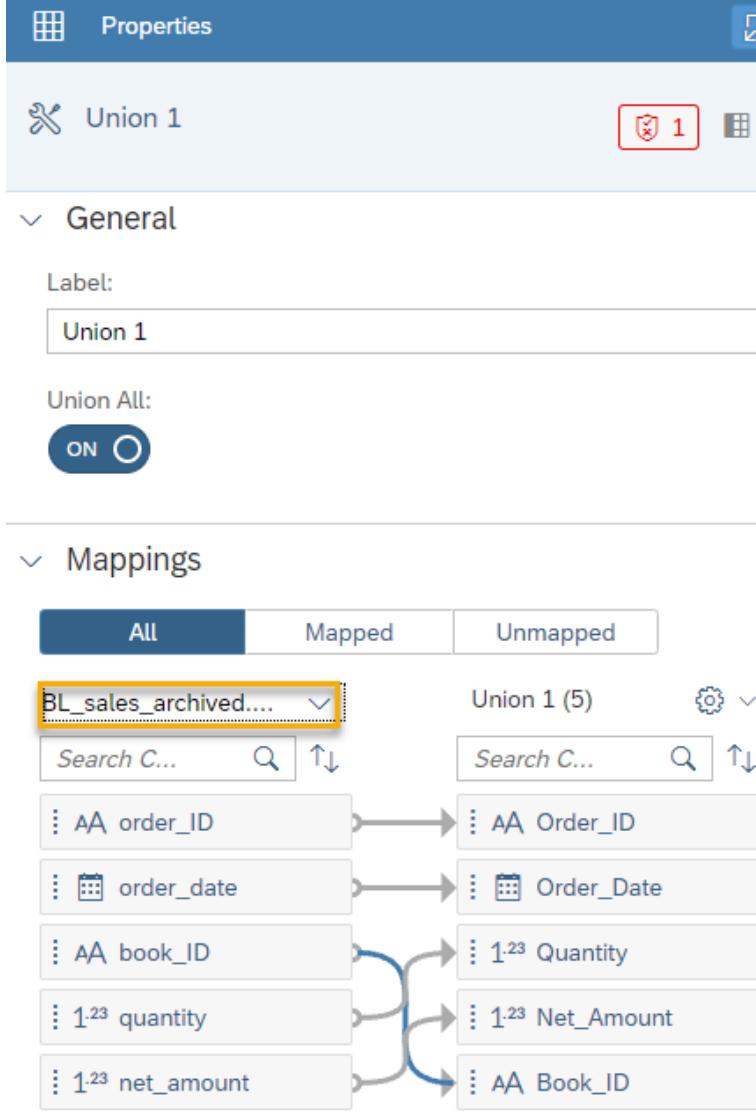
Explanation	Screenshot
<p>Drag the operator to the central canvas.</p>	
<p>Click on Projection 1 and select the arrow to drag to the Union operator.</p>	

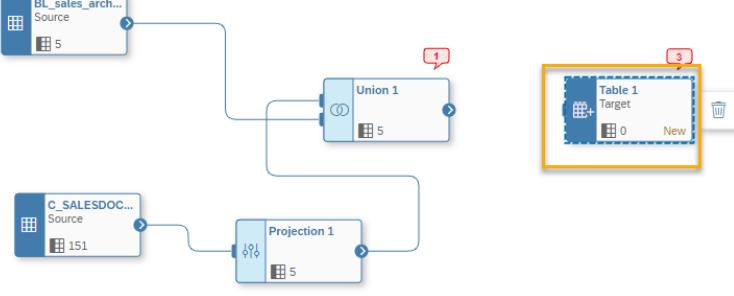
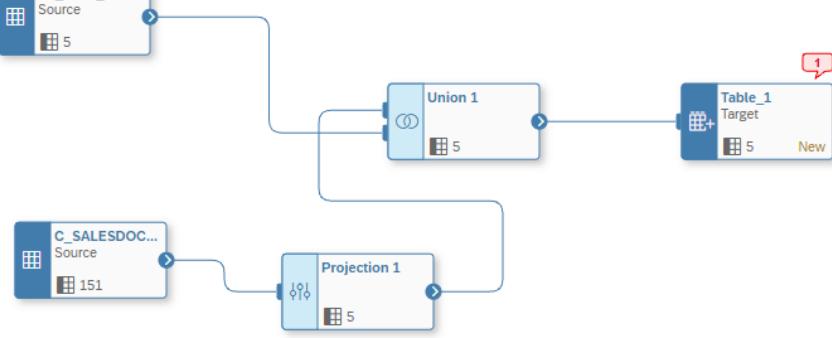
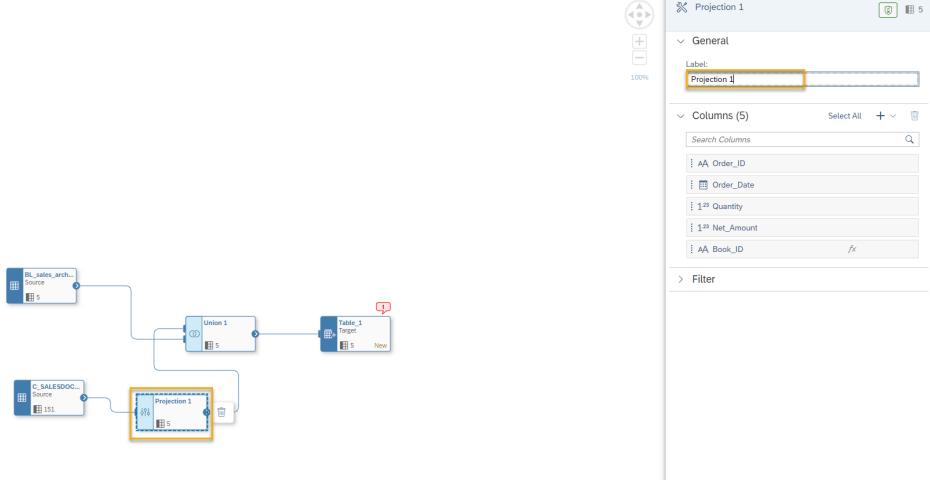
Explanation	Screenshot
<p>Repeat the operation for the archived dataset.</p>	 <pre> graph TD S1[Source BL_sales_arch... 5] --> U1[Union 1 10] S2[Source C_SALESDOC... 151] --> P1[Projection 1 5] U1 --> E1(()) P1 --> E2(()) </pre>

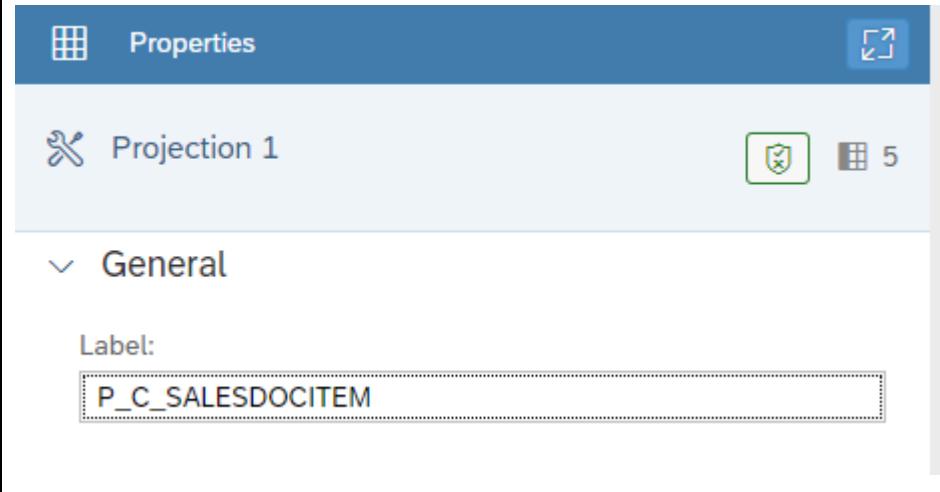
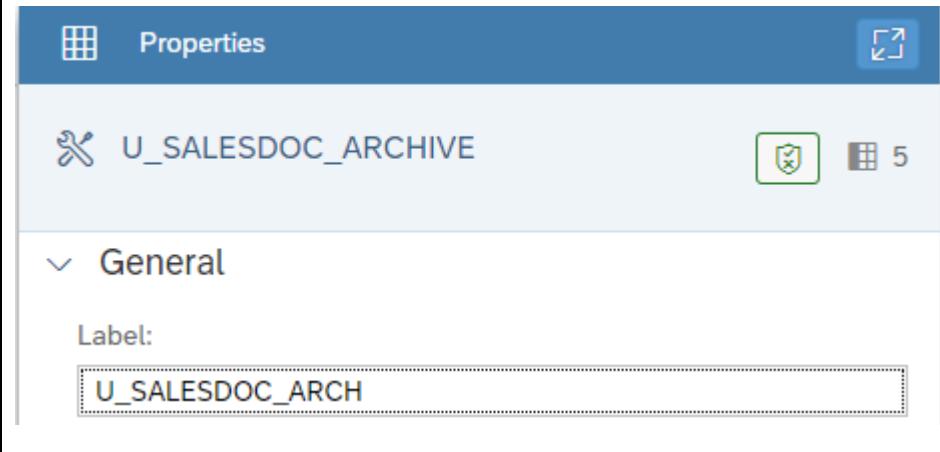
Explanation	Screenshot
<p>By connecting the projection and archived dataset, the union inherits the columns coming from both. The duplicated columns need to be removed. We keep the columns coming from projection.</p> <p>Select the unneeded columns on the right as shown.</p>	 <p>The screenshot shows the 'Properties' and 'Mappings' sections of the Dataedo interface for a 'Union 1' dataset.</p> <p>Properties:</p> <ul style="list-style-type: none"> Label: Union 1 Union All: ON (selected) Columns: 11 (highlighted in red) Rows: 10 <p>Mappings:</p> <p>Projection 1 (5) is mapped to Union 1 (10). The mappings are as follows:</p> <ul style="list-style-type: none"> AA Order_ID → Initial Order AA Order_ID Order_Date → Order_Date 1²³ Quantity → 1²³ Quantity 1²³ Net_Amount → 1²³ Net_Amount AA Book_ID → AA Book_ID AA order_ID (unmapped) order_date (unmapped) book_ID (unmapped) 1²³ quantity (unmapped) 1²³ net_amount (unmapped)

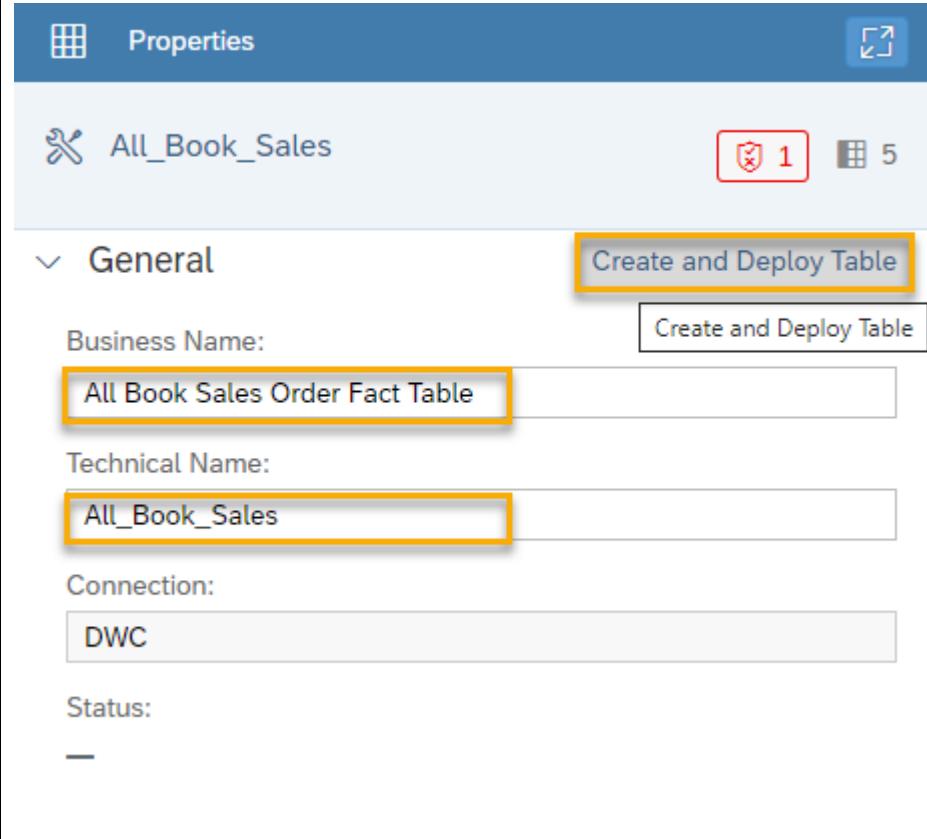
Explanation	Screenshot
<p>Delete the columns as shown using the option “Delete selected output columns”.</p>	 <p>The screenshot shows the Power BI Properties pane for a 'Union 1' object. At the top, there are icons for a key (11), a shield (11), and a grid (10). Below this, the 'General' section contains a 'Label' field set to 'Union 1' and a 'Union All' toggle switch set to 'ON'. The 'Mappings' section has tabs for 'All', 'Mapped', and 'Unmapped', with 'All' selected. In the 'Projection 1 (5)' section, a context menu is open, showing options: 'Add all source columns as output columns', 'Add selected source columns as output col...', 'Delete selected output columns' (which is highlighted with a dashed border), and 'Delete all output columns'. Below the menu, there are two mappings: '1..23 Quantity' mapped to '1..23 quantity' and 'AA Book_ID' mapped to 'AA Book_ID'. A list of available columns is shown below the mappings, including 'AA order_ID', 'AA order_date', 'AA book_ID', '1..23 quantity', and '1..23 net_amount'.</p>

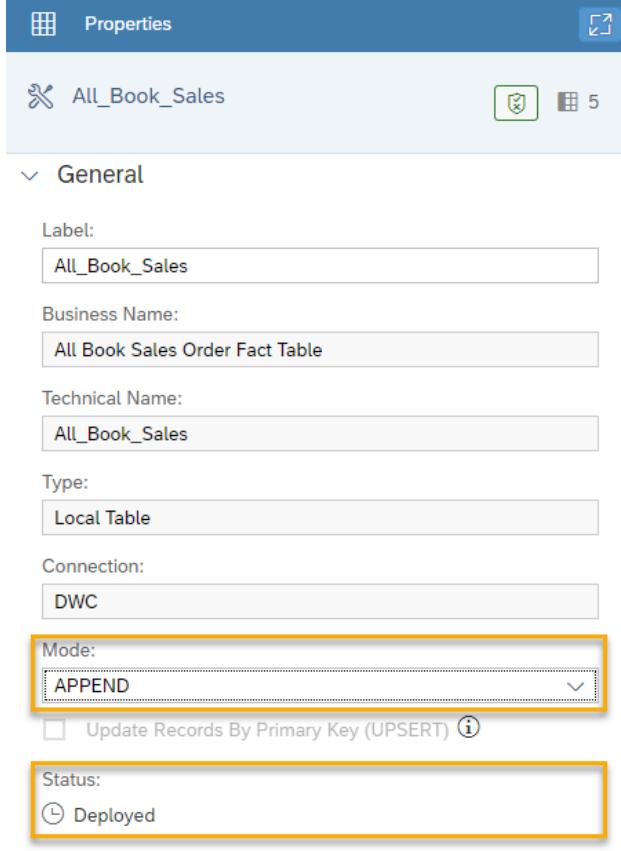
Explanation	Screenshot
<p>The output should be as seen here.</p> <p>This is the mapping for the projection fields.</p> <p>By switching to BL_sales_archived.csv one can also configure the mapping for the archived dataset.</p>	 <p>The screenshot shows the 'Properties' dialog for 'Union 1'. Under the 'General' section, the 'Label' is set to 'Union 1'. The 'Union All' switch is set to 'ON'. In the 'Mappings' section, the 'All' tab is selected, showing a list of 'Projection 1 (5)' which is highlighted with a yellow box. Below this, there are five mapping pairs between 'Projection 1' fields and 'Union 1' fields:</p> <ul style="list-style-type: none"> AA Order_ID → AA Order_ID Order_Date → Order_Date 1²³ Quantity → 1²³ Quantity 1²³ Net_Amount → 1²³ Net_Amount AA Book_ID → AA Book_ID

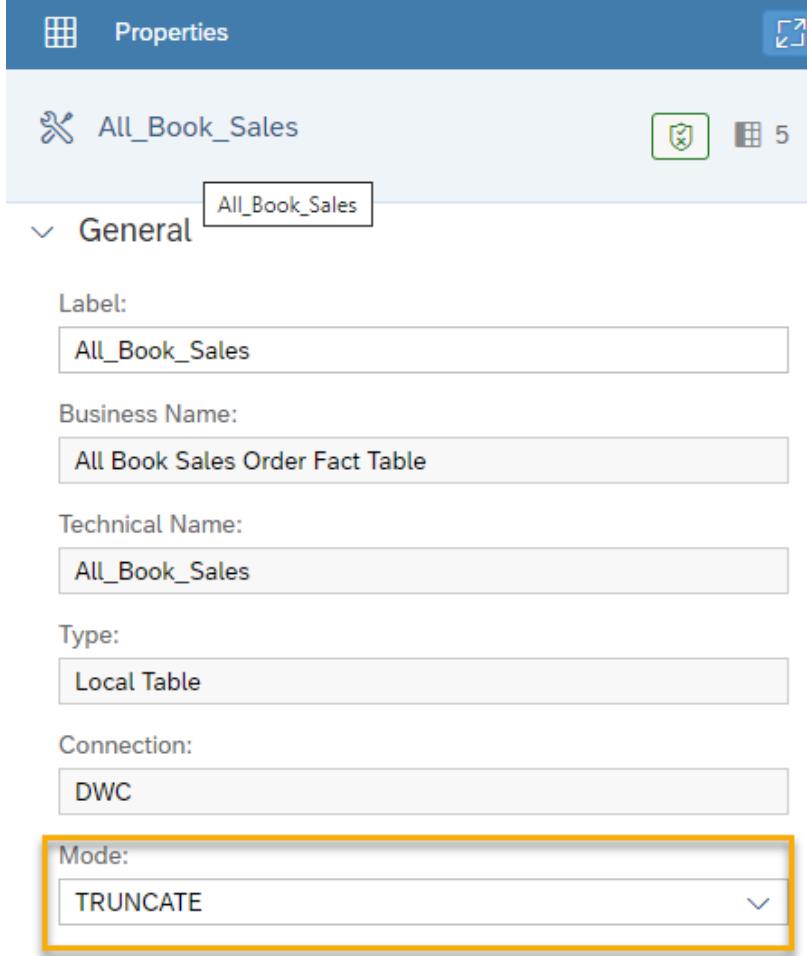
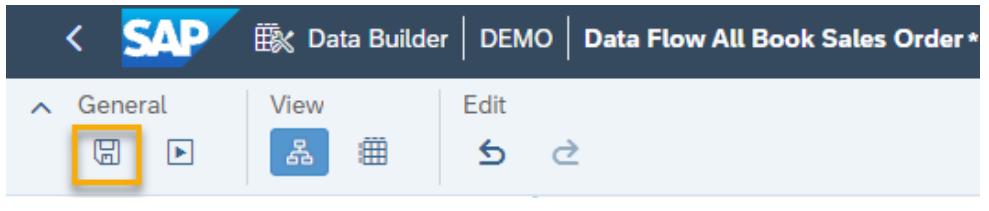
Explanation	Screenshot
	 <p>The screenshot shows the 'Properties' window for 'Union 1'. Under the 'General' tab, the 'Label' is set to 'Union 1'. The 'Union All' option is turned 'ON'. In the 'Mappings' section, under the 'All' tab, there are five mappings defined:</p> <ul style="list-style-type: none"> Source: BL_sales_archived... (order_ID) → Target: Union 1 (5) (Order_ID) Source: BL_sales_archived... (order_date) → Target: Union 1 (5) (Order_Date) Source: BL_sales_archived... (book_ID) → Target: Union 1 (5) (Book_ID) Source: BL_sales_archived... (quantity) → Target: Union 1 (5) (Quantity) Source: BL_sales_archived... (net_amount) → Target: Union 1 (5) (Net_Amount)
Since we need to define a target table, navigate to the Operator section and select Add Table.	 <p>The screenshot shows the 'Operators' toolbar. The 'Add Table' icon (represented by a grid with a plus sign) is highlighted with a yellow box.</p>

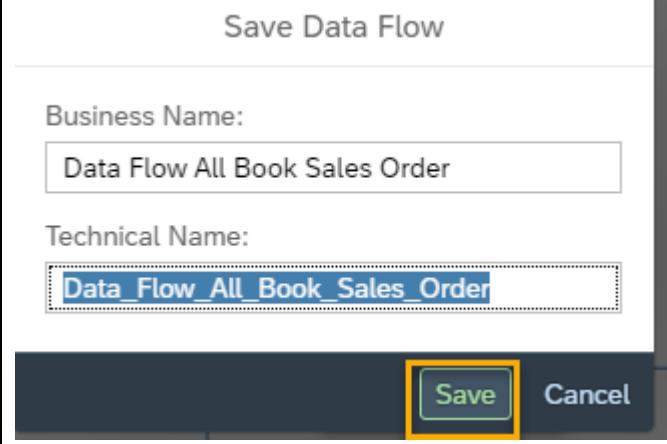
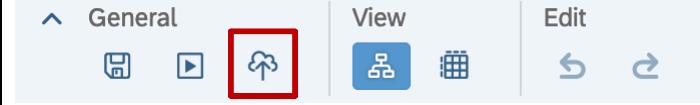
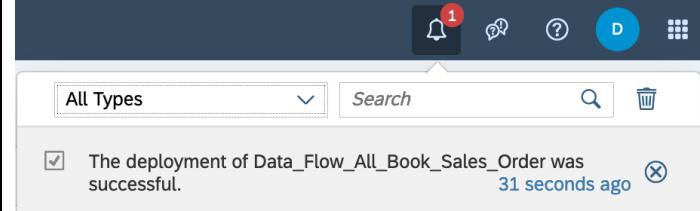
Explanation	Screenshot
Drag it to the central canvas.	
Connect the Union 1 to the Table.	
Rename the Projection.	 <p>Projection 1 properties:</p> <ul style="list-style-type: none"> General: Label: Projection 3 Columns (5): <ul style="list-style-type: none"> AA.Order_ID Order_Date Quantity Net_Amount AA.Book_ID

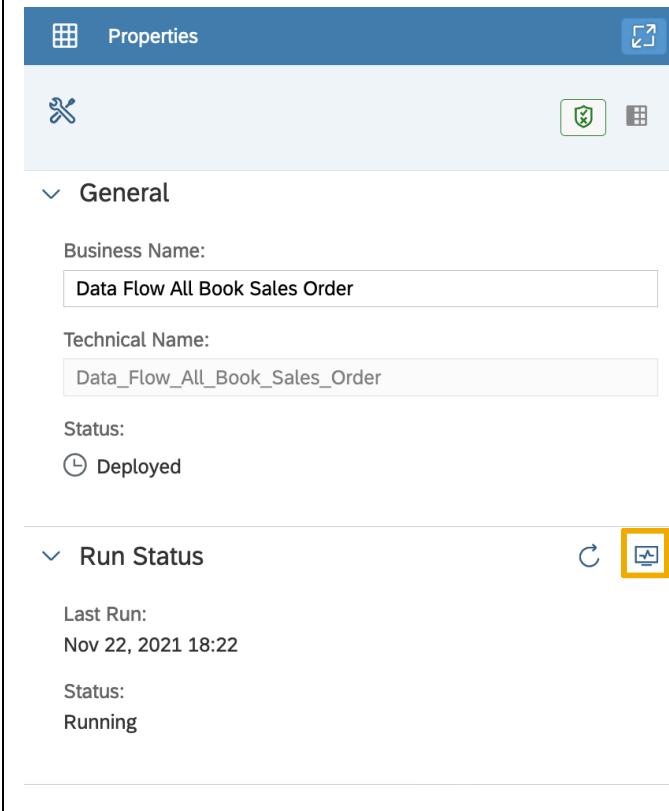
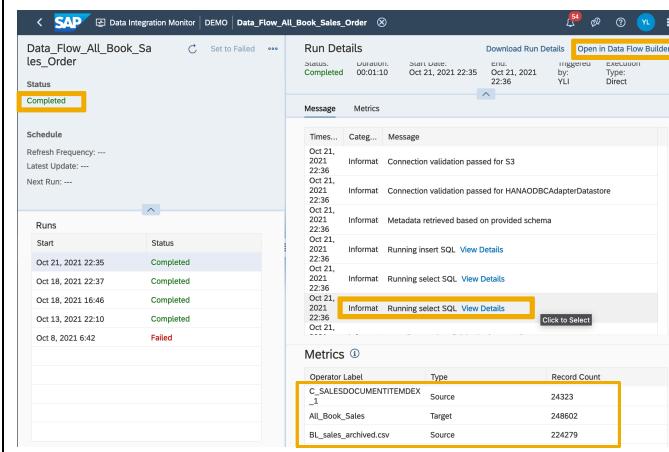
Explanation	Screenshot
<p>The new name to assign is: P_CSALESDOCITEM.</p>	 <p>Properties</p> <p>Projection 1</p> <p>General</p> <p>Label: P_C_SALESDOCITEM</p>
<p>Also rename the Union operator with the proposed name here.</p>	 <p>Properties</p> <p>U_SALESDOC_ARCHIVE</p> <p>General</p> <p>Label: U_SALESDOC_ARCH</p>

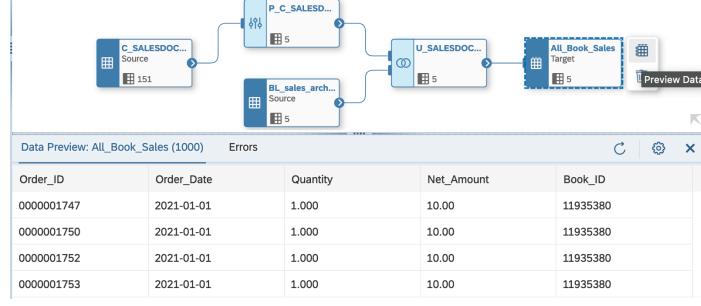
Explanation	Screenshot
<p>Deploy the table with:</p> <ul style="list-style-type: none"> Business Name: All Book Sales Order Fact Table Technical name: All_Book_Sales <p>Click Create and Deploy.</p>	
<p>Click the Create and Deploy button.</p>	<p>i Information</p> <p>The target table 'All_Book_Sales' will be created and deployed in your repository with all the output columns added to the target.</p> <p>Create and Deploy Close</p>

Explanation	Screenshot														
<p>Check the properties of the new table, in particular the Mode and Status.</p>	 <p>The screenshot shows the 'Properties' dialog for the 'All_Book_Sales' table. The 'Mode:' dropdown is set to 'APPEND'. The 'Status:' dropdown is set to 'Deployed'. Both the 'Mode:' and 'Status:' fields are highlighted with a yellow box.</p> <table border="1"> <tr> <td>Label:</td> <td>All_Book_Sales</td> </tr> <tr> <td>Business Name:</td> <td>All Book Sales Order Fact Table</td> </tr> <tr> <td>Technical Name:</td> <td>All_Book_Sales</td> </tr> <tr> <td>Type:</td> <td>Local Table</td> </tr> <tr> <td>Connection:</td> <td>DWC</td> </tr> <tr> <td>Mode:</td> <td>APPEND</td> </tr> <tr> <td>Status:</td> <td>Deployed</td> </tr> </table> <p>Use As:</p> <p><input type="radio"/> Source <input checked="" type="radio"/> Target</p>	Label:	All_Book_Sales	Business Name:	All Book Sales Order Fact Table	Technical Name:	All_Book_Sales	Type:	Local Table	Connection:	DWC	Mode:	APPEND	Status:	Deployed
Label:	All_Book_Sales														
Business Name:	All Book Sales Order Fact Table														
Technical Name:	All_Book_Sales														
Type:	Local Table														
Connection:	DWC														
Mode:	APPEND														
Status:	Deployed														

Explanation	Screenshot
<p>Change the mode to TRUNCATE, which will truncate the existing records in the table before writing new records.</p>	 <p>The screenshot shows the SAP Data Builder Properties dialog for the 'All_Book_Sales' table. The 'Mode' dropdown is highlighted with a yellow box and contains the value 'TRUNCATE'. Other fields shown include Label (All_Book_Sales), Business Name (All Book Sales Order Fact Table), Technical Name (All_Book_Sales), Type (Local Table), Connection (DWC), and Mode (TRUNCATE).</p>
<p>Click Save.</p>	 <p>The screenshot shows the SAP Data Builder ribbon with the 'General' tab selected. Other tabs visible include View and Edit.</p>

Explanation	Screenshot
Provide the Business and Technical Name of the Data Flow and Click Save.	 <p>Save Data Flow</p> <p>Business Name: Data Flow All Book Sales Order</p> <p>Technical Name: Data_Flow_All_Book_Sales_Order</p> <p>Save Cancel</p>
Check the Status.	 <p>Data Flow saved successfully.</p>
Deploy the Data Flow.	 <p>General View Edit</p> <p>Save Deploy (highlighted)</p>
Check the status of the deployment.	 <p>All Types Search</p> <p>The deployment of Data_Flow_All_Book_Sales_Order was successful. 31 seconds ago</p>
Click on the Play button Icon to execute the Data flow.	 <p>General View Edit</p> <p>Save Deploy (highlighted)</p> <p>Play (highlighted)</p>

Explanation	Screenshot												
<p>The status becomes Running. Click the  icon to open Data Flow Monitor about the execution details.</p>	 <p>Properties</p> <p>General</p> <p>Business Name: Data Flow All Book Sales Order</p> <p>Technical Name: Data_Flow_All_Book_Sales_Order</p> <p>Status: Deployed</p> <p>Run Status</p> <p>Last Run: Nov 22, 2021 18:22</p> <p>Status: Running</p>												
<p>In the Data Flow Monitor, you see the details about historic running. Click the Refresh button to see detailed info about the new execution you started.</p> <p>Once the status become completed, the record count of the sources and target table All_Book_Sales will be listed on Metrics.</p> <p>Click Open in Data Flow Builder at the top right, where you can preview the data in the target table All_Books_Sales.</p>	 <table border="1"> <thead> <tr> <th>Operator Label</th> <th>Type</th> <th>Record Count</th> </tr> </thead> <tbody> <tr> <td>C_SALESDOCUMENTITEMDEX</td> <td>Source</td> <td>24323</td> </tr> <tr> <td>All_Book_Sales</td> <td>Target</td> <td>249602</td> </tr> <tr> <td>BL_sales_archived.csv</td> <td>Source</td> <td>224279</td> </tr> </tbody> </table>	Operator Label	Type	Record Count	C_SALESDOCUMENTITEMDEX	Source	24323	All_Book_Sales	Target	249602	BL_sales_archived.csv	Source	224279
Operator Label	Type	Record Count											
C_SALESDOCUMENTITEMDEX	Source	24323											
All_Book_Sales	Target	249602											
BL_sales_archived.csv	Source	224279											

Explanation	Screenshot																									
<p>Select All_Book_Sales table and click Preview Data. Then it shows 1000 records in the Data Preview.</p>	 <table border="1" data-bbox="514 390 1215 559"> <thead> <tr> <th>Order_ID</th> <th>Order_Date</th> <th>Quantity</th> <th>Net_Amount</th> <th>Book_ID</th> </tr> </thead> <tbody> <tr> <td>0000001747</td> <td>2021-01-01</td> <td>1.000</td> <td>10.00</td> <td>11935380</td> </tr> <tr> <td>0000001750</td> <td>2021-01-01</td> <td>1.000</td> <td>10.00</td> <td>11935380</td> </tr> <tr> <td>0000001752</td> <td>2021-01-01</td> <td>1.000</td> <td>10.00</td> <td>11935380</td> </tr> <tr> <td>0000001753</td> <td>2021-01-01</td> <td>1.000</td> <td>10.00</td> <td>11935380</td> </tr> </tbody> </table>	Order_ID	Order_Date	Quantity	Net_Amount	Book_ID	0000001747	2021-01-01	1.000	10.00	11935380	0000001750	2021-01-01	1.000	10.00	11935380	0000001752	2021-01-01	1.000	10.00	11935380	0000001753	2021-01-01	1.000	10.00	11935380
Order_ID	Order_Date	Quantity	Net_Amount	Book_ID																						
0000001747	2021-01-01	1.000	10.00	11935380																						
0000001750	2021-01-01	1.000	10.00	11935380																						
0000001752	2021-01-01	1.000	10.00	11935380																						
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