

PUBLIC

Common Tools for SQL data warehousing and SAP Data Warehouse Cloud

ANA369

Exercises / Solutions
Klaus-Peter Sauer, Axel Meier / SAP SE

TABLE OF CONTENTS

OVERVIEW OF THE ANA369 WORKSHOP SCENARIO	3
SELECT YOUR GROUP ID NUMBER	5
SYSTEM ACCESS INFORMATION	6
LOGON TO DATA WAREHOUSE CLOUD AND SPACE CONFIGURATION.....	7
LOGON TO SAP CLOUD PLATFORM WEB IDE AND CONFIGURATION	17
CREATE A MODEL AND A DATABASE USER IN SAP DATA WAREHOUSE CLOUD.....	26
CREATE THE USER PROVIDED SERVICE IN SAP CLOUD PLATFORM.....	31
CLONE, CONFIGURE AND BUILD THE WEB IDE PROJECT.....	34
ASSIGN HDI CONTAINER TO YOUR SPACE AND EXTEND YOUR MODEL	39
LEARN WHAT DESIGN-TIME ARTIFACTS ARE IN YOUR PROJECT	44
OPTIONAL – BUILD A DASHBOARD USING THE INTEGRATED SAP ANALYTICS CLOUD SYSTEM.....	47

OVERVIEW OF THE ANA369 WORKSHOP SCENARIO

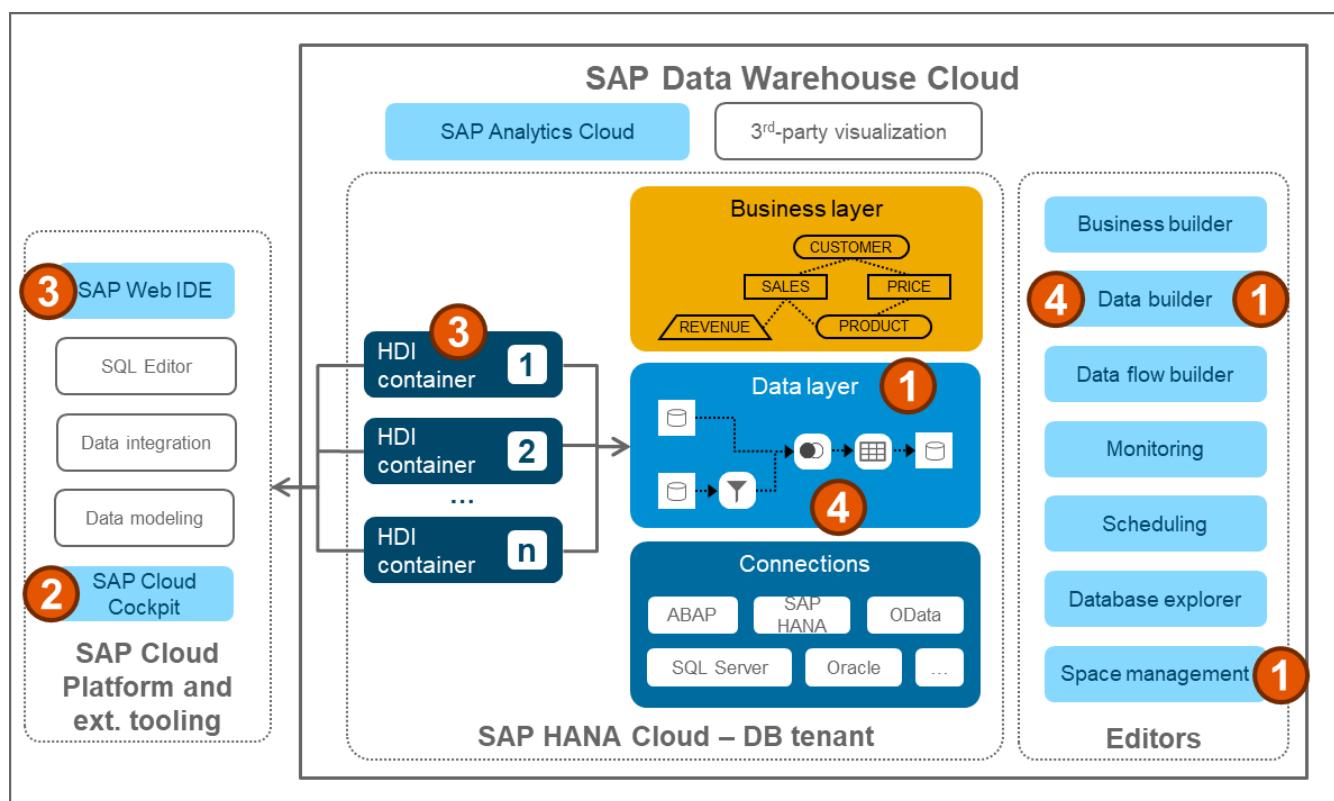
Before you start into the hands-on part of the workshop, we would like to give you an overview of the overall session scenario.

During the session you will be using three different software components:

- SAP Data Warehouse Cloud
- SAP Cloud Platform Cockpit
- SAP Web IDE

The goal is that you are able to deploy an SAP HANA Deployment Infrastructure (HDI) container from SAP Web IDE in the same SAP HANA database which is also used by your SAP Data Warehouse Cloud system. As a preparation a mapping of your SAP Data Warehouse Cloud tenant with your SAP Cloud Foundry account is required. We have already prepared this step for you in the session.

In the SAP Web IDE you can model SAP HANA artifacts, reuse existing models from SAP Data Warehouse Cloud for these models and make these artifacts available for further use in SAP Data Warehouse Cloud again. That is what we have built into the workshop exercises.



The high-level steps as illustrated in the picture above are as follows:

1. SAP Data Warehouse Cloud

- Create SPACE + database user (open SQL Schema)
- Create & expose SAP Data Warehouse Cloud model

2. SAP Cloud Platform Cockpit

- Create User-Provided Service connection from SAP Cloud Platform Cockpit to SAP Data Warehouse Cloud database tenant

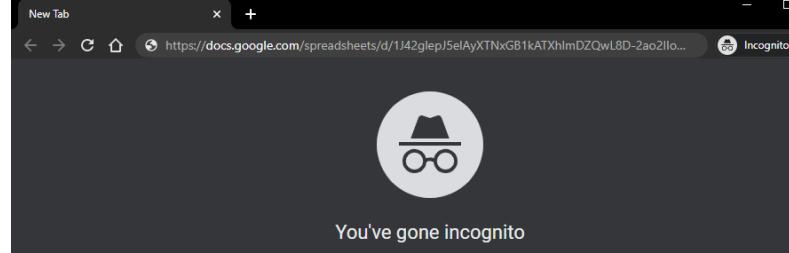
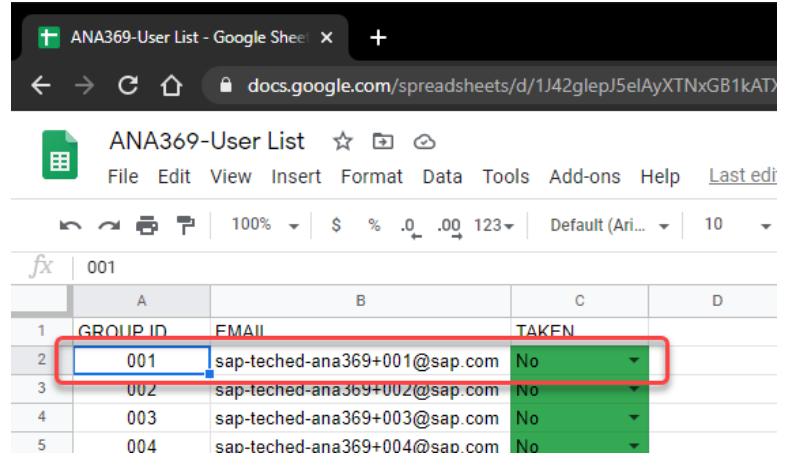
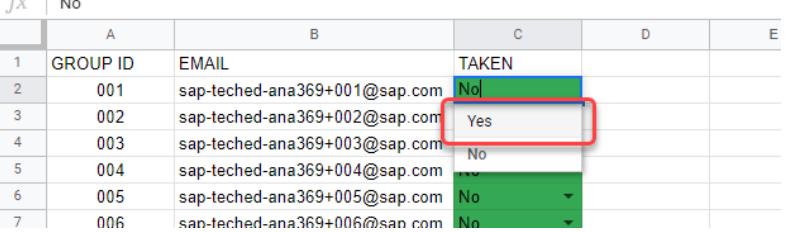
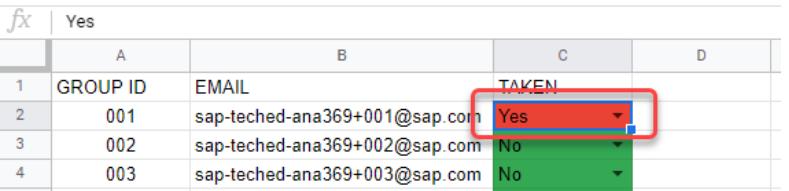
3. SAP Web IDE

- Clone GIT-Repository into SAP Web IDE project, incl. design-time artifacts for Synonyms, Calculation-View, Flowgraph, Tables, Roles referencing to SAP Data Warehouse Cloud exposed models
- Assign Account- / Space-Mapping to SAP Data Warehouse Cloud database tenant
- Build the Web IDE Project
- HDI-Container incl. database artifacts from Web IDE Project are deployed to SAP Data Warehouse Cloud database tenant, incl. Synonyms, Calculation-View, Flowgraph, Tables, Roles

4. SAP Data Warehouse Cloud

- Assign HDI-Container to SAP Data Warehouse Cloud Space
- Data-Builder to access Calculation-View from the HDI-Container
- Create SAP Data Warehouse Cloud Model and Visualization in SAP Analytics Cloud

SELECT YOUR GROUP ID NUMBER

Explanation	Screenshot																																																
<p>1. Go to your browser and follow this link to Google Sheets:</p> <p>https://docs.google.com/spreadsheets/d/1J42glepJ5elAyXTNxGB1kATXhImDZQwl8D-2ao2lloE/edit?usp=sharing</p>																																																	
<p>2. In the sheet identify the next free GROUP ID from the list A free column shows No in Column C with a green background color.</p> <p>example 001</p>	 <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GROUP ID</td> <td>EMAIL</td> <td>TAKEN</td> <td></td> </tr> <tr> <td>2</td> <td>001</td> <td>sap-teched-ana369+001@sap.com</td> <td>No</td> <td></td> </tr> <tr> <td>3</td> <td>002</td> <td>sap-teched-ana369+002@sap.com</td> <td>No</td> <td></td> </tr> <tr> <td>4</td> <td>003</td> <td>sap-teched-ana369+003@sap.com</td> <td>No</td> <td></td> </tr> <tr> <td>5</td> <td>004</td> <td>sap-teched-ana369+004@sap.com</td> <td>No</td> <td></td> </tr> </tbody> </table>		A	B	C	D	1	GROUP ID	EMAIL	TAKEN		2	001	sap-teched-ana369+001@sap.com	No		3	002	sap-teched-ana369+002@sap.com	No		4	003	sap-teched-ana369+003@sap.com	No		5	004	sap-teched-ana369+004@sap.com	No																			
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<p>3. Copy the EMAIL address and the GROUP ID to your notes and keep it safe. You will need it for the exercise.</p>																																																	
<p>4. Set the dropdown box in Column C to Yes</p>	 <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GROUP ID</td> <td>EMAIL</td> <td>TAKEN</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>001</td> <td>sap-teched-ana369+001@sap.com</td> <td>No</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>002</td> <td>sap-teched-ana369+002@sap.com</td> <td>Yes</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>003</td> <td>sap-teched-ana369+003@sap.com</td> <td>No</td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>004</td> <td>sap-teched-ana369+004@sap.com</td> <td>No</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>005</td> <td>sap-teched-ana369+005@sap.com</td> <td>No</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>006</td> <td>sap-teched-ana369+006@sap.com</td> <td>No</td> <td></td> <td></td> </tr> </tbody> </table>		A	B	C	D	E	1	GROUP ID	EMAIL	TAKEN			2	001	sap-teched-ana369+001@sap.com	No			3	002	sap-teched-ana369+002@sap.com	Yes			4	003	sap-teched-ana369+003@sap.com	No			5	004	sap-teched-ana369+004@sap.com	No			6	005	sap-teched-ana369+005@sap.com	No			7	006	sap-teched-ana369+006@sap.com	No		
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<p>5. Check the result in Column C. It must show Yes with a red background to indicate that this number is taken by you.</p>	 <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GROUP ID</td> <td>EMAIL</td> <td>TAKEN</td> <td></td> </tr> <tr> <td>2</td> <td>001</td> <td>sap-teched-ana369+001@sap.com</td> <td>Yes</td> <td></td> </tr> <tr> <td>3</td> <td>002</td> <td>sap-teched-ana369+002@sap.com</td> <td>No</td> <td></td> </tr> <tr> <td>4</td> <td>003</td> <td>sap-teched-ana369+003@sap.com</td> <td>No</td> <td></td> </tr> </tbody> </table>		A	B	C	D	1	GROUP ID	EMAIL	TAKEN		2	001	sap-teched-ana369+001@sap.com	Yes		3	002	sap-teched-ana369+002@sap.com	No		4	003	sap-teched-ana369+003@sap.com	No																								
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SYSTEM ACCESS INFORMATION

Given your selected **GROUP ID** and **EMAIL address**, you can use the following login details to get access to the systems.

The ### represents your GROUP ID. Hence, throughout the document replace the ### with your GROUP ID.

SAP Data Warehouse Cloud

URL: <https://dwc-teched2020.eu10.hcs.cloud.sap>

User: sap-teched-ana369+###@sap.com

PW: Welcome2020!

SAP Cloud Platform

URL: <https://cockpit.eu10.hana.ondemand.com/trial/#/home/trial>

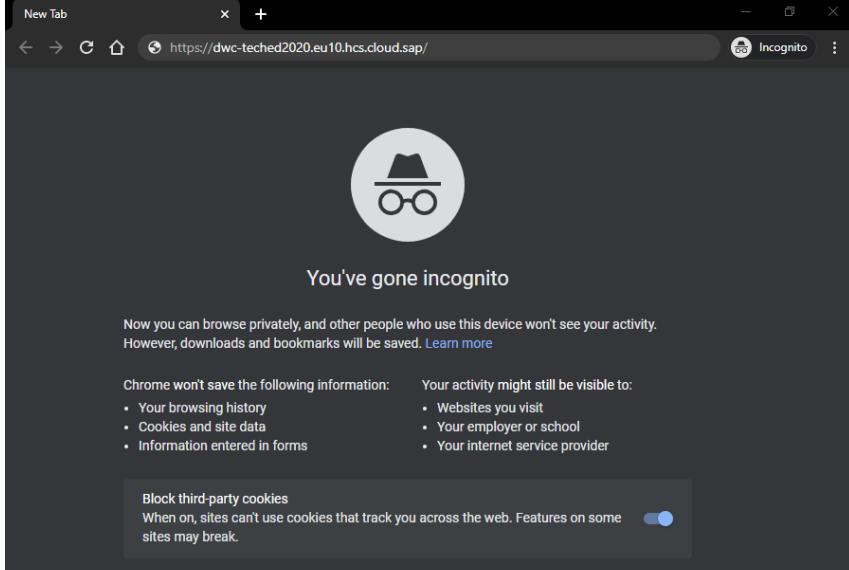
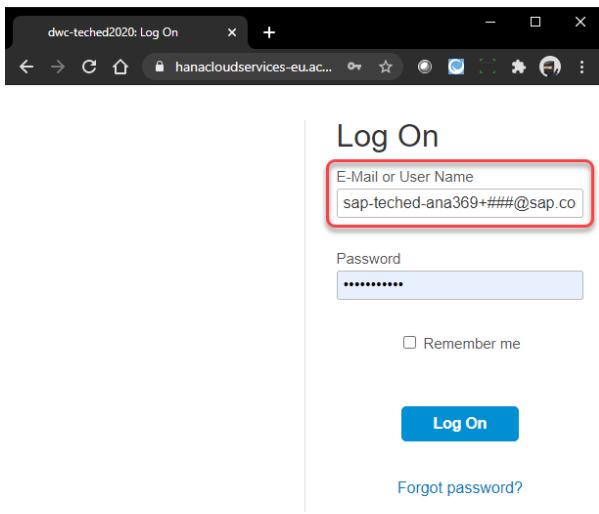
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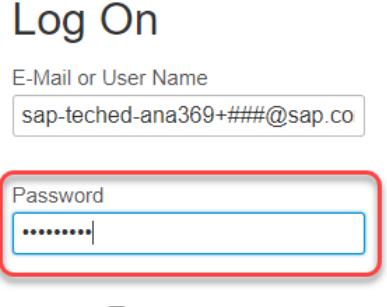
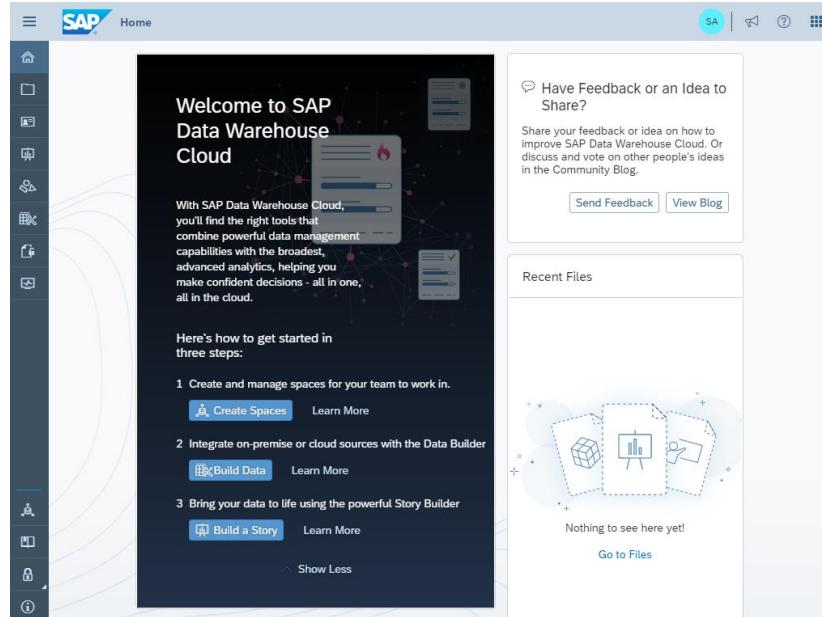
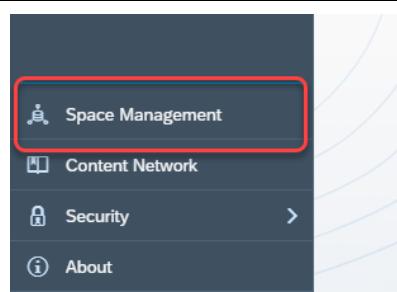
PW: Welcome2020!

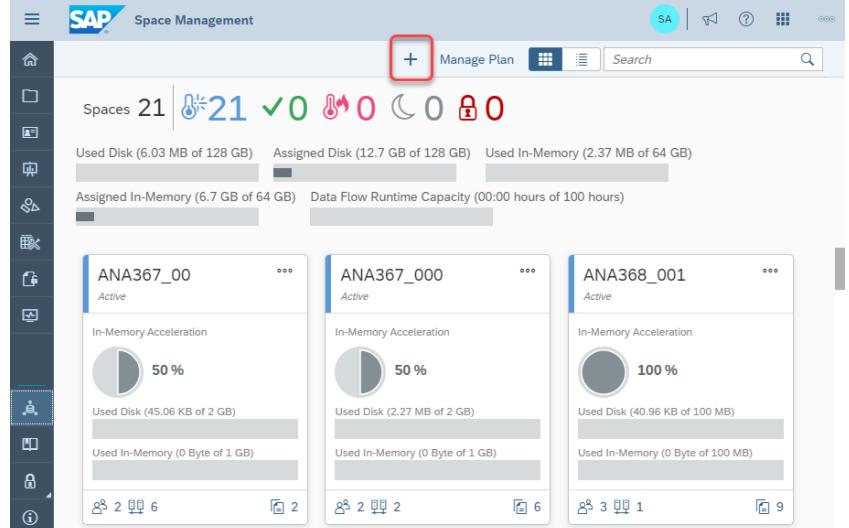
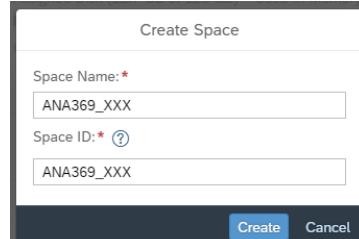
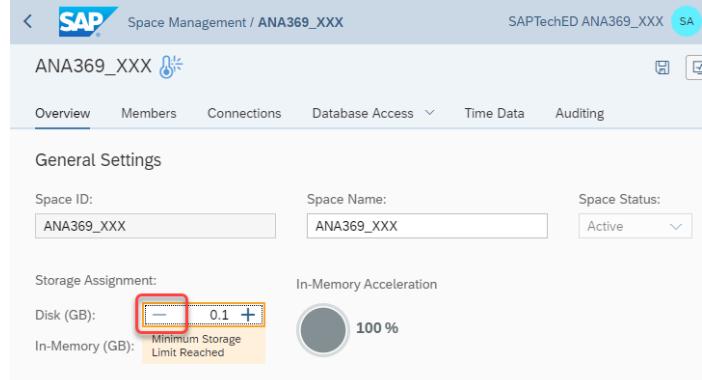
PLEASE DO NOT CHANGE THE PASSWORD!

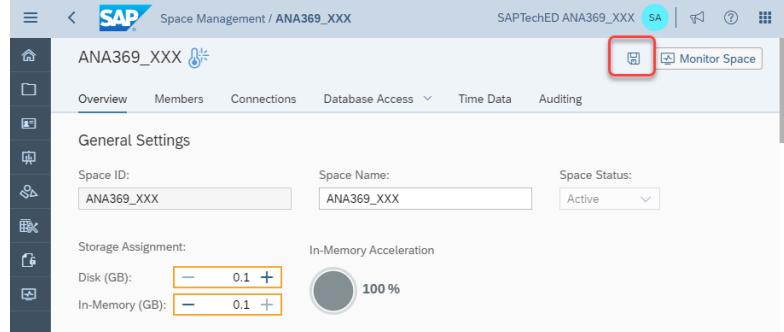
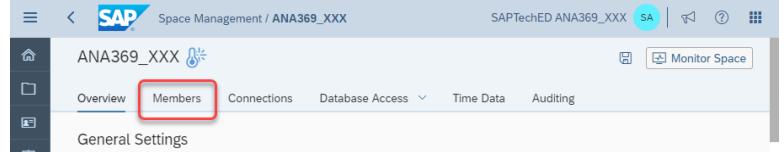
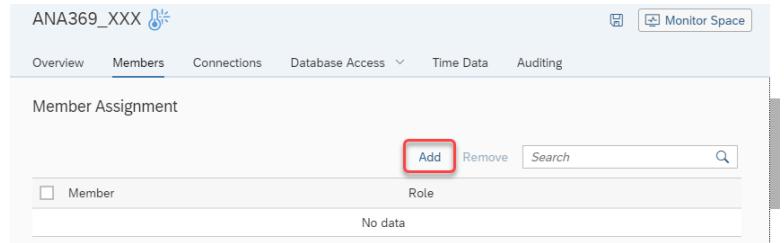
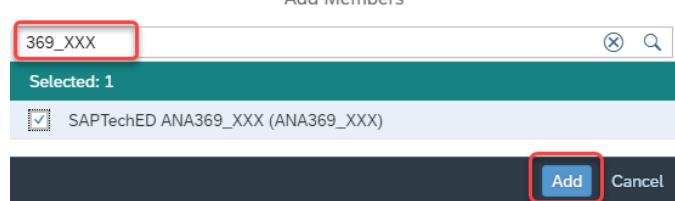
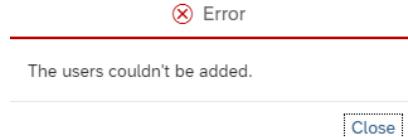
Other people might want to use the same account once you are done with the exercise.

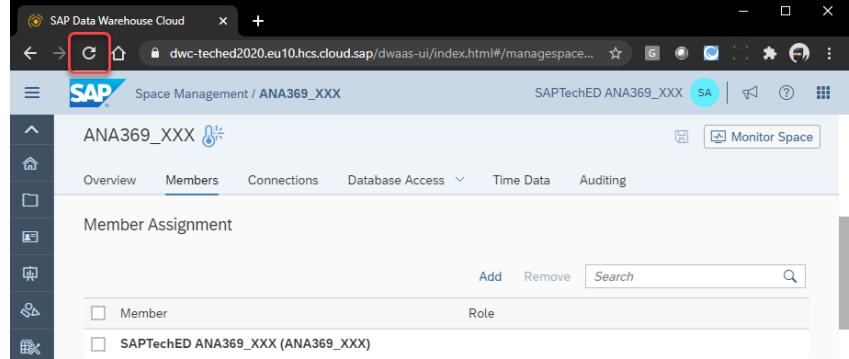
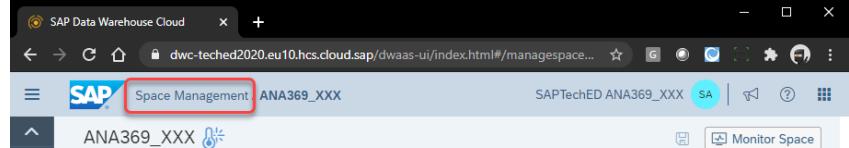
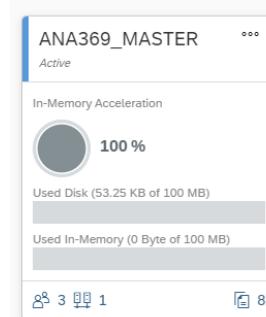
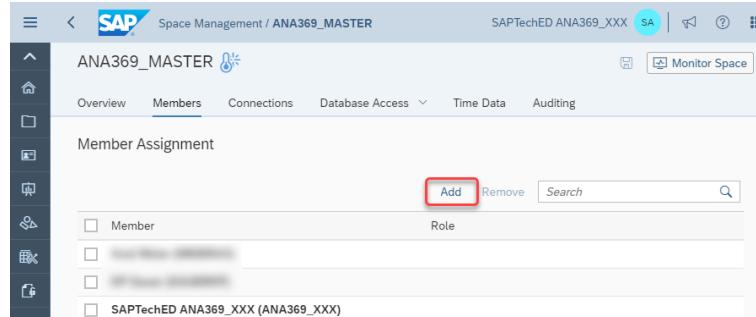
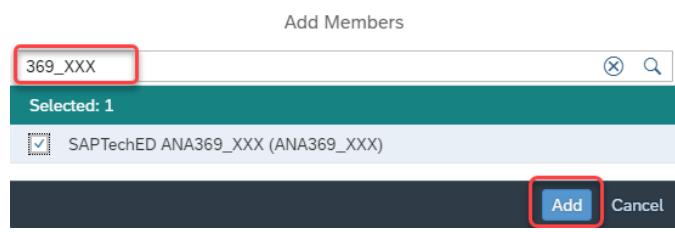
LOGON TO DATA WAREHOUSE CLOUD AND SPACE CONFIGURATION

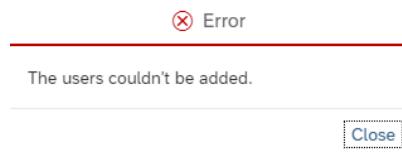
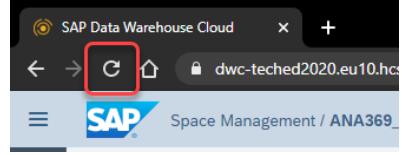
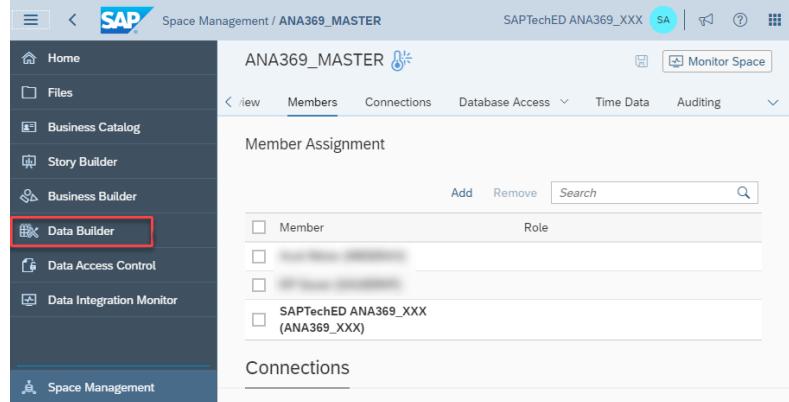
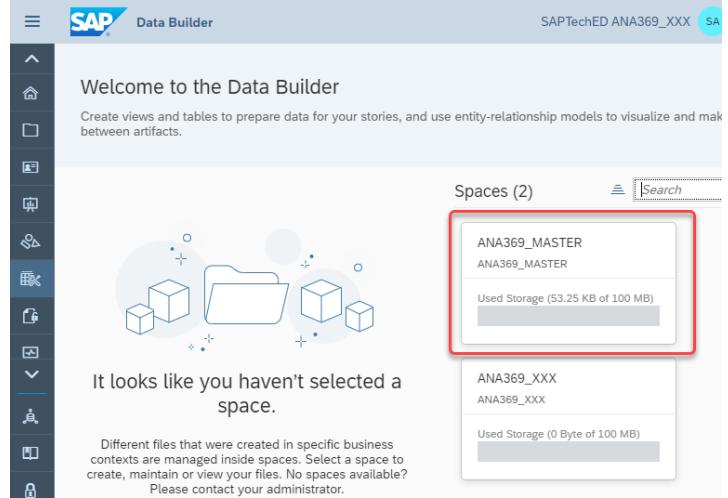
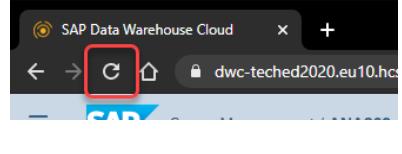
Explanation	Screenshot
1. Open Google Chrome in Incognito Mode	
2. Enter URL: https://dwc-teched2020.eu10.hcs.cloud.sap and press Enter	 <p>The screenshot shows a Google Chrome window in Incognito mode. The address bar displays the URL https://dwc-teched2020.eu10.hcs.cloud.sap. The page content includes a circular profile icon with a hat and glasses, the text "You've gone incognito", and a message about private browsing. It also lists information saved by Chrome and a setting to block third-party cookies.</p>
3. Enter email address based on your GROUP ID SAP-TechEd-ANALOGUE@sap.com (where ANALOGUE represents your GROUP ID)	 <p>The screenshot shows the SAP HANA Cloud Services Log On page. The "E-Mail or User Name" field is highlighted with a red box and contains the value "sap-teched-analogue@sap.com". The "Password" field contains several dots. There is a "Remember me" checkbox and a "Log On" button. Below the form, there is a link "Forgot password?" and the SAP HANA Cloud Services logo at the bottom.</p>

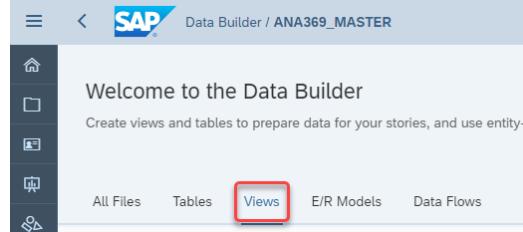
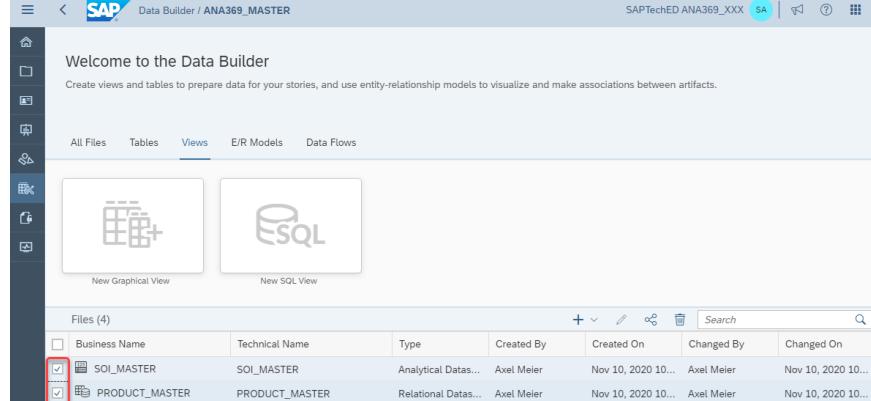
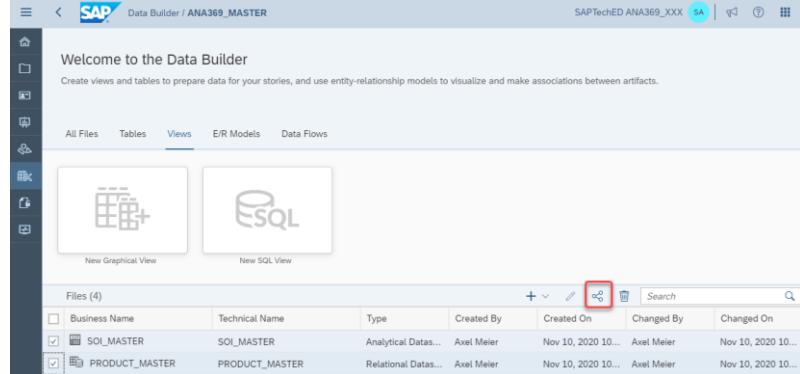
Explanation	Screenshot
4. Enter Password: Welcome2020!	 <p>The screenshot shows the SAP Log On page. The 'Password' input field is highlighted with a red border. The text 'Welcome2020!' is entered into the field.</p>
5. Click: Log On	 <p>The screenshot shows the SAP Log On page with the 'Log On' button highlighted in blue.</p>
6. Welcome to SAP Data Warehouse Cloud	 <p>The screenshot shows the SAP Data Warehouse Cloud Home page. It features a central banner with the text 'Welcome to SAP Data Warehouse Cloud' and three steps to get started: 'Create Spaces', 'Build Data', and 'Build a Story'. To the right, there's a feedback section and a 'Recent Files' area.</p>
7. Navigate to Space Management by clicking on the Space Management Icon in the Menu bar on the bottom left.	 <p>The screenshot shows the SAP Data Warehouse Cloud menu bar at the bottom. The 'Space Management' option is highlighted with a red box.</p>

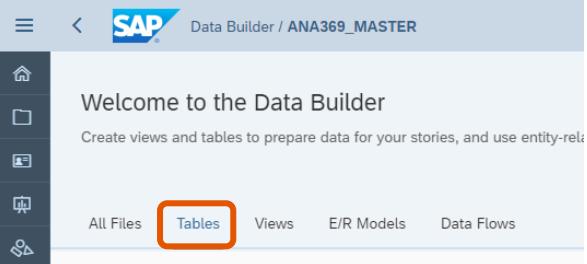
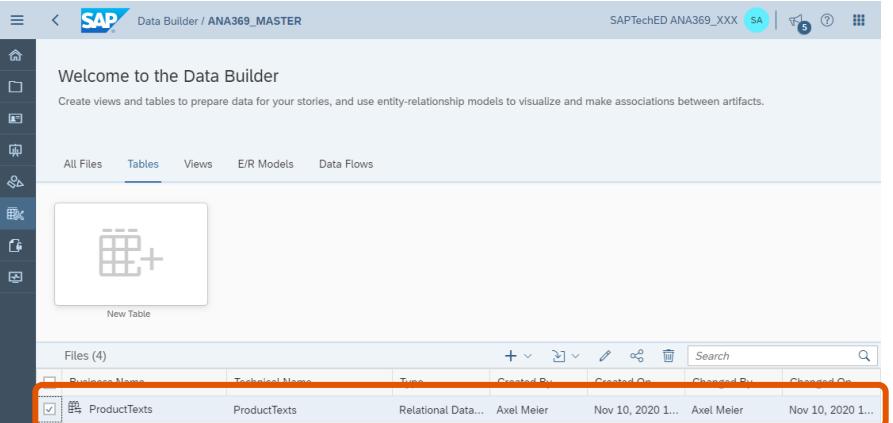
Explanation	Screenshot
8. Create your own space	
9. Name the space like your User ANA369_### and replace the ### with your GROUP ID.	
10. Reduce the size of your disk space to 0.1 GB by using the  Button	

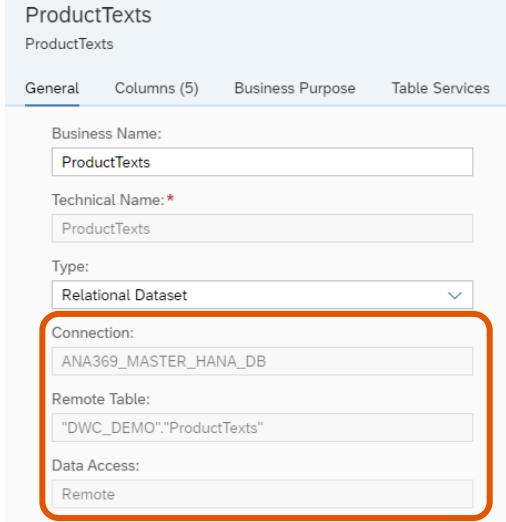
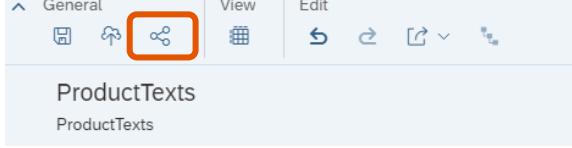
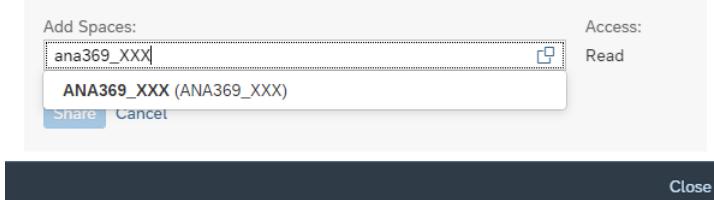
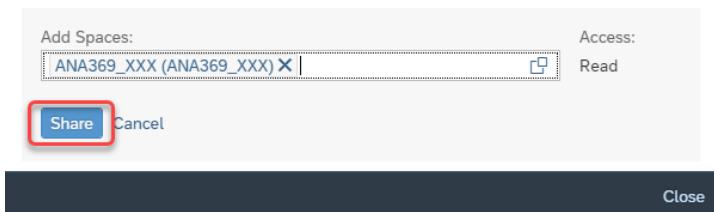
Explanation	Screenshot
11. Save your space settings	
12. Navigate to the Member Section	
13. Add your user to the space	
14. Search for your user 369_###, select and add it	
15. In case you see this error message come up, then Close the error message If you do not see it continue with Step 17.	

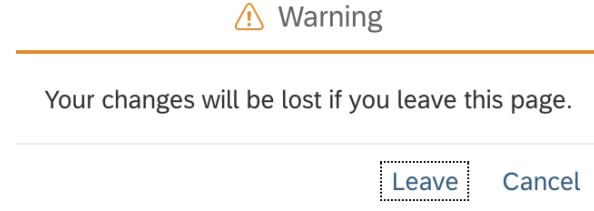
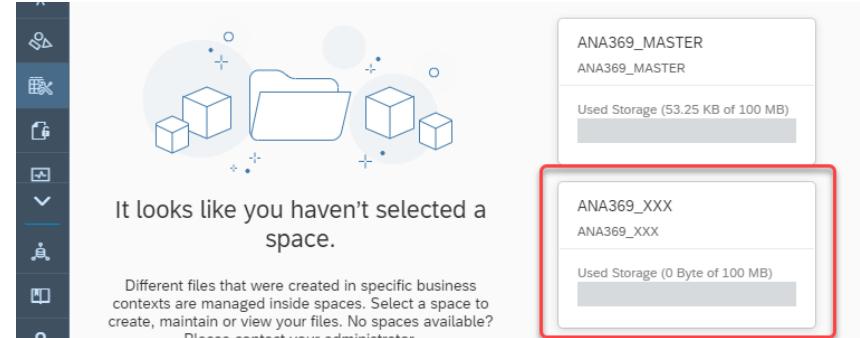
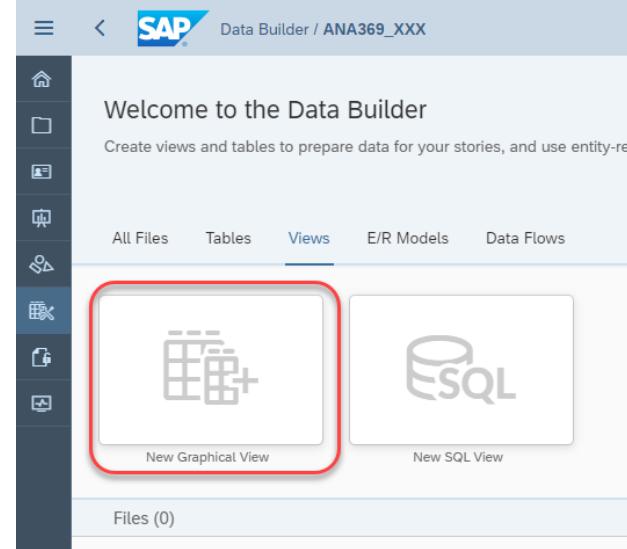
Explanation	Screenshot
16. Refresh your browser session and you see your user was added to the space members	
17. Navigate to the space management overview	
18. Select the ANA369_MASTER space	
19. Add your user to the space	
20. Search for your user 369_###, select and add it	

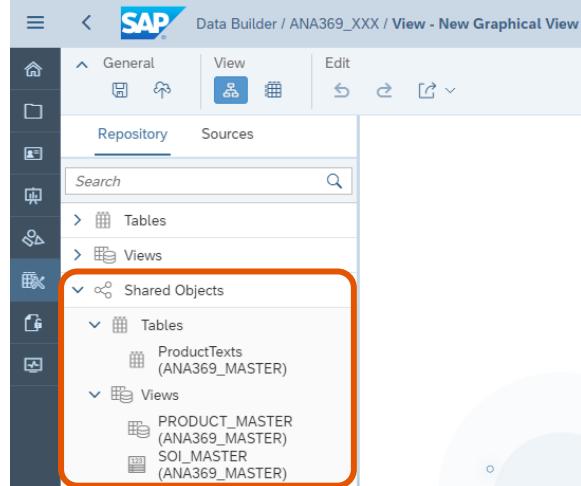
Explanation	Screenshot
<p>21. In case you see this error message come up, then Close the error message If you do not see it continue with Step 23.</p>	 <p>The users couldn't be added.</p> <p style="text-align: right;">Close</p>
<p>22. Refresh your browser session and you see your user was added to the space members</p>	
<p>23. Navigate to the Data Builder in the Menu bar</p>	
<p>24. In case the Space selection screen comes up, please select the ANA369_MASTER space (optional)</p>	
<p>25. CAUTION! In case you do not see the ANA369_MASTER space please refresh your browser window. Otherwise continue with Step 27.</p>	

Explanation	Screenshot																															
26. In the Data Builder Overview select the Views Tab.	 <p>The screenshot shows the SAP Data Builder interface with the title bar "Data Builder / ANA369_MASTER". Below the title bar, there is a navigation bar with icons for Home, Back, Forward, and Help. The main area is titled "Welcome to the Data Builder" with the sub-instruction "Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts." Below this, there are tabs for "All Files", "Tables", "Views" (which is highlighted with a red box), "E/R Models", and "Data Flows".</p>																															
27. Select the SOI_MASTER and PRODUCT_MASTER views	 <p>The screenshot shows the SAP Data Builder interface with the "Views" tab selected. The main area displays two view icons: "New Graphical View" and "New SQL View". Below these icons is a table titled "Files (4)" showing four entries:</p> <table border="1"> <thead> <tr> <th>Business Name</th> <th>Technical Name</th> <th>Type</th> <th>Created By</th> <th>Created On</th> <th>Changed By</th> <th>Changed On</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td>SOI_MASTER</td> <td>SOI_MASTER</td> <td>Analytical Datas...</td> <td>Axel Meier</td> <td>Nov 10, 2020 10...</td> <td>Axel Meier</td> <td>Nov 10, 2020 10...</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>PRODUCT_MASTER</td> <td>PRODUCT_MASTER</td> <td>Relational Datas...</td> <td>Axel Meier</td> <td>Nov 10, 2020 10...</td> <td>Axel Meier</td> <td>Nov 10, 2020 10...</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Business Name</td> <td>Technical Name</td> <td>Type</td> <td>Created By</td> <td>Created On</td> <td>Changed By</td> <td>Changed On</td> </tr> </tbody> </table>	Business Name	Technical Name	Type	Created By	Created On	Changed By	Changed On	<input checked="" type="checkbox"/>	SOI_MASTER	SOI_MASTER	Analytical Datas...	Axel Meier	Nov 10, 2020 10...	Axel Meier	Nov 10, 2020 10...	<input checked="" type="checkbox"/>	PRODUCT_MASTER	PRODUCT_MASTER	Relational Datas...	Axel Meier	Nov 10, 2020 10...	Axel Meier	Nov 10, 2020 10...	<input type="checkbox"/>	Business Name	Technical Name	Type	Created By	Created On	Changed By	Changed On
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<input type="checkbox"/>	Business Name	Technical Name	Type	Created By	Created On	Changed By	Changed On																									
28. Share these two views with the space you have just created by clicking the share icon	 <p>The screenshot shows the SAP Data Builder interface with the "Views" tab selected. The main area displays two view icons: "New Graphical View" and "New SQL View". Below these icons is a table titled "Files (4)" showing four entries. A red box highlights the "Share" icon in the toolbar above the table.</p>																															
29. Enter your space name and select it from the dropdown list	 <p>The screenshot shows a "Share 2 Models" dialog box. It has a section "Add Spaces:" with a text input field containing "ana369_XXX" and a dropdown menu showing "ANA369_XXX (ANA369_XXX)". Below this are "Share" and "Cancel" buttons. To the right, there is an "Access:" section with "Read" selected. At the bottom right is a "Close" button.</p>																															

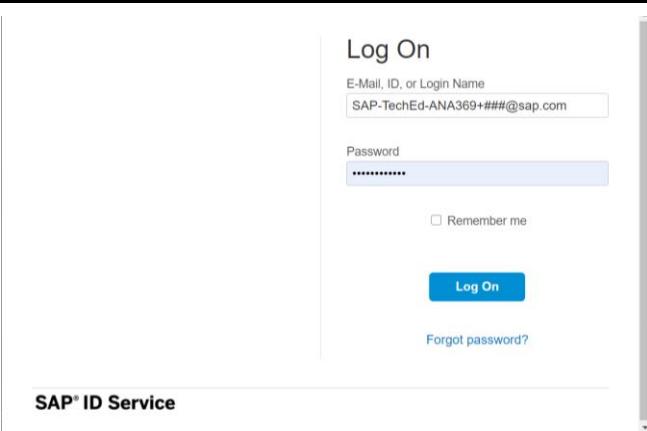
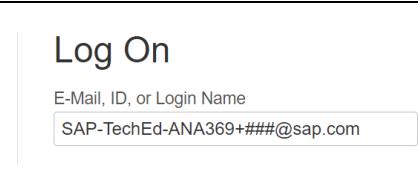
Explanation	Screenshot
30. Click on Share to share these two models with your space	
31. In the Data Builder Overview select the Tables Tab.	
32. Select the ProductTexts table	
33. Click on the Edit button	

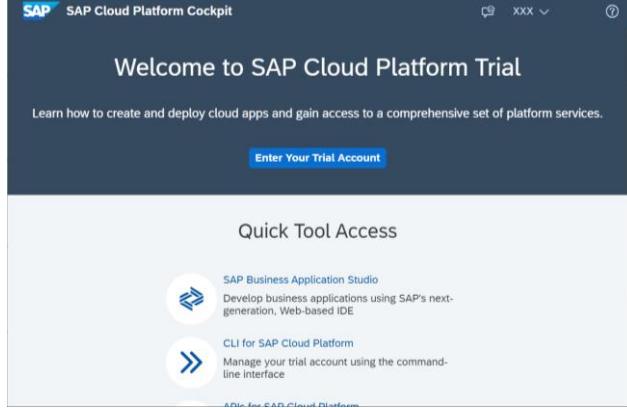
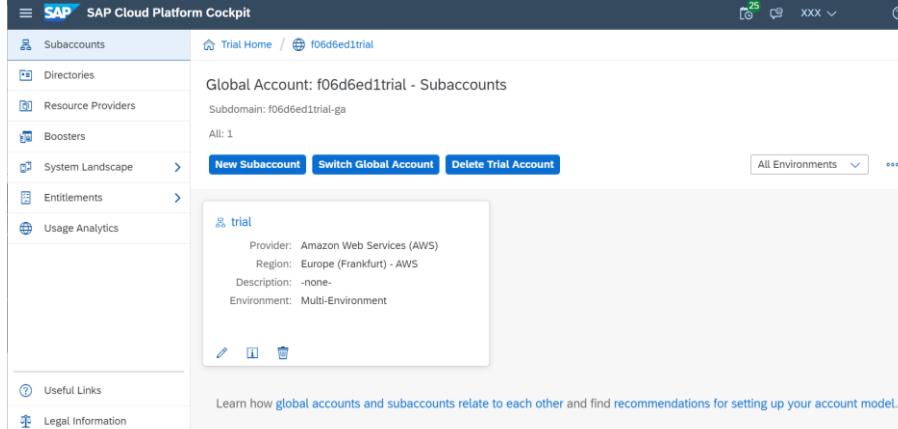
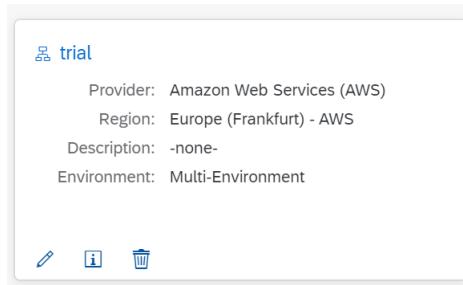
Explanation	Screenshot
34. The ProductTexts table is based on a remote connection and does not persist the data in the system.	
35. Share the table with the space you have just created by clicking the share icon	
36. Enter your space name and select it from the dropdown list	
37. Click on Share to share these two models with your space	
38. Go back to the space selection	

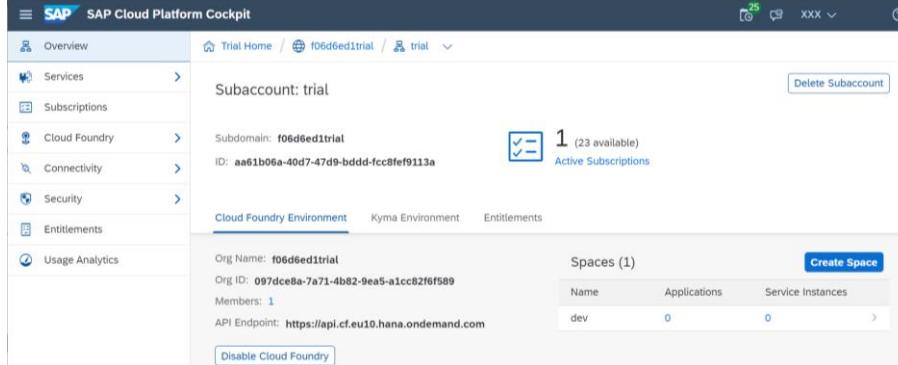
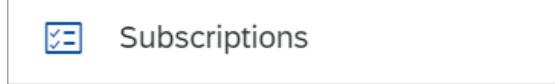
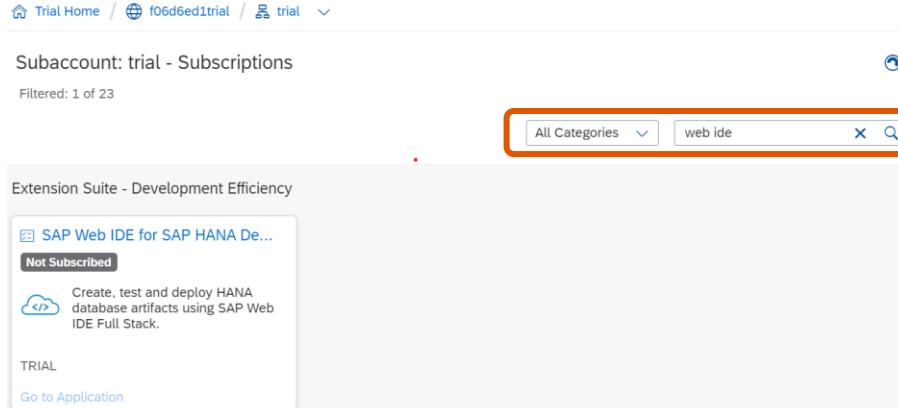
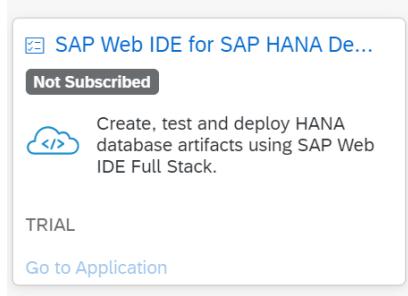
Explanation	Screenshot
39. In case that warning appears, click on Leave	
40. Select your own space ANA369_### where ### represents your GROUP ID	
41. Click on the tile "New Graphical View"	

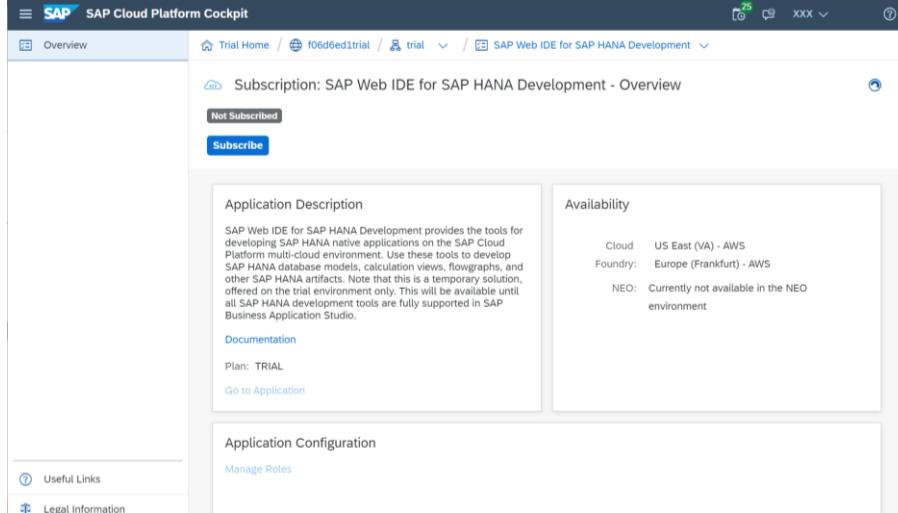
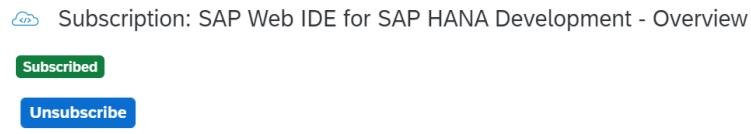
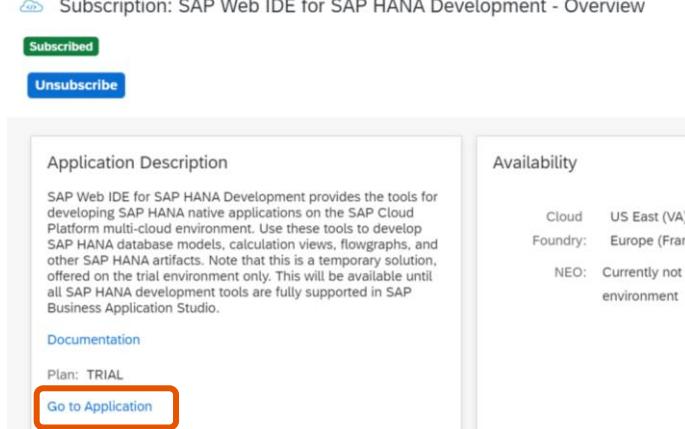
Explanation	Screenshot
<p>42. In the Repository on the left side you should now be able to see the Shared Objects. The table and the two views you have just shared.</p>	 <p>The screenshot shows the SAP Data Builder interface with the title 'Data Builder / ANA369_XXX / View - New Graphical View'. On the left, there's a navigation bar with icons for Home, Repository, Sources, and a search bar. Below that is a tree view under 'Repository' with 'Tables' and 'Views' expanded. Under 'Tables', 'ProductTexts (ANA369_MASTER)' is listed. Under 'Views', 'PRODUCT_MASTER (ANA369_MASTER)' and 'SOI_MASTER (ANA369_MASTER)' are listed. A red box highlights the 'Shared Objects' section.</p>

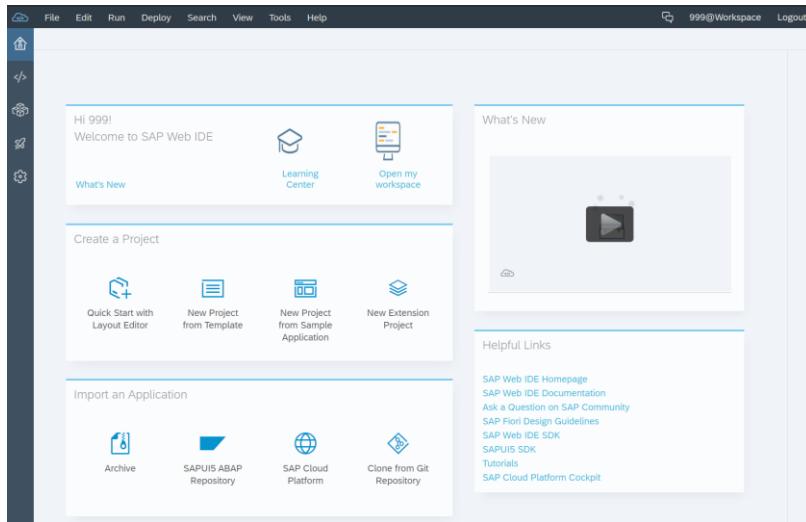
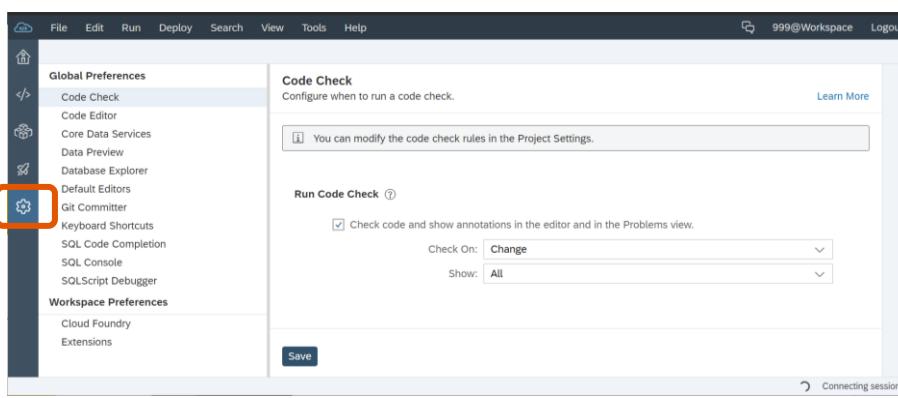
LOGON TO SAP CLOUD PLATFORM WEB IDE AND CONFIGURATION

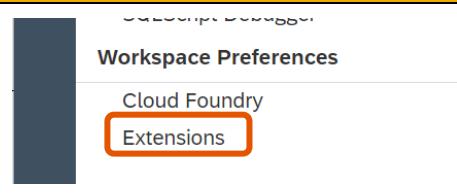
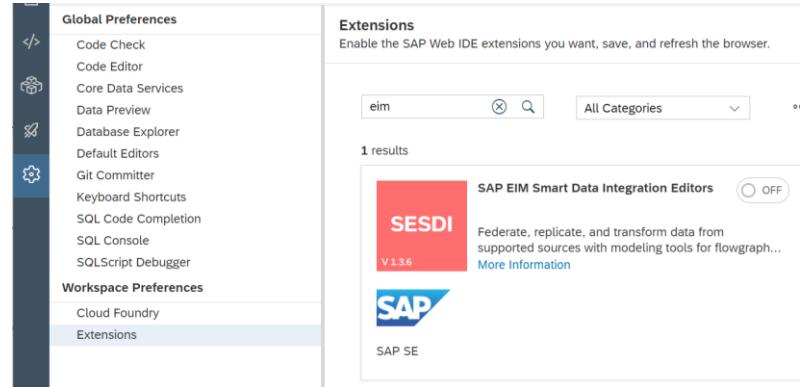
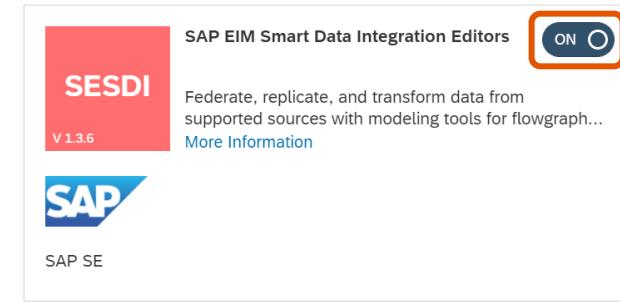
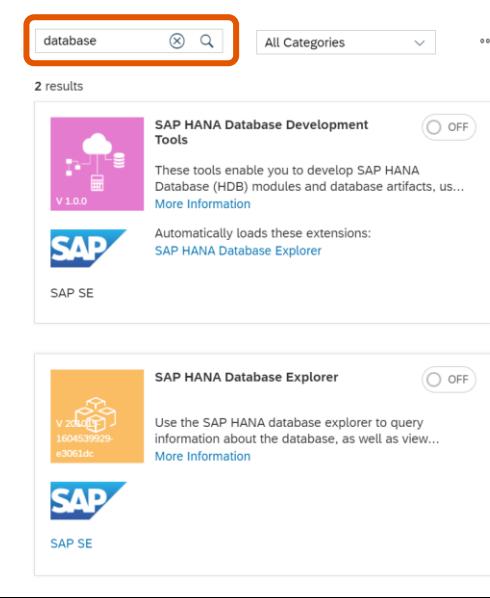
Explanation	Screenshot
<p>1. Enter URL: https://cockpit.eu10.hana.ondemand.com/trial/#/home/trial and press Enter</p>	 <p>The screenshot shows the SAP Cloud Platform Log On page. It has fields for 'E-Mail, ID, or Login Name' containing 'SAP-TechEd-ANA369+###@sap.com' and 'Password' (redacted). There are checkboxes for 'Remember me' and 'Log On', and a 'Forgot password?' link. Below the form is a 'SAP ID Service' section.</p>
<p>2. Enter email address based on your GROUP ID SAP-TechEd-ANA369+###@sap.com (where ### represents your GROUP ID)</p>	 <p>The screenshot shows the SAP Cloud Platform Log On page with the 'E-Mail, ID, or Login Name' field filled with 'SAP-TechEd-ANA369+###@sap.com'.</p>
<p>3. Enter Password: Welcome2020!</p>	 <p>The screenshot shows the SAP Cloud Platform Log On page with the 'Password' field filled with 'Welcome2020!' (redacted).</p>

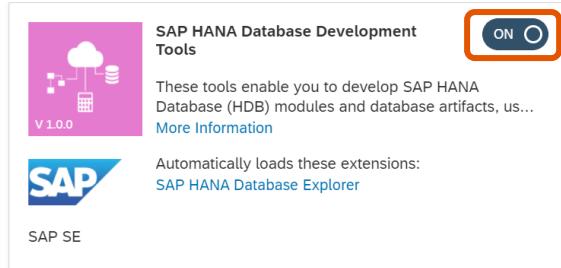
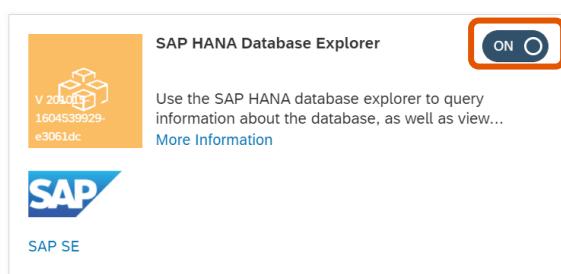
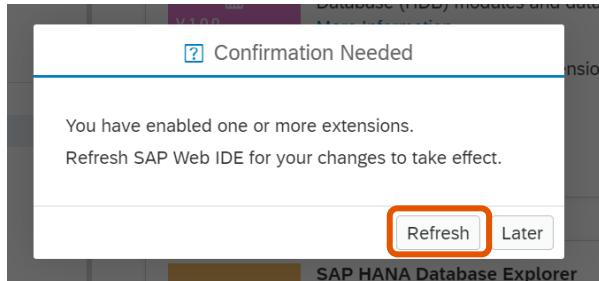
Explanation	Screenshot
4. Click: Log On	
5. You get to the welcome screen for the SAP Cloud Platform Trial	
6. Click on Enter Your Trial Account	
7. You are now in your SAP Cloud Platform Cockpit	
8. Click on your trial subaccount	

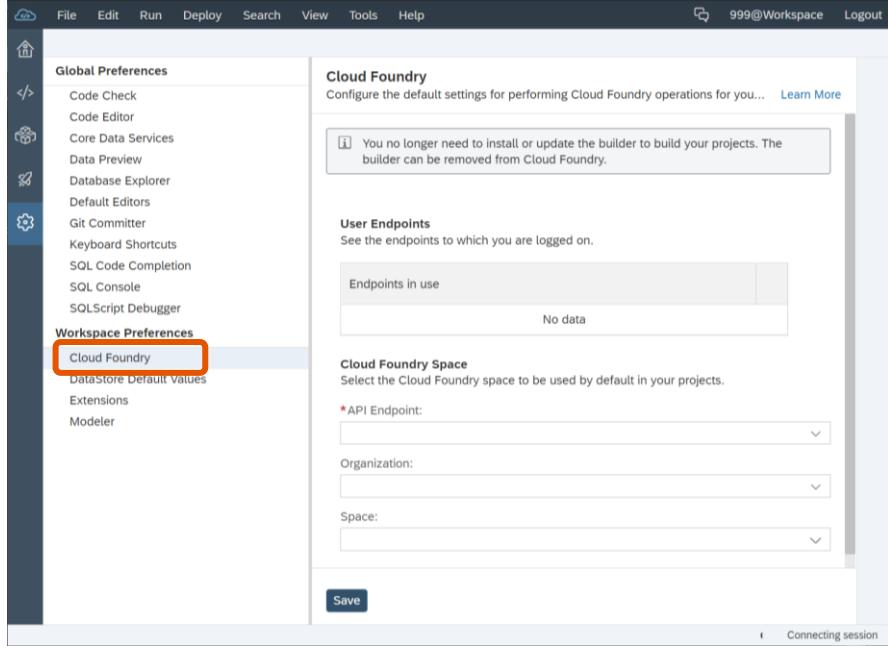
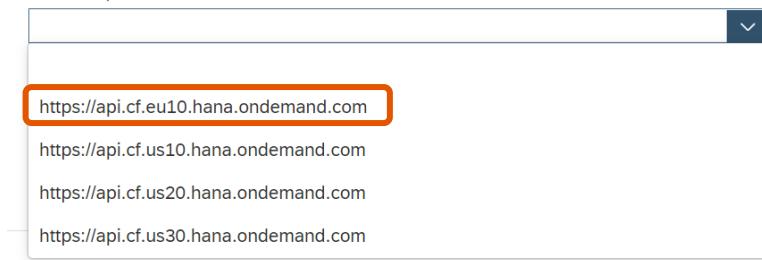
Explanation	Screenshot
9. You are now in your subaccount overview	 <p>The screenshot shows the SAP Cloud Platform Cockpit Subaccount Overview page. The left sidebar includes links for Overview, Services, Subscriptions, Cloud Foundry, Connectivity, Security, Entitlements, and Usage Analytics. The main area displays the subaccount details: Subdomain: f06d6ed1trial, ID: aa61b06a-40d7-47d9-bddd-fcc8fef9113a, and Active Subscriptions (1 available). It also shows Cloud Foundry Environment, Kyma Environment, and Entitlements sections. A 'Create Space' button is visible.</p>
10. Click on Subscriptions in the menu on the left	 <p>The screenshot shows the Subscriptions page with a checked checkbox icon and the word "Subscriptions".</p>
11. Search for web ide in your subscriptions	 <p>The screenshot shows the Subscriptions page filtered by "web ide". The search bar contains "All Categories" and "web ide". The results list the "SAP Web IDE for SAP HANA Development" tile.</p>
12. Click on the SAP Web IDE for SAP HANA Development tile	 <p>The screenshot shows the details of the "SAP Web IDE for SAP HANA Development" tile, which is currently "Not Subscribed". It provides a brief description: "Create, test and deploy HANA database artifacts using SAP Web IDE Full Stack." and indicates it is a TRIAL application.</p>

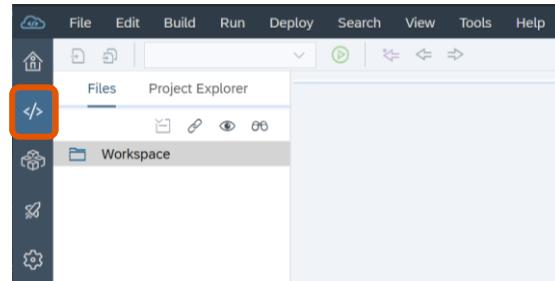
Explanation	Screenshot
13. In the subscription overview you can see that the subscription for this service is not active	 <p>The screenshot shows the SAP Cloud Platform Cockpit interface. The top navigation bar includes 'Overview', 'Trial Home', 'f06d6ed1trial / trial', and 'SAP Web IDE for SAP HANA Development'. The main content area is titled 'Subscription: SAP Web IDE for SAP HANA Development - Overview'. A large button labeled 'Subscribe' is visible. Below it, there are two sections: 'Application Description' and 'Availability'. The 'Application Description' section contains a detailed description of SAP Web IDE for SAP HANA Development. The 'Availability' section shows the following details: Cloud: US East (VA) - AWS; Foundry: Europe (Frankfurt) - AWS; NEO: Currently not available in the NEO environment.</p>
14. Click on Subscribe	
15. The service is now starting and you see that the Processing started	
16. When finished you see an active subscription with the green Subscribed label	 <p>The screenshot shows the SAP Cloud Platform Cockpit interface. The top navigation bar includes 'Overview', 'Trial Home', 'f06d6ed1trial / trial', and 'SAP Web IDE for SAP HANA Development'. The main content area is titled 'Subscription: SAP Web IDE for SAP HANA Development - Overview'. A large button labeled 'Subscribe' is visible. Below it, there are two sections: 'Application Configuration' and 'Manage Roles'. The 'Application Configuration' section contains a link to 'Manage Roles'.</p>
17. You can now start your Web IDE by clicking on the Go to Application link underneath the application description.	 <p>The screenshot shows the SAP Cloud Platform Cockpit interface. The top navigation bar includes 'Overview', 'Trial Home', 'f06d6ed1trial / trial', and 'SAP Web IDE for SAP HANA Development'. The main content area is titled 'Subscription: SAP Web IDE for SAP HANA Development - Overview'. A large button labeled 'Subscribe' is visible. Below it, there are two sections: 'Application Description' and 'Availability'. The 'Application Description' section contains a detailed description of SAP Web IDE for SAP HANA Development. The 'Availability' section shows the following details: Cloud: US East (VA); Foundry: Europe (Frankfurt); NEO: Currently not a environment. At the bottom, there is a 'Go to Application' link, which is highlighted with a red box.</p>

Explanation	Screenshot
18. Accept the Terms and Conditions by clicking the checkbox 	<p>Legal Disclaimers for SAP Cloud Platform</p> <p>We have updated our legal documents. To access and use SAP Cloud Platform, please read and accept the documents below:</p> <p>Terms and Conditions</p> <p><input checked="" type="checkbox"/> I acknowledge that I have read SAP's Privacy Statement *</p> <p>*Required</p> <p>Accept</p> <p>SAP® ID Service</p>
19. And click the Accept button	
20. You now get to the welcome screen of SAP Web IDE	
21. Navigate to the preferences section  in the menu	

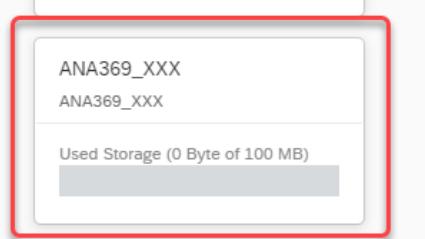
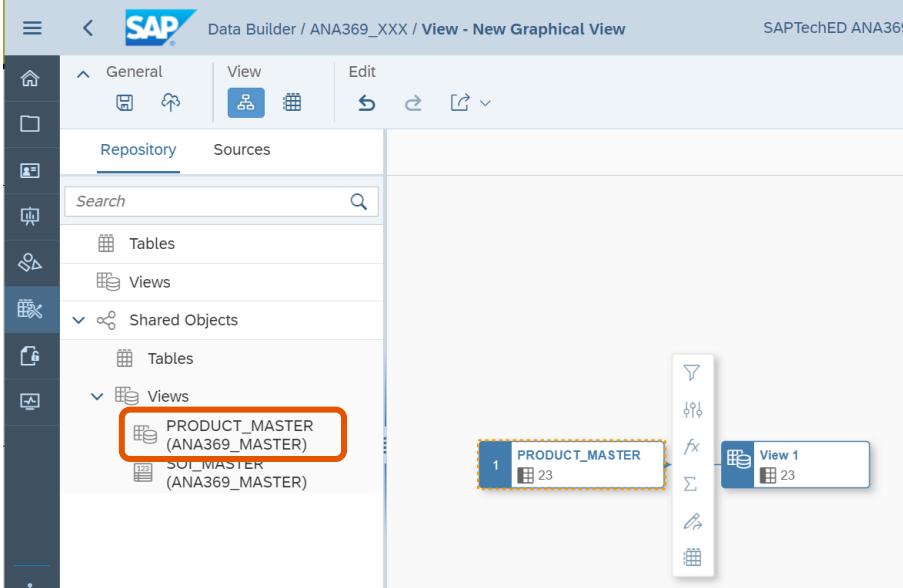
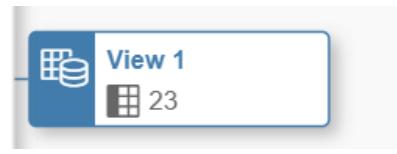
Explanation	Screenshot
22. Select Extensions	
23. Search for “EIM” to find the SAP EIM Smart Data Integration extension	
24. Enable the Extension using the ON/OFF switch.	
25. Search for “Database” to find: - SAP HANA Database Development Tools and - SAP HANA Database Explorer	

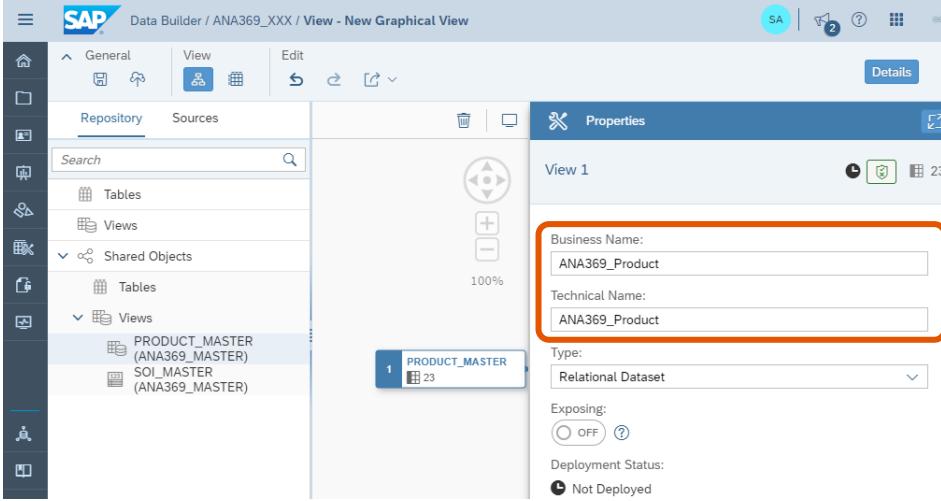
Explanation	Screenshot
26. Enable both extensions using the ON/OFF switch.	 
27. Then click Save on the bottom of the page	
28. Confirm using the Refresh button	
29. The Web IDE is now restarting	

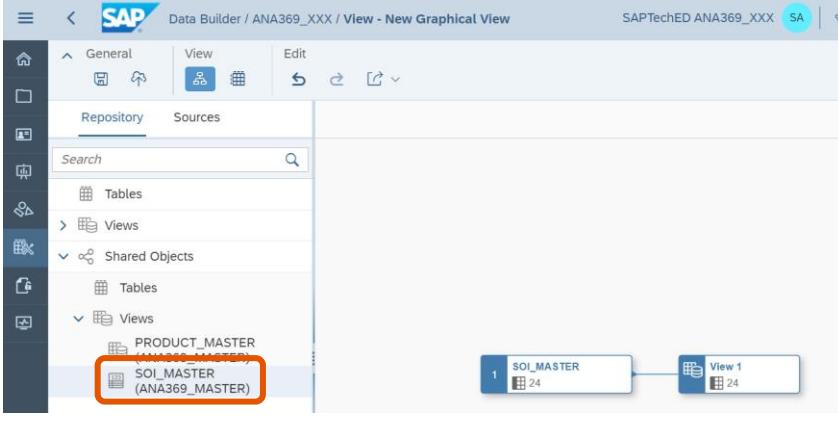
Explanation	Screenshot
30. Select Cloud Foundry in the menu on the left	 <p>The screenshot shows the SAP Cloud Platform cockpit's Global Preferences interface. On the left, there's a sidebar with various options like File, Edit, Run, Deploy, Search, View, Tools, Help, and a user icon. Under 'Global Preferences', there are sections for 'Code Check', 'Code Editor', 'Core Data Services', etc., and 'Workspace Preferences'. The 'Cloud Foundry' option is highlighted with a red box. To the right, there's a 'Cloud Foundry' configuration section with a note about the builder being removed, a 'User Endpoints' table showing 'No data', and a 'Cloud Foundry Space' configuration area with dropdowns for 'API Endpoint', 'Organization', and 'Space', all of which are currently empty.</p>
31. In the dropdown field API Endpoint select https://api.cf.eu10.hana.ondemand.com	<p>Cloud Foundry Space Select the Cloud Foundry space to be used by default in your projects.</p> <p>* API Endpoint:</p>  <p>The screenshot shows a dropdown menu for selecting a Cloud Foundry space. The first option, https://api.cf.eu10.hana.ondemand.com, is highlighted with a red box. Below it are three other options: https://api.cf.us10.hana.ondemand.com, https://api.cf.us20.hana.ondemand.com, and https://api.cf.us30.hana.ondemand.com.</p>
32. On the “Log on to Cloud Foundry” pop-up dialog please insert your email SAP-TechEd-ANA369+###@sap.com (where ### represents your GROUP ID) and the password to confirm your login.	<p>Log On to Cloud Foundry</p> <p>Endpoint: https://api.cf.eu10.hana.ondemand.com</p> <p>E-mail: sap-teched-ana369+###@sap.com</p> <p>Password: *****</p> <p>Log On Cancel</p> <p>The screenshot shows a 'Log On to Cloud Foundry' dialog box. It has fields for 'E-mail' containing 'sap-teched-ana369+###@sap.com' and 'Password' containing '*****'. At the bottom are 'Log On' and 'Cancel' buttons.</p>

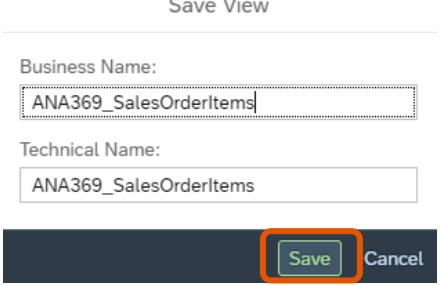
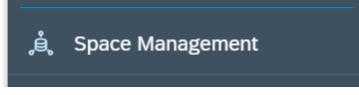
Explanation	Screenshot
33. The fields Organization and Space should then automatically be filled	<p>Cloud Foundry Space Select the Cloud Foundry space to be used by default in your projects.</p> <p>* API Endpoint: <input type="text" value="https://api.cf.eu10.hana.ondemand.com"/></p> <p>Organization: <input type="text" value="DW Cloud - PM_teched2020-ANA369"/></p> <p>Space: <input type="text" value="teched2020-ANA369"/></p> <p>Save</p>
34. If not select the Organization DW Cloud – PM_teched2020-ANA369	<p>Organization: <input type="text" value="DW Cloud - PM_teched2020-ANA369"/></p>
35. And the Space teched2020-ANA369	<p>Space: <input type="text" value="teched2020-ANA369"/></p>
36. Then Save these settings	<p>Save</p>
37. Select the development icon in the Web IDE menu 	
38. There should not be any project in the workspace. If so, please delete it.	

CREATE A MODEL AND A DATABASE USER IN SAP DATA WAREHOUSE CLOUD

Explanation	Screenshot
1. In SAP Data Warehouse Cloud go to the Data Builder	
2. Select your space ANA369_### (where ### represents your GROUP ID)	
3. Create a new graphical view	
4. In the Repository on the left open Shared Objects and Views . Select PRODUCT_MASTER (ANA369_MASTER) and drag it to the canvas.	
5. Click on the View 1 and the properties pane on the right will appear.	

Explanation	Screenshot
<p>6. In the properties give it the name ANA369_Product for both Business and Technical Name.</p>	
<p>7. Enable the Exposing flag from OFF to ON</p>	<p>Exposing:</p> <p>ON <input type="radio"/> <input type="radio"/> ?</p>
<p>8. Deploy the view using the deploy button</p>	
<p>9. Save the view</p>	<p>Save View</p> <p>Business Name: <input type="text" value="ANA369_Product"/></p> <p>Technical Name: <input type="text" value="ANA369_Product"/></p> <p><input type="button" value="Save"/> <input type="button" value="Cancel"/></p>
<p>10. The Deployment Status should change to Deployed after a few moments.</p>	<p>Deployment Status:</p> <p><input type="radio"/> Deployed</p>

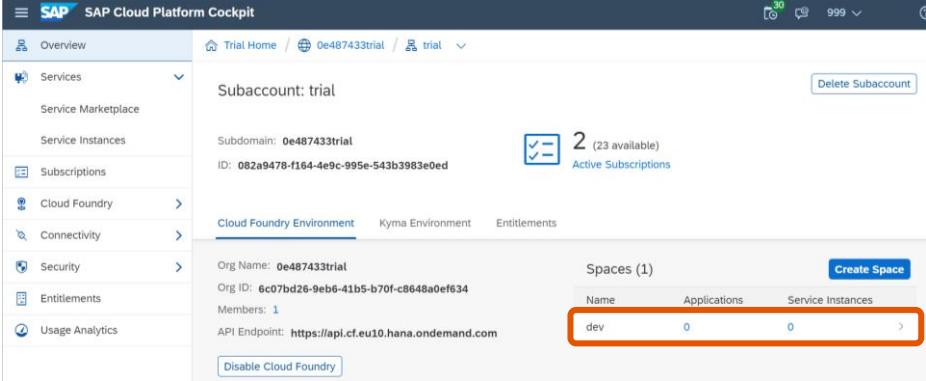
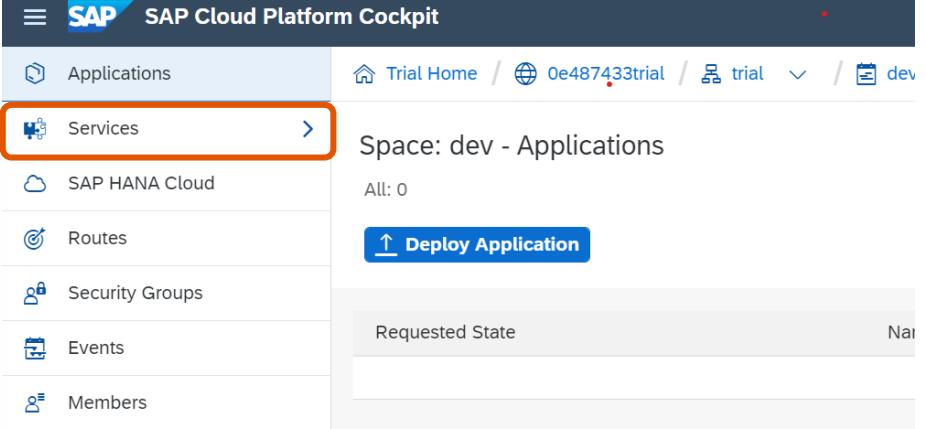
Explanation	Screenshot
11. Create another new graphical view	 <p>New Graphical View</p>
12. Use the second shared view SOI_MASTER and drag it to the canvas	
13. In the properties give it the name ANA369_SalesOrderItems for both Business and Technical Name.	<p>Business Name: ANA369_SalesOrderItems</p> <p>Technical Name: ANA369_SalesOrderItems</p>
14. Select the type Analytical Dataset	<p>Type: Analytical Dataset</p>
15. Enable the Exposing flag from OFF to ON	<p>Exposing: <input checked="" type="radio"/> ON <input type="radio"/> OFF <input type="radio"/> ?</p>
16. Deploy the view using the deploy button	

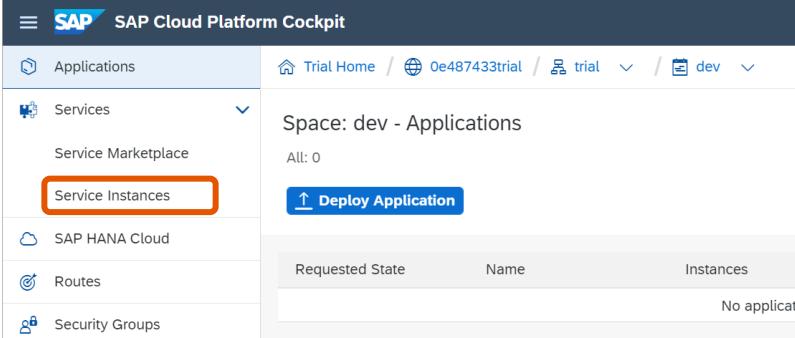
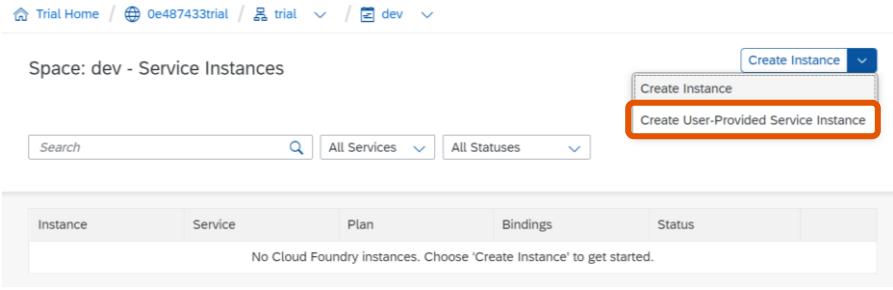
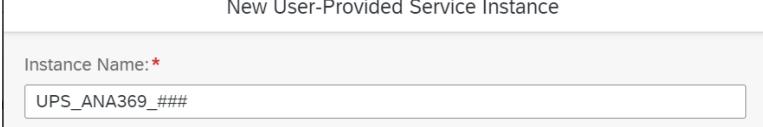
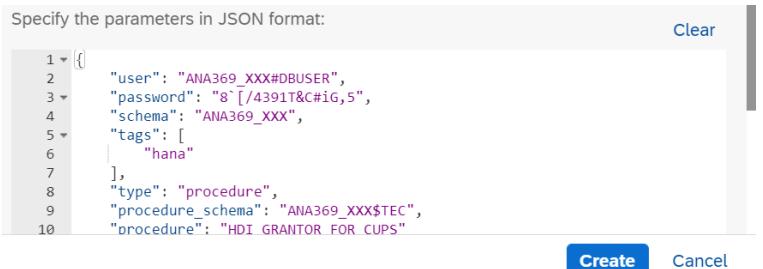
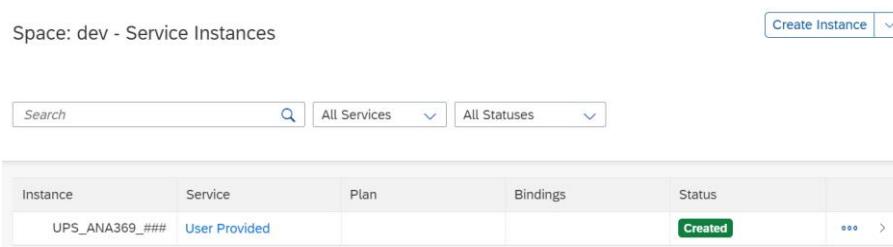
Explanation	Screenshot										
17. Save the view	 <p>Save View</p> <p>Business Name: ANA369_SalesOrderItems</p> <p>Technical Name: ANA369_SalesOrderItems</p> <p>Save Cancel</p>										
18. Go to the main menu on the left hand side and select Space Management	 <p>Space Management</p>										
19. Go to the Database Access Section	 <p>Space Management / ANA369_XXX</p> <p>ANA369_XXX</p> <p>Overview Members Connections Database Access Time Data Auditing</p>										
20. Make your space data consumable by default and switch the toggle from OFF to ON	<p>Database Users</p> <p>Ingest data from other apps or tools into SAP Data Warehouse Cloud or make your space data available by allowing other apps or tools to consume it. Create a database user and define privileges to combine the best of both worlds.</p> <p>Create Delete Edit Privileges Open Database Explorer Search</p> <table border="1"> <thead> <tr> <th>Database User Name</th> <th>Data Ingestion</th> <th>Data Consumption</th> <th>HDI Consumption</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td colspan="5">No database users have been created.</td> </tr> </tbody> </table> <p>Make your space data consumable by default. The models in the builders will automatically allow the data to be consumable.</p> <p>Default Consumption of Space Data: <input checked="" type="radio"/> OFF</p>	Database User Name	Data Ingestion	Data Consumption	HDI Consumption	Status	No database users have been created.				
Database User Name	Data Ingestion	Data Consumption	HDI Consumption	Status							
No database users have been created.											
21. Create a new Database User by clicking the Create button	<p>Database Users</p> <p>Ingest data from other apps or tools into SAP Data Warehouse Cloud or make your space data available by allowing other apps or tools to consume it. Create a database user and define privileges to combine the best of both worlds.</p> <p>Create Delete Edit Privileges Open Database Explorer Search</p> <table border="1"> <thead> <tr> <th>Database User Name</th> <th>Data Ingestion</th> <th>Data Consumption</th> <th>HDI Consumption</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td colspan="5">No database users have been created.</td> </tr> </tbody> </table> <p>Make your space data consumable by default. The models in the builders will automatically allow the data to be consumable.</p> <p>Default Consumption of Space Data: <input checked="" type="radio"/> ON</p>	Database User Name	Data Ingestion	Data Consumption	HDI Consumption	Status	No database users have been created.				
Database User Name	Data Ingestion	Data Consumption	HDI Consumption	Status							
No database users have been created.											

Explanation	Screenshot
<p>22. Give the Database User a name: DBUSER</p> <p>and</p> <p>check the boxes for Enable Data Ingestion</p> <p>Enable Data Consumption</p> <p>and</p> <p>Enable HDI Consumption</p>	<p>Create Database User</p> <p>Please note that it will not be possible to change the user name again after saving.</p> <p>Database User Name Suffix: * DBUSER</p> <p>24 characters remaining</p> <p>Database User Name: ANA369_XXX#DBUSER</p> <p>Privileges</p> <p>Ingest existing ETL data flows or data models in SAP Data Warehouse Cloud. Use the information provided to connect your tools of choice.</p> <p><input checked="" type="checkbox"/> Enable Data Ingestion</p> <p>Log the read and change operations for data ingestion.</p> <p><input type="checkbox"/> Enable Audit Logs for Read Operations and Keep Logs for 30 Days</p> <p><input type="checkbox"/> Enable Audit Logs for Change Operations and Keep Logs for 30 Days</p> <p>Allow other apps or tools to consume your space data.</p> <p><input checked="" type="checkbox"/> Enable Data Consumption</p> <p>User can grant data consumption to other users.</p> <p><input type="checkbox"/> Enable Data Consumption with Grant Option</p> <p>Make your space data available in your HDI containers.</p> <p><input checked="" type="checkbox"/> Enable HDI Consumption</p> <p>Create Cancel</p>
<p>23. Click Create to establish the database user</p>	<p>Create</p>
<p>24. On the next dialog note down all the information including password and the credentials for the User Provided Service</p>	<p>Database User Details</p> <p>Database User Name: ANA369_XXX#DBUSER</p> <p>Database Schema Name (Data Ingestion): ANA369_XXX#DBUSER</p> <p>Internal Schema Name (Data Consumption): ANA369_XXX</p> <p>Host Name: afde8212-e05b-4310-90fb-0b114c6dad77.hana.prod-eu10.hanacloud.o... Port: 443</p> <p>Password</p>

Explanation	Screenshot
25. Click on Copy Full Credentials on the bottom of the window	
26. Do not close this Dialog yet!	

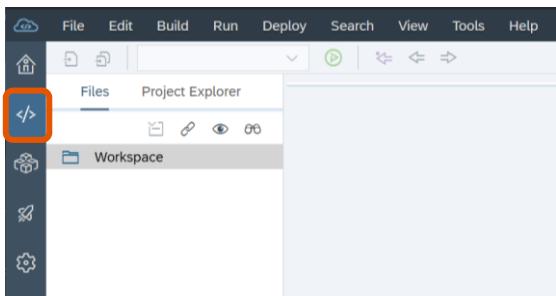
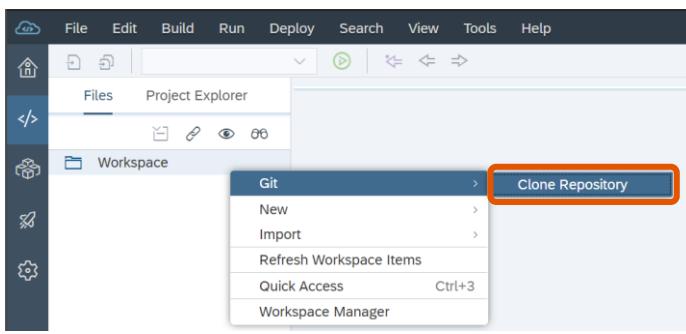
CREATE THE USER PROVIDED SERVICE IN SAP CLOUD PLATFORM

Explanation	Screenshot
1. In the SAP Cloud Platform subaccount overview click on the dev space	
2. Open the Service submenu on the left hand side	

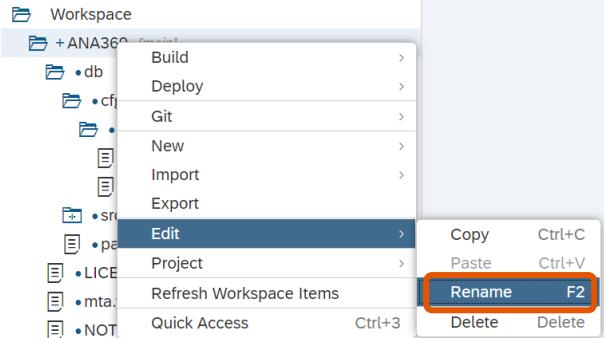
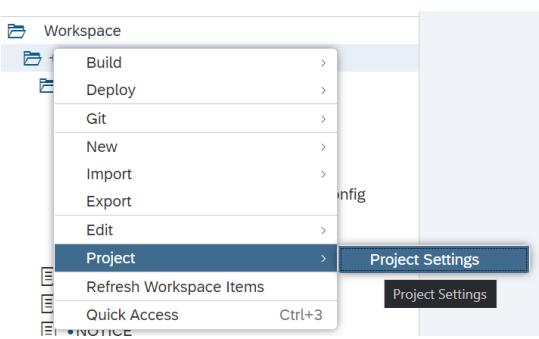
Explanation	Screenshot										
3. Select Service Instances in the menu	 <p>The SAP Cloud Platform Cockpit interface. The left sidebar has 'Service Instances' highlighted with a red box. The main area shows 'Space: dev - Applications' with a table header: Requested State, Name, Instances. Below it says 'No applications'.</p>										
4. Select Create User-Provided Service Instance in the drop-down box on the top right-hand side	 <p>The SAP Cloud Platform Cockpit interface. The top right shows a 'Create Instance' dropdown with 'Create User-Provided Service Instance' selected, highlighted with a red box.</p>										
5. Enter the name UPS_ANA369_### as instance name and replace the ### with your GROUP ID.	 <p>New User-Provided Service Instance dialog. The 'Instance Name:' field contains 'UPS_ANA369_###'.</p>										
6. Take the content of the Copy Full Credentials from the database user in your Space in Data Warehouse Cloud. Paste it into the	 <p>Specify the parameters in JSON format:</p> <pre> 1 { 2 "user": "ANA369_XXX#DBUSER", 3 "password": "874391T&C#iG5", 4 "schema": "ANA369_XXX", 5 "tags": [6 "hana" 7], 8 "type": "procedure", 9 "procedure_schema": "ANA369_XXX\$TEC", 10 "procedure": "HDI_GRANTOR_FOR_CUPS" </pre> <p>Create Cancel</p>										
7. Create the user provided service	 <p>Create</p>										
8. Now you see an entry in the services instances overview table	 <p>Space: dev - Service Instances</p> <table border="1"> <thead> <tr> <th>Instance</th> <th>Service</th> <th>Plan</th> <th>Bindings</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>UPS_ANA369_###</td> <td>User Provided</td> <td></td> <td></td> <td>Created</td> </tr> </tbody> </table>	Instance	Service	Plan	Bindings	Status	UPS_ANA369_###	User Provided			Created
Instance	Service	Plan	Bindings	Status							
UPS_ANA369_###	User Provided			Created							

Explanation	Screenshot																	
<p>9. Change your browser window back to Data Warehouse Cloud and close the dialog.</p>	<p>HDI Consumption</p> <p>To set up access via this database user, copy the credentials to your user-provided service. In case you can only copy the credentials without a password, make sure you add the password later.</p> <p>Credentials for User-Provided Service (Without Password):</p> <pre data-bbox="551 524 1205 636">], "type": "procedure", "procedure_schema": "ANA369_XXX\$TEC", "procedure": "HDI_GRANTOR_FOR_CUPS" }</pre> <p>Copy Credentials Without Password</p> <p>Close</p>																	
<p>10. You can close the dialog in the space management now and see the created database user.</p>	<p>Database Users</p> <p>Ingest data from other apps or tools into SAP Data Warehouse Cloud or make your space data available by allowing other apps or tools to consume it. Create a database user and define privileges to combine the best of both worlds.</p> <table border="1" data-bbox="535 868 1433 1001"> <thead> <tr> <th data-bbox="796 868 862 889">Create</th> <th data-bbox="870 868 919 889">Delete</th> <th data-bbox="927 868 1025 889">Edit Privileges</th> <th data-bbox="1033 868 1188 889">Open Database Explorer</th> <th data-bbox="1196 868 1254 889">Search</th> </tr> </thead> <tbody> <tr> <td data-bbox="560 910 576 931"><input checked="" type="checkbox"/></td> <td data-bbox="592 910 723 931">Database User Name</td> <td data-bbox="903 910 1001 931">Data Ingestion</td> <td data-bbox="1017 910 1115 931">Data Consumption</td> <td data-bbox="1131 910 1262 931">HDI Consumption</td> <td data-bbox="1278 910 1343 931">Status</td> </tr> <tr> <td data-bbox="560 952 576 974"><input checked="" type="checkbox"/></td> <td data-bbox="592 952 739 974">ANA369_XXX#DBUSER</td> <td data-bbox="903 952 968 974">✓ Enabled</td> <td data-bbox="1017 952 1082 974">✓ Enabled</td> <td data-bbox="1131 952 1229 974">✓ Enabled</td> <td data-bbox="1245 952 1311 974">Active</td> </tr> </tbody> </table>	Create	Delete	Edit Privileges	Open Database Explorer	Search	<input checked="" type="checkbox"/>	Database User Name	Data Ingestion	Data Consumption	HDI Consumption	Status	<input checked="" type="checkbox"/>	ANA369_XXX#DBUSER	✓ Enabled	✓ Enabled	✓ Enabled	Active
Create	Delete	Edit Privileges	Open Database Explorer	Search														
<input checked="" type="checkbox"/>	Database User Name	Data Ingestion	Data Consumption	HDI Consumption	Status													
<input checked="" type="checkbox"/>	ANA369_XXX#DBUSER	✓ Enabled	✓ Enabled	✓ Enabled	Active													

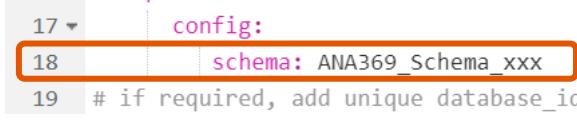
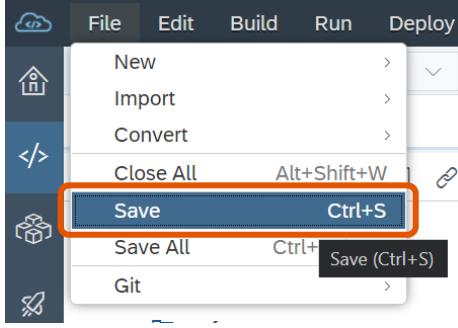
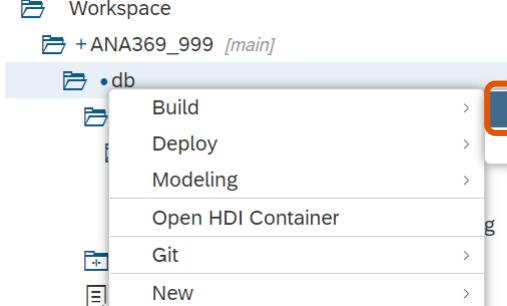
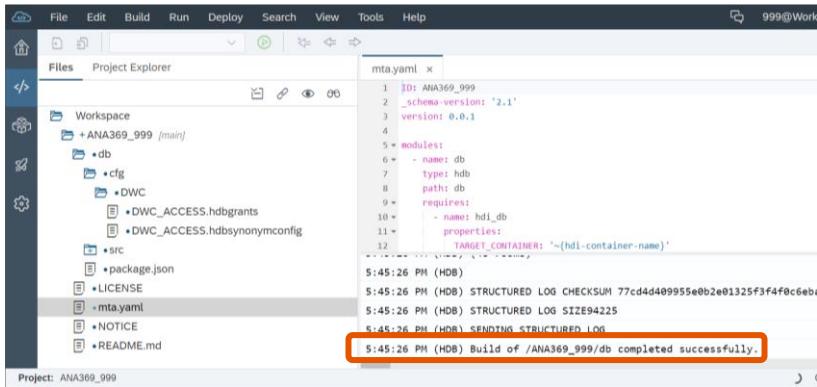
CLONE, CONFIGURE AND BUILD THE WEB IDE PROJECT

Explanation	Screenshot
<p>1. Go back to the Web IDE and select the development icon in the menu</p> 	
<p>2. Right mouse click on Workspace click on Git and Clone Repository</p>	
<p>3. Enter the following URL: https://github.com/d031643/ANA369.git</p>	<p>Clone Git Repository</p> <p>*URL <input type="text" value="https://github.com/d031643/ANA369.git"/></p> <p><input type="checkbox"/> Add configuration for Gerrit?</p> <p><input type="button" value="Clone"/> <input type="button" value="Cancel"/></p>
<p>4. Clone the repository</p>	<p><input type="button" value="Clone"/></p>

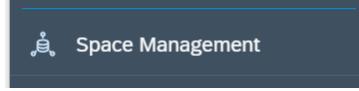
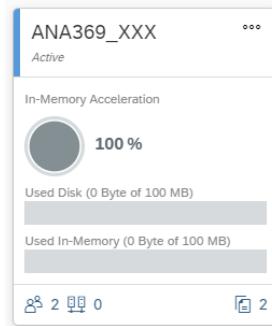
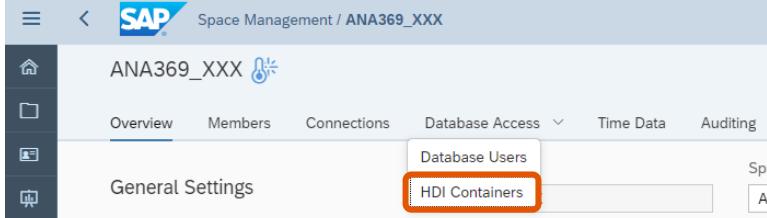
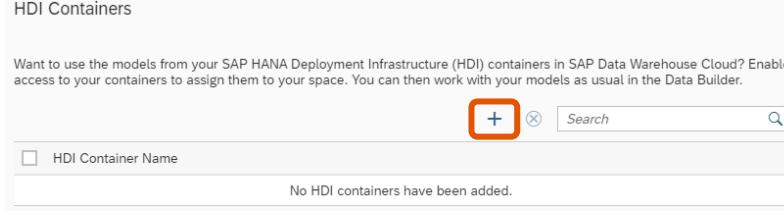
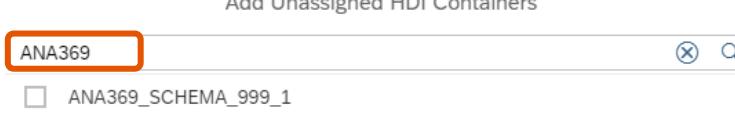
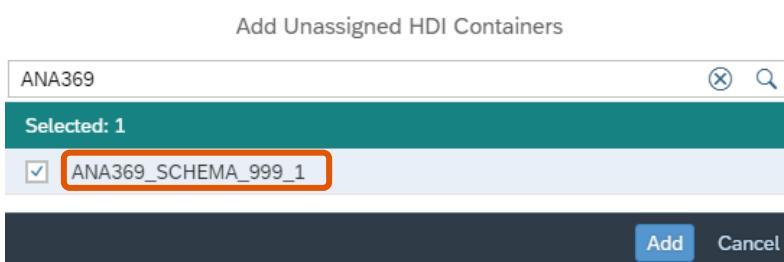
Explanation	Screenshot
5. It takes a moment to import and the following message comes up	<p>Git Ignore System Files</p> <p>We have automatically marked system files that should be ignored and untracked. To ignore and untrack these files, choose "Commit and Push" (recommended).</p> <p>Commit Descri... <input type="button" value="Ignore and Untrack S"/></p> <p><input type="button" value="Commit and Push"/> <input type="button" value="Do it later"/></p>
6. Choose Commit and Push	<p><input type="button" value="Commit and Push"/></p>
7. Cancel the next dialog	<p>Git User Information</p> <p>If you save your Git user information, your user name and e-mail address will be stored in the remote Git server and in your project settings. This cannot be undone.</p> <p>*Git E-mail Address: <input type="text" value="sap-teched-ana369+999@sap.com"/></p> <p>*Git User Name: <input type="text" value="999 SAP-TechEd-ANA369"/></p> <p><input type="button" value="Save"/> <input type="button" value="Cancel"/></p>
8. You should find the project named: ANA369 You can open the project and the folders db > cfg > DWC and find these files within the file tree.	<p>Files Project Explorer</p> <pre> Workspace + ANA369 [main] - db - cfg - DWC - DWC_ACCESS.hdbgrants - DWC_ACCESS.hdbsynonymconfig - src - package.json - LICENSE - mta.yaml - NOTICE - README.md </pre>

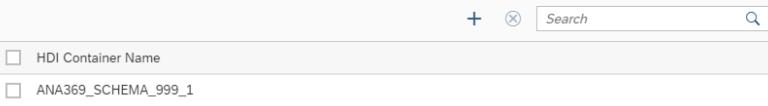
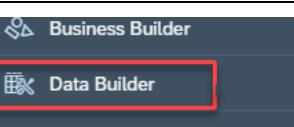
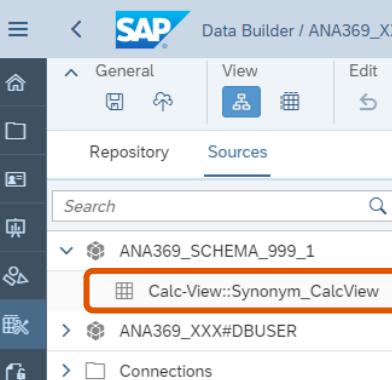
Explanation	Screenshot
<p>9. Right mouse click on ANA369 click on Edit and Rename</p>	
<p>10. Please use the name ANA369_### and replace the ### with your GROUP ID.</p>	<p>Rename Project</p> <p>New Name: <input type="text" value="ANA369_###"/></p> <p>Rename Cancel</p>
<p>11. Right mouse click on the project ANA369_### click on Project and Project Settings</p>	
<p>12. Select Cloud Foundry in the Project settings menu</p>	<p>Project</p> <p>Project Types</p> <p>Git Repository</p> <p>Cloud Foundry (highlighted with a red box)</p> <p>Beautifier</p> <p>JavaScript</p> <p>Code Checking</p> <p>JavaScript</p> <p>XML</p> <p>Cloud Foundry</p> <p>Select the default Cloud Foundry space for running your proj... Learn More</p> <p><input type="checkbox"/> You no longer need to install or update the builder to build your projects. The builder can be removed from Cloud Foundry.</p> <p>Cloud Foundry Settings</p> <p><input checked="" type="radio"/> Use the default settings defined in the Workspace Preferences.</p>

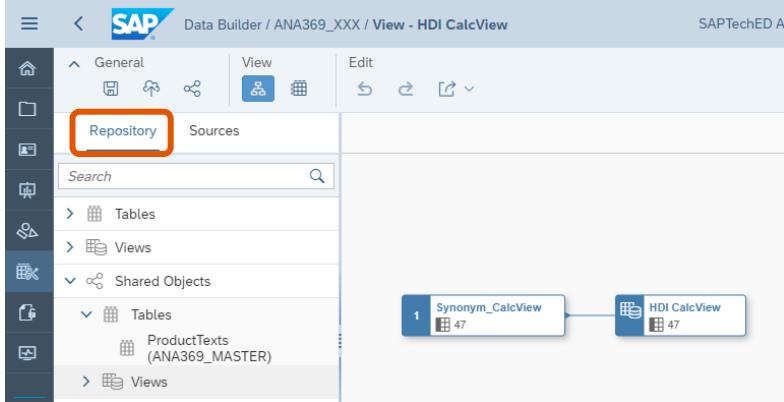
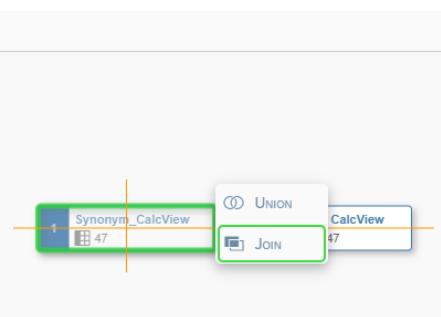
Explanation	Screenshot
13. Select the default settings which you have set before.	<p>Project Project Types Git Repository Cloud Foundry Beautifier JavaScript Code Checking JavaScript XML</p> <p>Cloud Foundry Select the default Cloud Foundry space for running your proj... Learn More</p> <p>You no longer need to install or update the builder to build your projects. The builder can be removed from Cloud Foundry.</p> <p>Cloud Foundry Settings</p> <p><input checked="" type="radio"/> Use the default settings defined in the Workspace Preferences.</p> <p>API Endpoint: https://api.cf.eu10.hana.ondemand.com</p> <p>Organization: DW Cloud - PM_teched2020-ANA369</p> <p>Space: teched2020-ANA369</p> <p><input type="radio"/> Use the following settings for this project.</p> <p>*API Endpoint: <input type="text" value="https://api.cf.eu10.hana.ondemand.com"/></p> <p>Organization: DW Cloud - PM_teched2020-ANA369</p> <p>Space: teched2020-ANA369</p>
14. Click Save	
15. Right mouse click on the mta.yaml file and select Open Code Editor .	<ul style="list-style-type: none"> • package.json • LICENSE • mta.yaml • NOTICE • README <p>Open MTA Editor</p> <p>Open Code Editor</p>
16. In line 1: extend the ID with your GROUP ID before: ANA369 after: ANA369_### where ### is your GROUP ID	<pre> 1 ID: ANA369 2 _schema: com.sap.hdi.hdbcf: '2.1' 3 version: 0.0.1 4 5 modules: 6 - name: db 7 type: hdb 8 path: db 9 requires: 10 - name: hdi_db 11 properties: 12 TARGET_CONTAINER: '{hdiconfig-name}' 13 resources: 14 - name: hdi_db 15 parameters: 16 config: 17 schema: ANA369_Schema_xxx 18 # if required, add unique database_id: 19 # database_id: 20 properties: 21 hdiconfig-name: '\${service-name}' 22 type: com.sap.xs.hdi-container 23 name: DB_MODULE 24 type: org.cloudfoundry.existing-service 25 parameters: 26 service-name: UPS_ANA369_MASTER </pre>

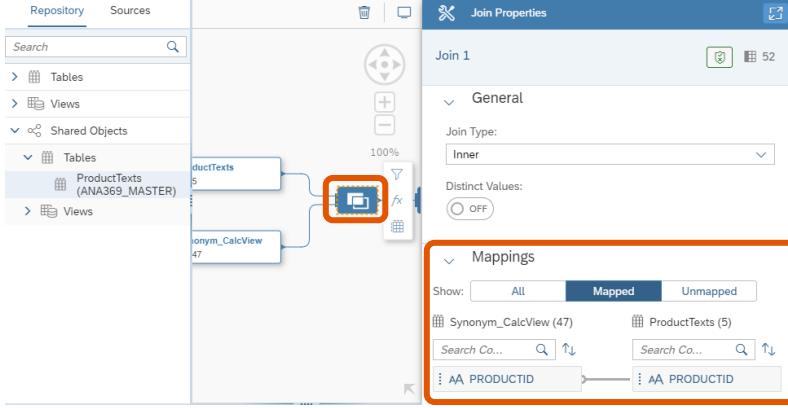
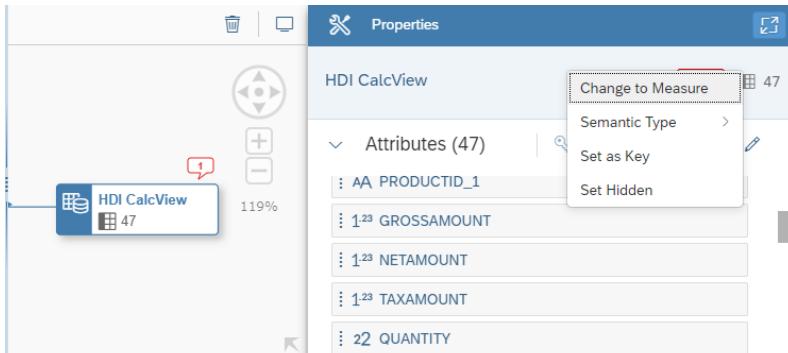
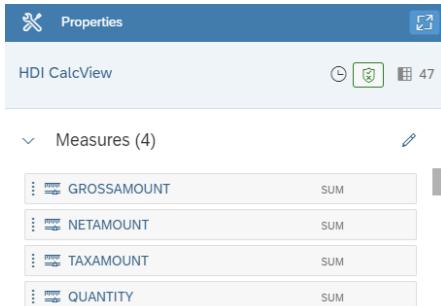
Explanation	Screenshot
<p>17. In line 18: replace <code>_xxx</code> with your GROUP ID</p> <p>before: schema: <code>ANA369_Schema_xxx</code></p> <p>after: schema: <code>ANA369_Schema_###</code></p> <p>where <code>###</code> is your GROUP ID</p>	 <pre> 17 config: 18 schema: ANA369_Schema_xxx 19 # if required, add unique database_id </pre>
<p>18. Save your changes in the <code>mta.yaml</code> file</p>	
<p>19. Now you can build your HDI container.</p> <p>Right mouse click on the db module</p> <p>Select Build and select Build again</p>	
<p>20. This process takes a few moments. Please be patient. You can follow the progress in the log window on the bottom right.</p> <p>The success message: 'Build of /ANA369_###/db completed successfully'</p> <p>should appear after a while</p>	

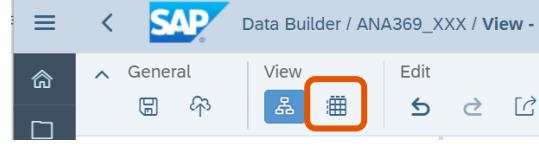
ASSIGN HDI CONTAINER TO YOUR SPACE AND EXTEND YOUR MODEL

Explanation	Screenshot
<p>1. Go back to Data Warehouse Cloud. In the main menu on the left-hand side and select Space Management.</p>	
<p>2. Select your own ANA369_### space, where ### is your GROUP ID</p>	
<p>3. Select Database Access > HDI Containers from the top-level menu</p>	
<p>4. Add the HDI container you have just created to your space using the  button.</p>	
<p>5. Search for the session ID ANA369</p>	
<p>6. Identify the container your GROUP ID ###</p>	

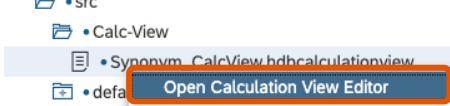
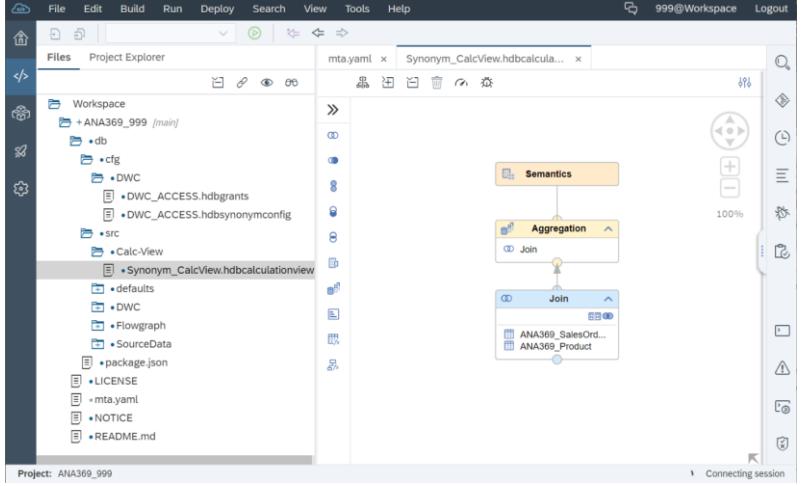
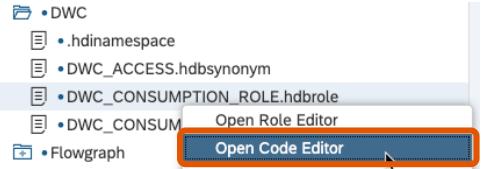
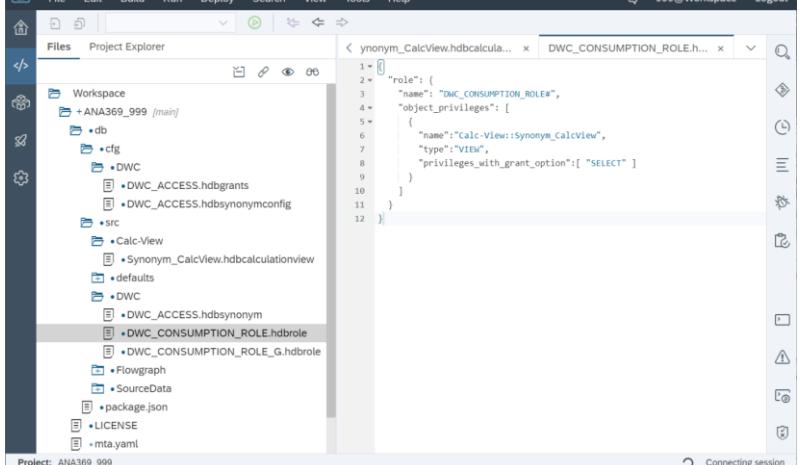
Explanation	Screenshot
7. Select Add to connect the container to your space.	
8. The HDI Container can now be used in the modeling.	<p>HDI Containers</p> <p>Want to use the models from your SAP HANA Deployment Infrastructure (HDI) containers in SAP Data Warehouse Cloud? Enable access to your containers to assign them to your space. You can then work with your models as usual in the Data Builder.</p> 
9. Navigate to the Data Builder in the Menu bar	
10. Create a new graphical view	
11. Under the Sources tab you find the HDI container you have just connected and the Calculation View which is allowed to be accessed by the consumption role in Web IDE.	
12. Drag it to the canvas and click Import and Deploy when the pop-up comes up.	<p>Import Table</p> <p>Business Name: <input type="text" value="Synonym_CalcView"/></p> <p>Technical Name: <input type="text" value="Synonym_CalcView"/></p> <p>Import and Deploy Cancel</p>

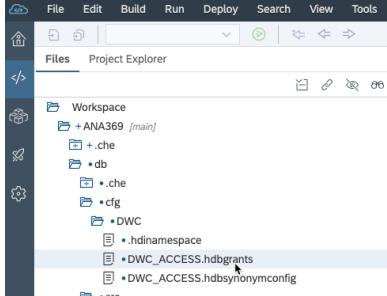
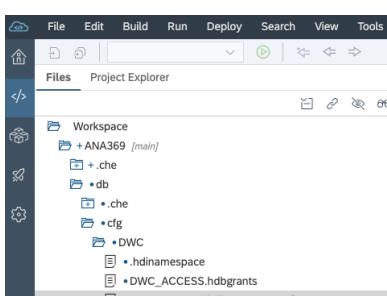
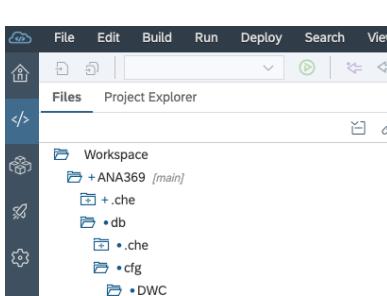
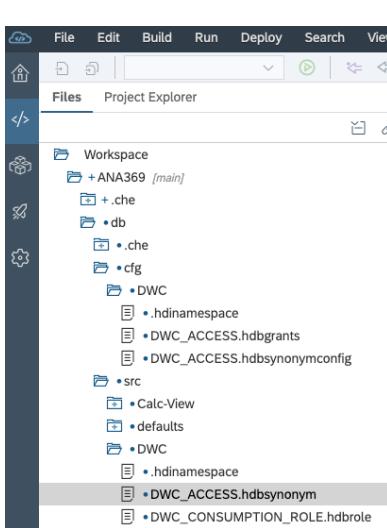
Explanation	Screenshot
13. Create a new graphical view by clicking the deploy button.	
14. In case this validation message comes up please select Deploy Anyway	<p>Validation Messages</p> <p>⚠ Table 'Synonym_CalcView' is being created in the repository...</p> <p>Deploy Anyway Cancel</p>
15. Give it the name HDI CalcView and save it	<p>Save View</p> <p>Business Name: HDI CalcView</p> <p>Technical Name: HDI_CalcView</p> <p>Save Cancel</p>
16. Switch from Sources to the Repository objects and open the tables of the shared objects	
17. Join it with ProductTexts table by dragging it onto the canvas over the Synonym_CalcView and click Join	

Explanation	Screenshot
<p>18. Click on the Join operator</p>  <p>and check in the mapping that the PRODUCTID is mapped in both tables</p>	
<p>19. Select the HDI CalcView</p> 	
<p>20. Change the Type from Relational Dataset to Analytical Dataset in the properties pan on the right</p>	
<p>21. Scroll down to the Attributes and change the following attributes to measures:</p> <p>GROSSAMOUNT NETAMOUNT TAXAMOUNT QUANTITY</p> <p>by clicking on the context menu icon  at each item.</p>	
<p>22. Now you see them in the Measures section</p>	

Explanation	Screenshot																														
23. Deploy the view using the deploy button																															
24. The Deployment Status should change to Deployed after a few moments.	<p>Deployment Status:</p> 																														
25. Check the preview on the HDI CalcView																															
26. If you scroll to the right you will find the product texts for short, medium and long description.	<p>Data Preview: HDI CalcView (1000) Errors </p> <table border="1"> <thead> <tr> <th>SHORT_DESCR</th> <th>MEDIUM_DESCR</th> <th>LONG_DESCR</th> <th>PRODUCTID_1</th> <th>GROSSAMOUNT</th> <th>NETAMOUNT</th> </tr> </thead> <tbody> <tr> <td>Speedeon Cross</td> <td>Speedeon Cross</td> <td>-</td> <td>EB-1137</td> <td>35550.00</td> <td>31600.00</td> </tr> <tr> <td>La Plage Limited</td> <td>La Plage Limited</td> <td>-</td> <td>CB-1162</td> <td>33718.48</td> <td>29972.00</td> </tr> <tr> <td>Rooty Basic</td> <td>Rooty Basic</td> <td>-</td> <td>DB-1081</td> <td>106637.60</td> <td>94789.00</td> </tr> <tr> <td>Mt Discovery Drive</td> <td>Mountain Discovery ...</td> <td>-</td> <td>MB-1032</td> <td>27660.36</td> <td>24587.00</td> </tr> </tbody> </table>	SHORT_DESCR	MEDIUM_DESCR	LONG_DESCR	PRODUCTID_1	GROSSAMOUNT	NETAMOUNT	Speedeon Cross	Speedeon Cross	-	EB-1137	35550.00	31600.00	La Plage Limited	La Plage Limited	-	CB-1162	33718.48	29972.00	Rooty Basic	Rooty Basic	-	DB-1081	106637.60	94789.00	Mt Discovery Drive	Mountain Discovery ...	-	MB-1032	27660.36	24587.00
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LEARN WHAT DESIGN-TIME ARTIFACTS ARE IN YOUR PROJECT

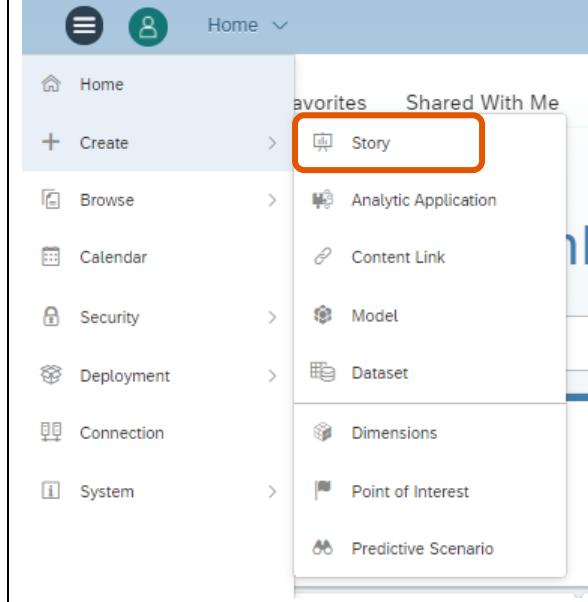
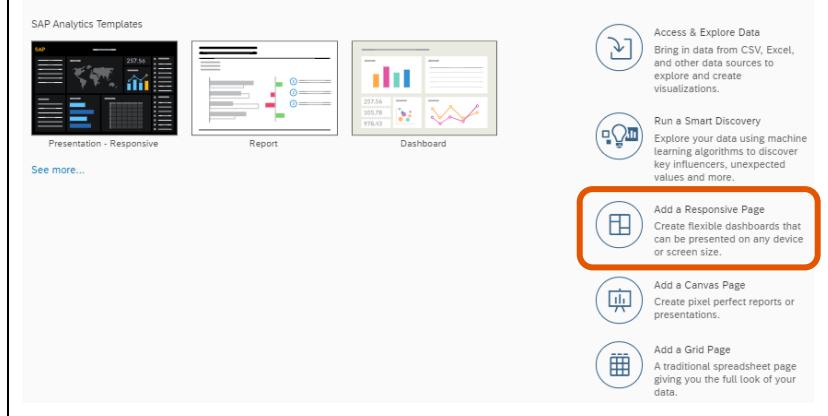
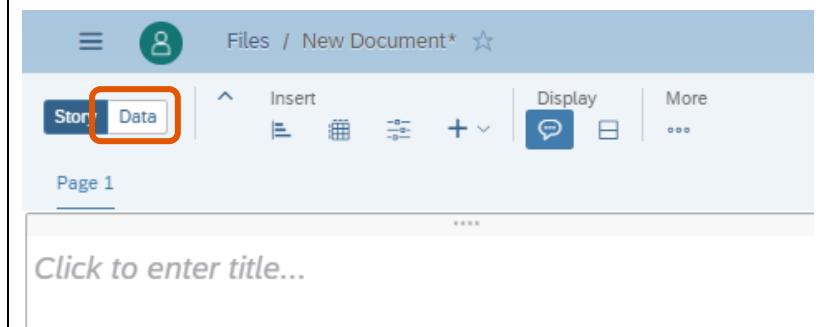
Explanation	Screenshot
<ol style="list-style-type: none"> 1. Navigate to the db/src/Calc-View folder 2. Right mouse-click on the “Synonym-CalcView.hdbcalculationview” file and select Open Calculation View Editor  <ol style="list-style-type: none"> 3. Feel free to view / adjust the basic Calculation View 4. Remember: You need to execute a Build-step to update the Runtime artefact. 	
<ol style="list-style-type: none"> 1. The two .hdbrole files within the db/src/DWC folder are providing the capability to grant project runtime-artefact to the DWC Editors, 2. Navigate to the src/DWC folder 3. Right mouse-click on the “DWC_CONSUMPTION_ROLE.hdbrole” file and select Open Code Editor  <ol style="list-style-type: none"> 4. The Calculation View specified by the “Synonym-CalcView.hdbcalculationview” has been specified to grant access to the DWC Editors. 5. Repeat prev. steps for the “DWC_CONSUMPTION_ROLE_G.hdbrole” file. 6. Feel free to view / adjust the configuration and keep the objects in sync within both .hdbrole files 7. Remember: You need to execute a Build-step to update the Runtime artefact. 	 <pre> 1 < role: [2 "name": "DWC_CONSUMPTION_ROLE", 3 "object_privileges": [4 { 5 "name": "Calc-View::Synonym_CalcView", 6 "type": "View", 7 "privileges_with_grant_option": ["SELECT"] 8 } 9] 10] 11] 12] </pre>

Explanation	Screenshot
<ol style="list-style-type: none"> The two DWC_ACCESS.* files within the db/cfg/DWC folder are defining the exposed DWC-models to be accessed in this Project from the DWC space Navigate to the db/src/cfg/DWC folder Right mouse-click on the "DWC_ACCESS.hdbgrants" file and select Open Code Editor 	 <pre data-bbox="1074 403 1406 762"> 1 { 2 "UPS_ANA369_MASTER": { 3 "object_owner": { 4 "roles": [], 5 "container_roles": [], 6 "object_privileges": [7 { 8 "type": "VIEW", 9 "name": "ANA369_SalesOrderItems", 10 "privileges_with_grant_option": [11 "SELECT" 12] 13 }, 14 { 15 "type": "VIEW", 16 "name": "ANA369_Product", 17 "privileges_with_grant_option": [18 "SELECT" 19] 20 } 21 } 22 } 23 } 24 }</pre>
<ol style="list-style-type: none"> The DWC_ACCESS.hdbgrants file specifies the GRANTS to be created to access the DWC-models exposed from the DWC space via the previous created User-Provided-Service. Pls keep the content of the file unchanged for this exercise. 	 <pre data-bbox="1074 952 1455 1185"> 1 { 2 "ANA369_SalesOrderItems" : { 3 "target": { 4 "schema.configure": "UPS_ANA369_MASTER/schema", 5 "object": "ANA369_SalesOrderItems" 6 } 7 }, 8 "ANA369_Product" : { 9 "target": { 10 "schema.configure": "UPS_ANA369_MASTER/schema", 11 "object": "ANA369_Product" 12 } 13 } 14 }</pre>
<ol style="list-style-type: none"> Right mouse-click on the "DWC_ACCESS.hdbsynonymconfig" file and select Open Code Editor The DWC_ACCESS.hdbsynonymconfig file specifies the Synonym configuration to be created to access the DWC-models exposed from the DWC space via the previous created User-Provided-Service. Pls keep the content of the file unchanged for this exercise. 	 <pre data-bbox="1074 1417 1406 1565"> 1 { 2 "ANA369_SalesOrderItems" : { 3 "object": "ANA369_SalesOrderItems" 4 }, 5 "ANA369_Product" : { 6 "object": "ANA369_Product" 7 } 8 }</pre>
<ol style="list-style-type: none"> The DWC_ACCESS.hdbsynonym files within the db/src/DWC folder are defining the exposed DWC-models to be accessed in this Project from the DWC space Navigate to the db/src/DWC folder Right mouse-click on the "DWC_ACCESS.hdbsynonym" file and select Open Code Editor 	 <pre data-bbox="1074 1417 1406 1565"> 1 { 2 "ANA369_SalesOrderItems" : { 3 "object": "ANA369_SalesOrderItems" 4 }, 5 "ANA369_Product" : { 6 "object": "ANA369_Product" 7 } 8 }</pre>

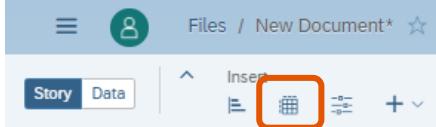
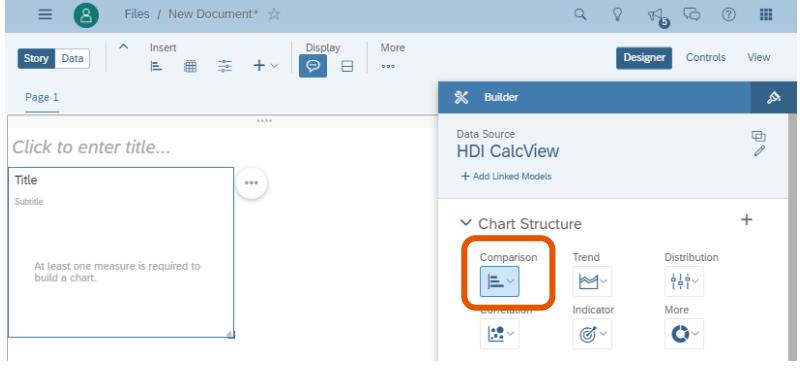
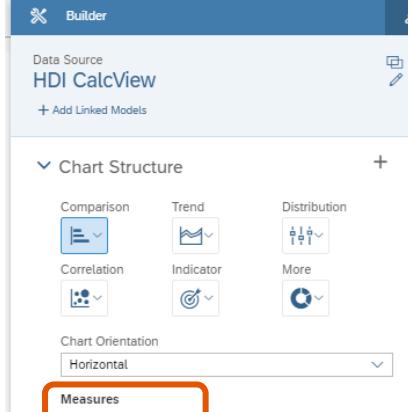
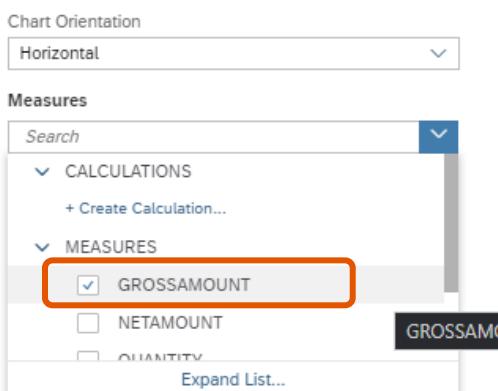
Explanation	Screenshot
<p>the DWC space via the previous created User-Provided-Service. Pls keep the content of the file unchanged for this exercise.</p>	
<p>1. Navigate to the src/Flowgraph folder 2. Right mouse-click on the “Synonym-Flowgraph.hdbflowgraph” file and select Open Flowgraph Editor</p>	
<p>3. Feel free to Execute the Flowgraph</p>	
<p>4. Feel free to view / adjust the basic Flowgraph 5. Remember: You need to execute a Build-step to update the Runtime artefact. 6. Right mouse-click on the “Synonym-Flowgraph.hdbflowgraph” file and select Open HDI Container to access the Runtime Artifacts incl. the table created by the Flowgraph</p>	

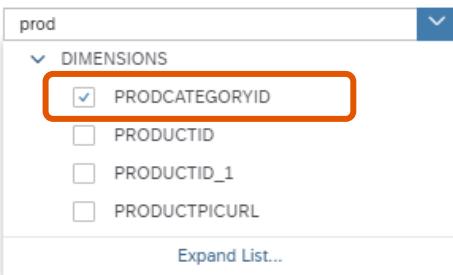
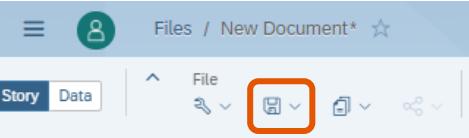
OPTIONAL – BUILD A DASHBOARD USING THE INTEGRATED SAP ANALYTICS CLOUD SYSTEM

Explanation	Screenshot
<p>1. In the SAP Data Warehouse Cloud system, you can navigate to the integrated SAP Analytics Cloud</p>	
<p>2. Use the application switch on the top right-hand side and click on Analytics</p>	
<p>3. This launches the user interface of the integrated SAP Analytics Cloud system</p>	

Explanation	Screenshot
<p>4. In the menu on the top left select</p>  <p>and click Story to launch the Story Builder</p> 	
<p>5. In the next dialog step select Add a Responsive Page from the list on the right</p>	<p>Choose how you'd like to start your story.</p> 
<p>6. Click on the Data button on the left to connect your Data Warehouse Cloud data set</p>	

Explanation	Screenshot
7. Select Data from a data source in the next dialog step	<p>Let's add some data!</p> <p>How would you like to begin?</p>  <p>Data from a data source</p> <p>Cancel</p>
8. Under the Connect to Live Data you select SAP Data Warehouse Cloud	<p>Select a data source</p> <p>Search <input type="text"/> Cancel OK</p> <p>▼ Connect to Live Data</p> <p>Viewing 1 out of 1</p> <p>SAP Data Warehouse Cloud</p> <p>> Acquire Data</p> <p>Data source Type</p> <p><input type="checkbox"/> Cloud</p> <p><input type="checkbox"/> On-Premise</p> <p>Categories</p>
9. Select your own Space ANA369_### where ### is your GROUP ID	<p>Select Your Space</p> <p>Name</p> <p>Select Space <input type="text"/></p> <p>ANA369_999</p> <p>ANA369_MASTER</p>
10. Click OK	<p>OK</p>
11. Select your Analytical View HDI CalcView	<p>Select Your Data</p> <p>Name</p> <p><input type="text"/></p> <p>ANA369_SalesOrderItems</p> <p>HDI CalcView</p> <p>OK Cancel</p>

Explanation	Screenshot
12. Click OK	
13. Insert a Chart	
14. Use the default setting for a Comparison chart	
15. Add a Measure in the lower part of the builder pane on the right	
16. Select GROSSAMOUNT	

Explanation	Screenshot									
17. Add a Dimension	<p>Dimensions</p> <p>+ Add Dimension</p>									
18. Select PRODCATEGORYID	<p>Dimensions</p>  <p>+ Add Filters</p>									
19. Save your Story										
20. Name it HDI Dashboard	<p>Save</p> <p>Analytics Cloud</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Description</th> <th>Owner</th> </tr> </thead> <tbody> <tr> <td>Public</td> <td>Public</td> <td>-</td> </tr> <tr> <td>Samples</td> <td>Samples</td> <td>-</td> </tr> </tbody> </table> <p>*Name: HDI Dashboard</p> <p>Description: <i>Optional</i></p> <p>OK Cancel</p>	Name	Description	Owner	Public	Public	-	Samples	Samples	-
Name	Description	Owner								
Public	Public	-								
Samples	Samples	-								
21. Click OK										
22. You can further create charts, tables and other objects into your dashboard as you like.										

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