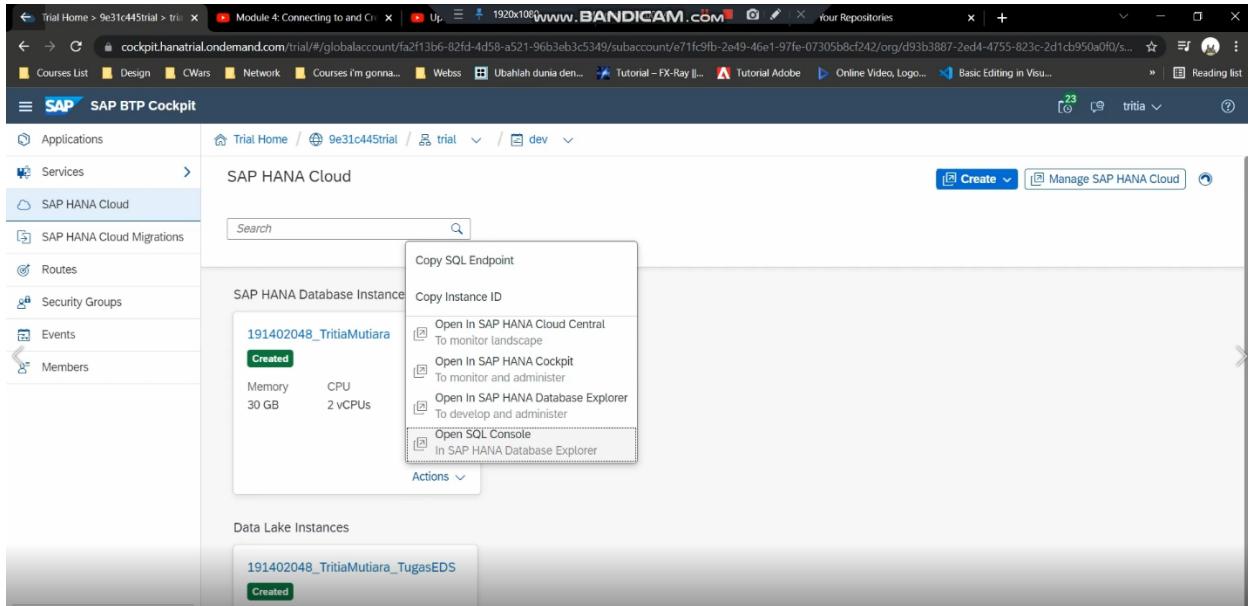


Nama : Tritia Mutiara

Nim : 191402048

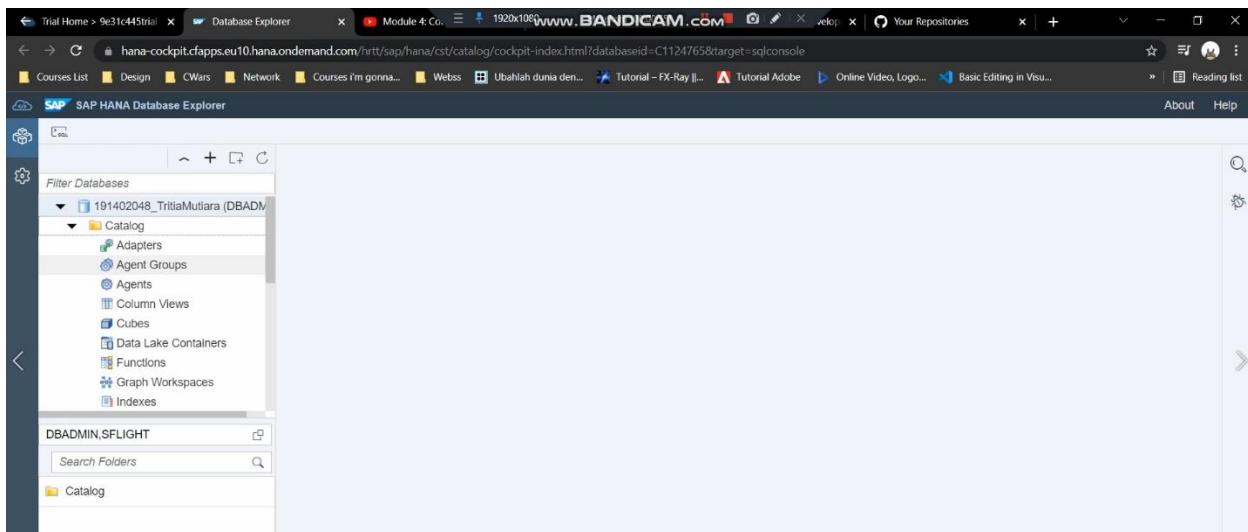
- Module 4: Menghubungkan dan Membuat Data di SAP HANA Cloud Data Lake

1. Pada bagian SAP HANA Database Instance kita klik actions kemudian klik Open SQL Console



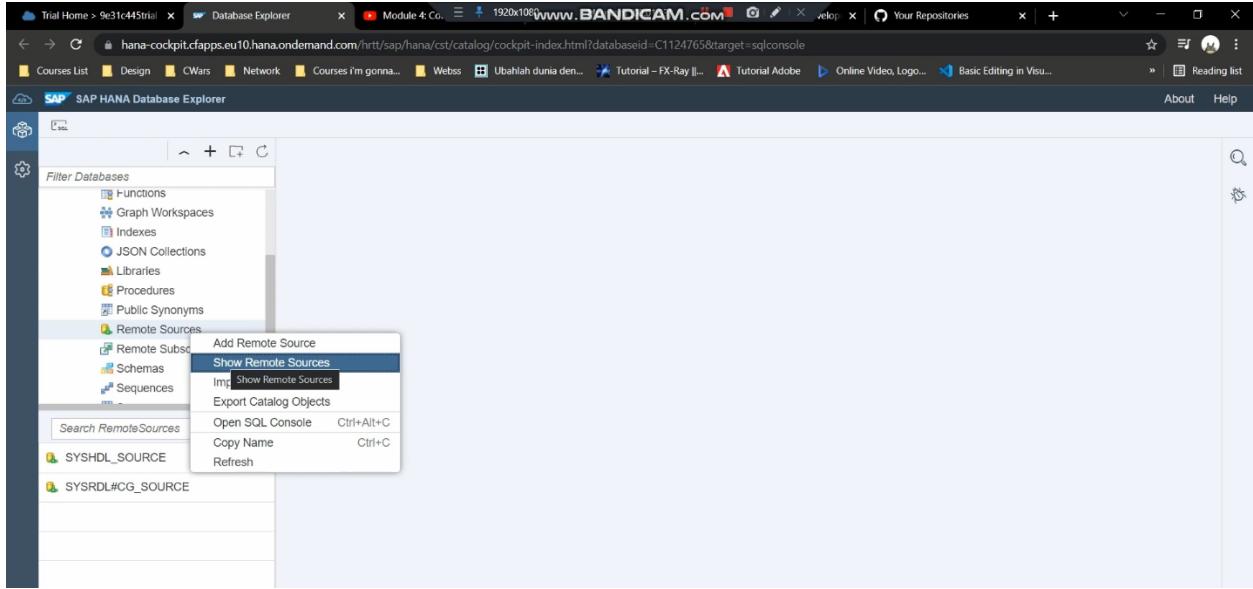
The screenshot shows the SAP BTP Cockpit interface. On the left, there's a sidebar with various service icons like Applications, Services, SAP HANA Cloud, etc. The main area is titled 'SAP HANA Cloud'. It lists a single instance named '191402048_TritiaMutiara' which was 'Created' recently. This instance has 30 GB of Memory and 2 vCPUs. A context menu is open over this instance, showing options like 'Copy SQL Endpoint', 'Copy Instance ID', and several 'Open In' options. The 'Open SQL Console' option is highlighted with a dashed border. Below the instance list, there's a section for 'Data Lake Instances' containing one entry: '191402048_TritiaMutiara_TugasEDS'.

2. Kita akan dibawa ke SAP HANA Database Explorer. Pada pertemuan sebelumnya saya sudah membuat tabel sehingga sekarang kita langsung ke catalog.

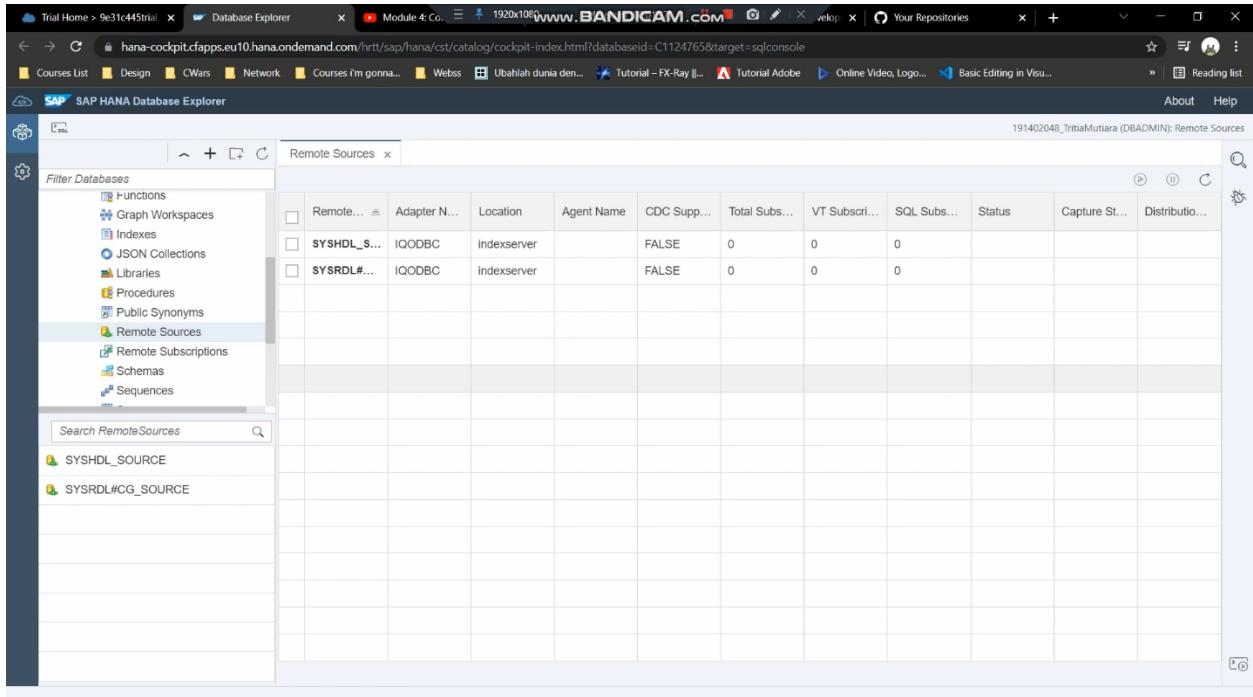


The screenshot shows the SAP HANA Database Explorer interface. On the left, there's a tree view of database objects under '191402048_TritiaMutiara (DBADM)'. The 'Catalog' node is expanded, showing sub-items like Adapters, Agent Groups, Agents, Column Views, Cubes, Data Lake Containers, Functions, Graph Workspaces, and Indexes. At the bottom of the left sidebar, there's a search bar labeled 'Search Folders' and a 'Catalog' button. The main pane is currently empty, showing a light gray background.

3. Kemudian kita klik kanan Remote Sources dan Show Remote Sources seperti berikut



4. Koneksi pada data lake sudah otomatis dibuat seperti berikut



5. Jika kita klik akan seperti ini dan pada bagian Schema kita pilih SYSRDL#CG

The screenshot shows the SAP HANA Database Explorer interface. The left sidebar has a 'Filter Databases' tree with options like Graph workspaces, Indexes, JSON Collections, Libraries, Procedures, Public Synonyms, Remote Sources, Remote Subscriptions, Schemas, Sequences, and Synonyms. Under 'Remote Sources', two entries are listed: SYSHDL_SOURCE and SYSRDL#CG_SOURCE. The main panel is titled 'SYSRDL#CG_SOURCE' and shows details: Adapter Name: IQODBC, Source Location: indexserver. Below this are fields for Database (<NULL>), Schema: SYSRDL#CG, Object: (empty), and Type: ANY. A 'Search' button is at the top right. A table below shows 'Remote Objects (3)' with columns Database, Schema, Object, and Type. The objects listed are <NULL>, SYSRDL#CG, EVENT, TABLE; <NULL>, SYSRDL#CG, GKG, TABLE; and <NULL>, SYSRDL#CG, MENTIONS, TABLE.

6. Kemudian kita klik search dan akan muncul tabel sebagai berikut

This screenshot is identical to the one above, showing the SAP HANA Database Explorer interface for the SYSRDL#CG_SOURCE remote source. The 'Search' button has been clicked, and the results are displayed in the 'Remote Objects (3)' table. The table lists three objects: EVENT, GKG, and MENTIONS, all of which are TABLE types and belong to the SYSRDL#CG schema.

7. Kemudian kita select all Database dan klik Create Virtual Object

SAP HANA Database Explorer

Remote Sources x SYSRDL#CG_SOURCE x

SYSRDL#CG_SOURCE

Adapter Name: IQODBC
Source Location: indexserver

Database: <NULL> Schema: SYSRDL#CG Object: ANY Type:

Remote Objects (3)

Database	Schema	Object	Type
<NULL>	SYSRDL#CG	EVENT	TABLE
<NULL>	SYSRDL#CG	GKG	TABLE
<NULL>	SYSRDL#CG	MENTIONS	TABLE

Create Virtual Object(s)

8. Kita akan diminta untuk memasukkan nama dan pastikan kita pilih Schema SFLIGHT

Create Virtual Objects

Enter a prefix for object names and select target schema

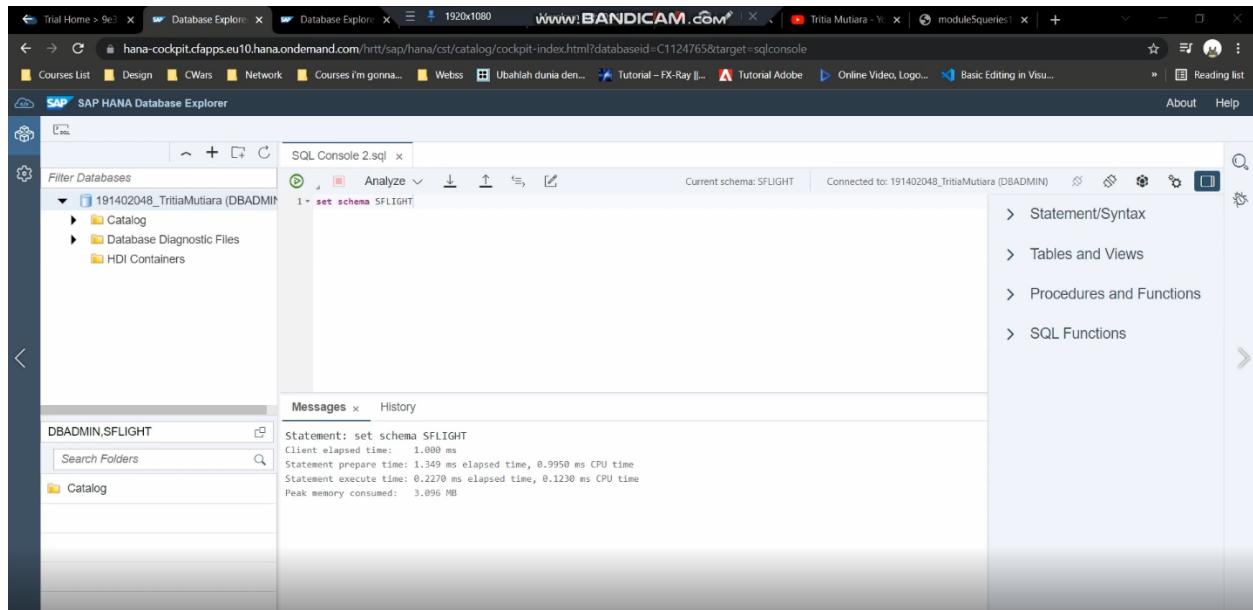
Object Names Prefix: HCDL_

Schema: DBADMIN
PAL_STEM_SCHEMA
SAP_PA_APL
SFLIGHT
SYS
SYSHDL
SYSHDL_MANAGER
SYSHDL_MANAGERROTATOR
SYSHDL_VTCREATOR

Create Cancel

9. Selesai

- Module 5: Query Data di SAP HANA Cloud



SAP HANA Database Explorer

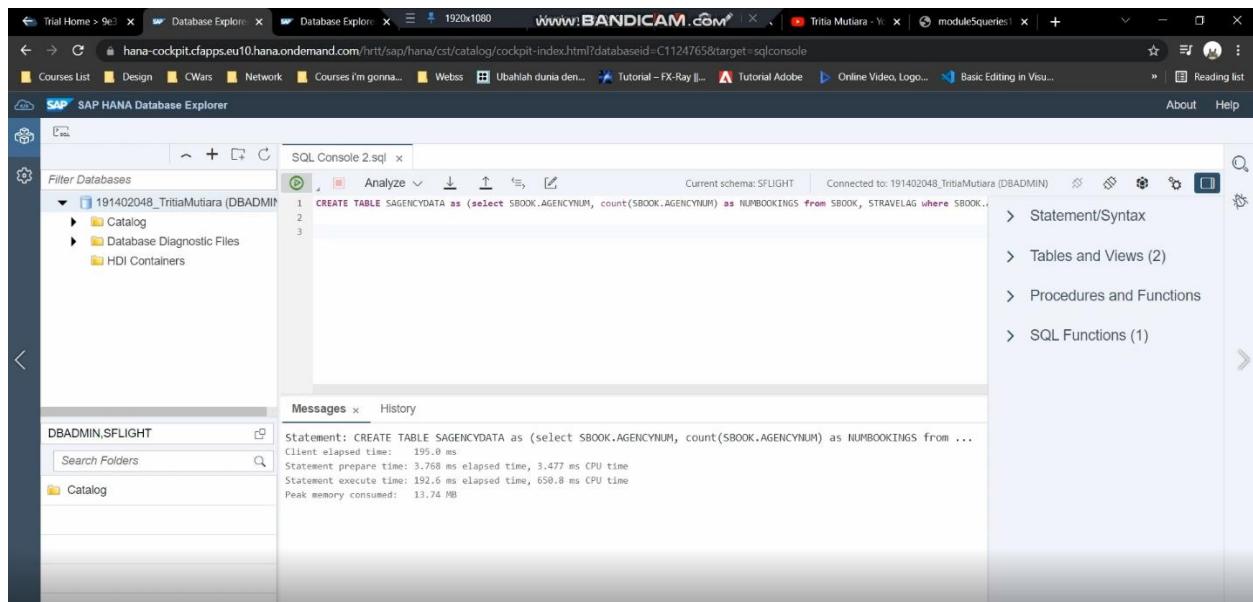
SQL Console 2.sql

```
1+ set schema SFLIGHT
```

Current schema: SFLIGHT Connected to: 191402048_TritiaMutiarra (DBADMIN)

Messages x History

Statement: set schema SFLIGHT
Client elapsed time: 1.000 ms
Statement prepare time: 1.349 ms elapsed time, 0.9950 ms CPU time
Statement execute time: 0.2270 ms elapsed time, 0.1130 ms CPU time
Peak memory consumed: 3.096 MB



SAP HANA Database Explorer

SQL Console 2.sql

```
1 CREATE TABLE SAGENCYDATA as (select SBOOK.AGENCYNUM, count(SBOOK.AGENCYNUM) as NUMBOOKINGS from SBOOK, STRAVELAG where SBOOK...
```

Current schema: SFLIGHT Connected to: 191402048_TritiaMutiarra (DBADMIN)

Messages x History

Statement: CREATE TABLE SAGENCYDATA as (select SBOOK.AGENCYNUM, count(SBOOK.AGENCYNUM) as NUMBOOKINGS from ...
Client elapsed time: 195.0 ms
Statement prepare time: 3.768 ms elapsed time, 3.477 ms CPU time
Statement execute time: 192.6 ms elapsed time, 650.8 ms CPU time
Peak memory consumed: 13.74 MB

SAP HANA Database Explorer

SQL Console 2.sql

```
1+ SELECT * FROM SAGENCYDATA
```

Result

	AGENCYNUM	NUMBOOKINGS
1	00000284	27870
2	00000122	27869
3	00000109	27867
4	00000101	27866
5	00000118	27416
6	00000087	25936
7	00000284	26206

SAP HANA Database Explorer

SQL Console 2.sql

```
1+ SELECT TOP 5 SAGENCYDATA.AGENCYNUM, STRAVELAG.NAME, SAGENCYDATA.NUMBOOKINGS FROM SAGENCYDATA INNER JOIN STRAVELAG ON SAGENCYDA
```

Result

	AGENCYNUM	NAME	NUMBOOKINGS
1	00000284	Rainy, Stormy, Cloudy	27870
2	00000122	Fly Low	27869
3	00000109	Kangeroos	27867
4	00000101	Bella Italia	27866
5	00000118	Asia By Plane	27416

SAP HANA Database Explorer

SQL Console 2.sql

```
CREATE TABLE STOPAGENCY AS (SELECT TOP 5 SAGENCYDATA.AGENCYNUM, STRAVELAG.NAME, SAGENCYDATA.NUMBOOKINGS FROM SAGENCYDATA INNER
```

Messages

```
Statement: CREATE TABLE STOPAGENCY AS (SELECT TOP 5 SAGENCYDATA.AGENCYNUM, ...
Client elapsed time: 31.00 ms
Statement prepare time: 3.896 ms elapsed time, 3.346 ms CPU time
Statement execute time: 29.39 ms elapsed time, 27.02 ms CPU time
Peak memory consumed: 6,283 MB
```

SAP HANA Database Explorer

SQL Console 2.sql

```
1+ SELECT * FROM STOPAGENCY
```

Result

	AGENCYNUM	NAME	NUMBOOKINGS
1	00000284	Rainy, Stormy, Cloudy	27870
2	00000122	Fly Low	27869
3	00000109	Kangeroos	27867
4	00000101	Bella Italia	27866
5	00000118	Asia By Plane	27416

SAP HANA Database Explorer

SQL Console 2.sql

```
CREATE TABLE SAGBOOKDAYS AS (select AGENCYNUM, dayname(ORDER_DATE) AS ORDERDAY, count(dayname(ORDER_DATE)) AS DAYCOUNT FROM SFLIGHT)
```

Messages

Statement: CREATE TABLE SAGBOOKDAYS AS (select AGENCYNUM, dayname(ORDER_DATE) AS ORDERDAY, ...
Client elapsed time: 326.0 ms
Statement prepare time: 4.717 ms elapsed time, 4.189 ms CPU time
Statement execute time: 324.7 ms elapsed time, 1.241 s CPU time
Peak memory consumed: 23.89 MB

SAP HANA Database Explorer

SQL Console 2.sql

```
SELECT * FROM SAGBOOKDAYS
```

Result

	AGENCYNUM	ORDERDAY	DAYCOUNT
1	00000121	SATURDAY	3406
2	00000087	SATURDAY	3708
3	00000301	FRIDAY	3523
4	00000124	FRIDAY	3476
5	00000152	THURSDAY	2734
6	00000222	SUNDAY	2849
7	00000101	SATURDAY	4001

The screenshot shows the SAP HANA Database Explorer interface. In the top navigation bar, there are tabs for Trial Home, Database Explorer, and a search bar. The main area is titled "SAP HANA Database Explorer" and contains a "SQL Console" tab with the file name "SQL Console 2.sql". Below this is a tree view under "Filter Databases" for the database "191402048_TritiaMutaria (DBADMIN)", showing Catalog, Database Diagnostic Files, and HDI Containers. To the right of the tree view is a "Result" table showing five rows of data from a query. The table has columns: AGENCYNUM, NAME, ORDERDAY, and DAYCOUNT. The data is as follows:

	AGENCYNUM	NAME	ORDERDAY	DAYCOUNT
1	00000122	Fly Low	THURSDAY	4037
2	00000109	Kangeroos	THURSDAY	4095
3	00000101	Bella Italia	THURSDAY	4038
4	00000118	Asia By Plane	TUESDAY	4004
5	00000284	Rainy, Stormy, Cloudy	MONDAY	4108

On the far right, there is a sidebar with sections for Statement/Syntax, Tables and Views (2), Procedures and Functions, and SQL Functions (1).

- Module 6: Mengatur Project HANA Pertama Kita di SAP Business Application Studio

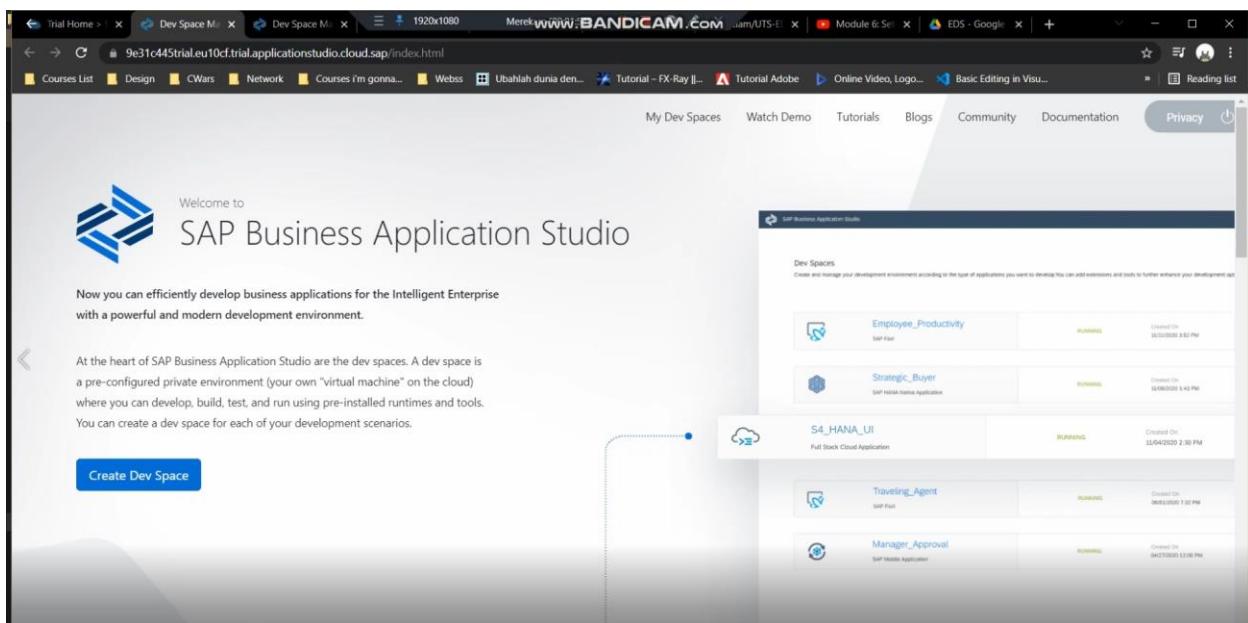
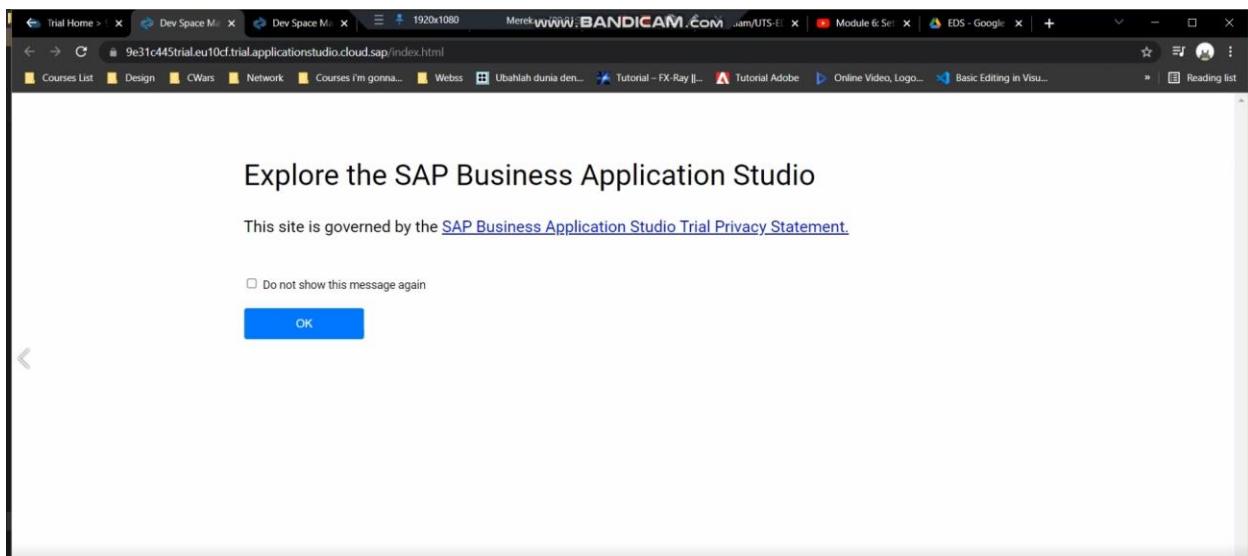
The screenshot shows the SAP BTP Cockpit interface. The left sidebar includes links for Account Explorer, Resource Providers, Boosters, System Landscape, Entitlements, and Usage Analytics. The main content area displays "Global Account: 9e31c445trial - Account Explorer". It shows "All: 0 directories, 1 subaccounts | Subdomain: 9e31c445trial-ga". There is a "Create" button and links for "Switch Global Account" and "Delete Trial Account". Below this, the "Subaccounts" tab is selected, showing a single entry named "trial". The details for "trial" are listed as follows:

- Provider: Amazon Web Services (AWS)
- Region: Europe (Frankfurt)
- Environment: Multi-Environment

At the bottom, there is a note: "Learn how global accounts and subaccounts relate to each other and find recommendations for setting up your account model."

The screenshot shows the SAP BTP Cockpit interface for a subaccount named 'trial'. The left sidebar has 'Instances and Subscriptions' selected under 'Services'. The main content area displays the 'Subaccount: trial - Overview' page. It includes tabs for General, Cloud Foundry Environment, Kyma Environment, and Entitlements. Key statistics shown are 78 Entitlements and 5 Instances and Subscriptions. Detailed information includes Subdomain: 9e31c445trial, Tenant ID: e71fc9fb-2e49-46e1-97fe-07305b8cf242, Subaccount ID: e71fc9fb-2e49-46e1-97fe-07305b8cf242, Provider: Amazon Web Services (AWS), Region: Europe (Frankfurt), and various creation and modification dates/times.

The screenshot shows the SAP BTP Cockpit interface for the same subaccount 'trial'. The left sidebar has 'Instances and Subscriptions' selected under 'Services'. The main content area displays the 'Subaccount: trial - Instances and Subscriptions' page. It shows 5 instances and 1 subscription. A search bar and filters for 'All Services', 'All Plans', and 'All Statuses' are available. The 'Subscriptions' section lists one entry: SAP Business Application Studio with Plan trial, created on 15 Sep 2021, and status 'Subscribed'. The 'Instances' section lists three entries: SAP Business Application Studio, SAP Cloud Platform Data Intelligence, and SAP Cloud Platform Data Intelligence, all with status 'Subscribed'.



SAP Business Application Studio

Create a New Dev Space

Travel ✓

What kind of application do you want to create?

- Full Stack Cloud Application
- SAP HANA Native Application
- SAP Mobile Application
- Basic

SAP HANA Native Application Dev Space
Build and deploy native SAP HANA applications or analytical models. This dev space contains a comprehensive set of editors to support the creation of database artifacts (calculation views, tables, SQLScript procedures, and more), as well as tools to enable an end-to-end development flow from project creation to the deployment to the SAP Cloud Platform.

SAP Predefined Extensions
The following extensions are enabled by default.

- MTA Tools**
Allows you to perform operations such as build, deployment, and validation on multitarget applications...

- Basic SAP version of Theia IDE**
Allows you to use basic IDE functionality such as: code editors, split view, dynamic layout, file management...

- SAP HANA Smart Data Integration Tools**
Allows you to do data federation, replication and transformation in SAP HANA. The extension includes...


Additional SAP Extensions
Select additional extensions to enhance your space.

- HTML**  **HTML5 Runner**
Allows you to locally run HTML5 applications. Includes the HTML5 application runner and run configurations.
-  **HTML5 Application Template**
Allows you to create an HTML5 application, using a template wizard.
-  **Java Tools**
Allows you to develop and run Java applications. It includes debugging capabilities, enhanced co...

SAP Business Application Studio

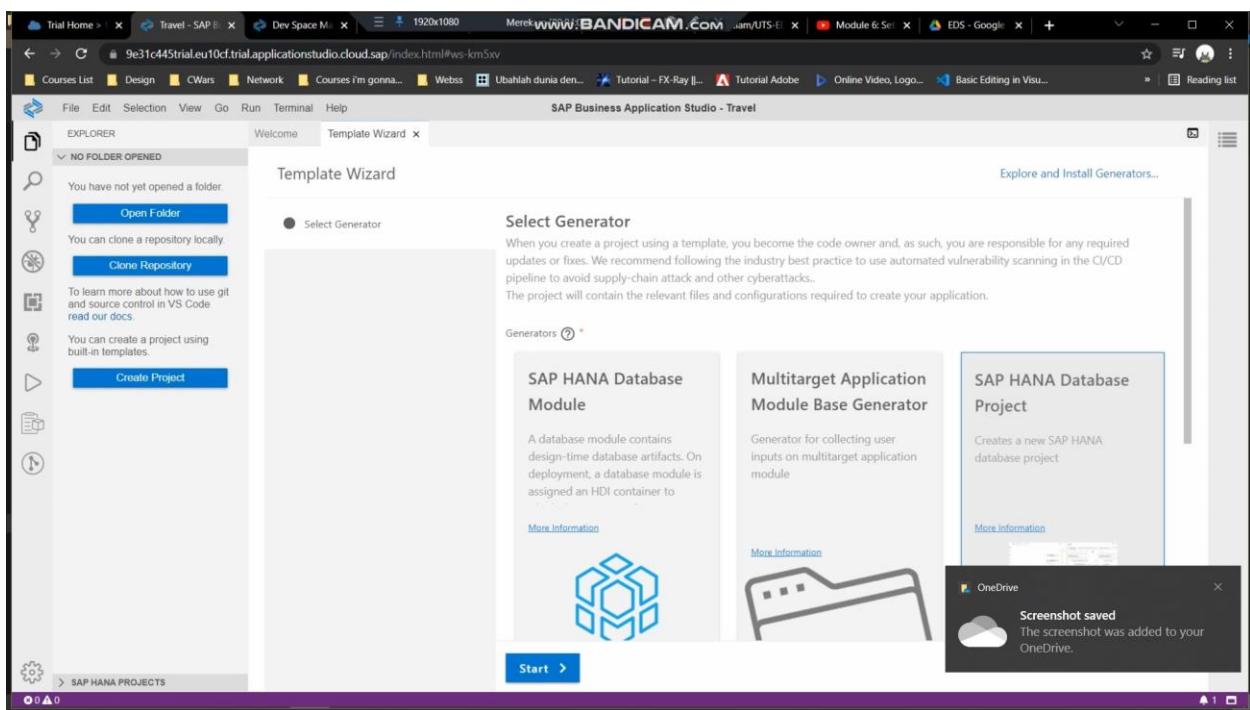
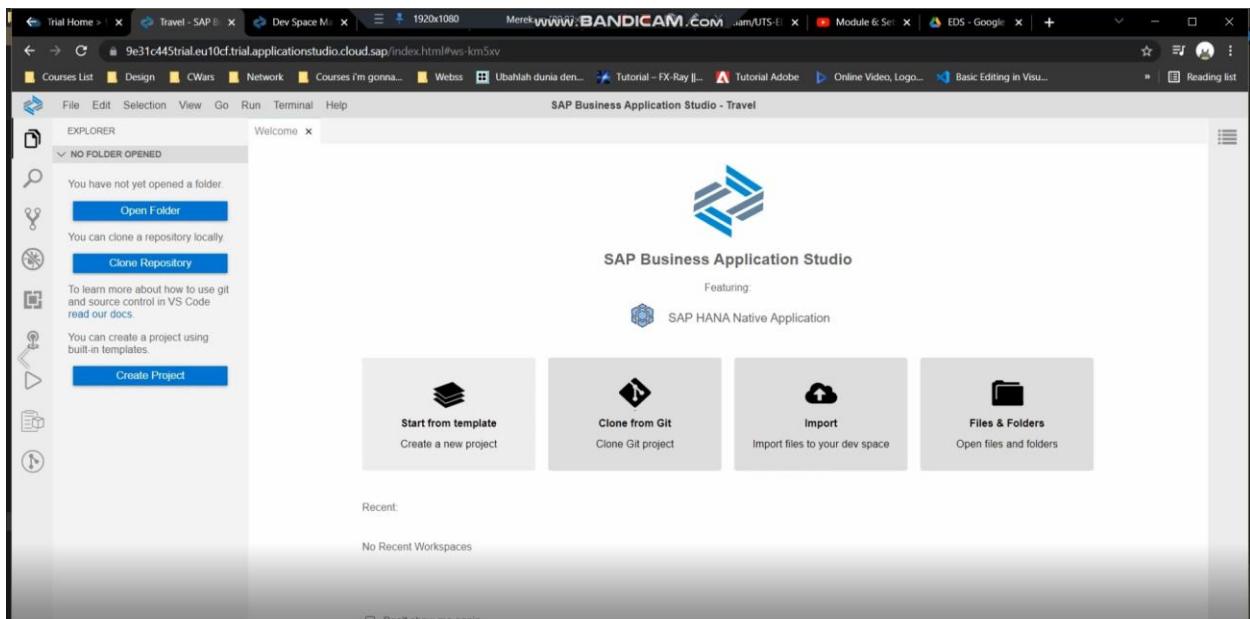
Dev Spaces

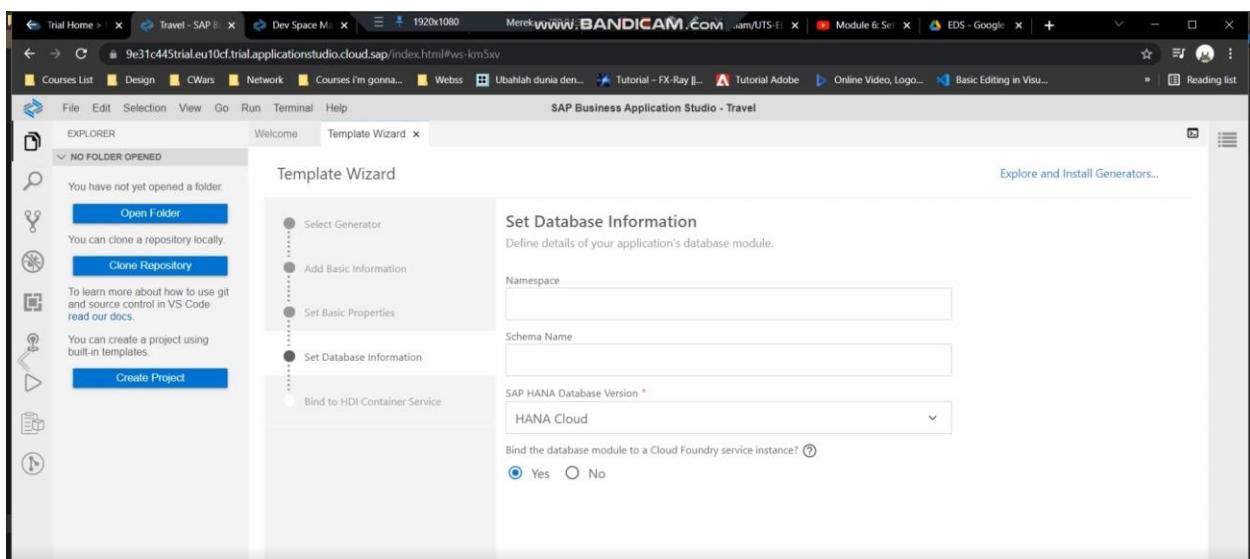
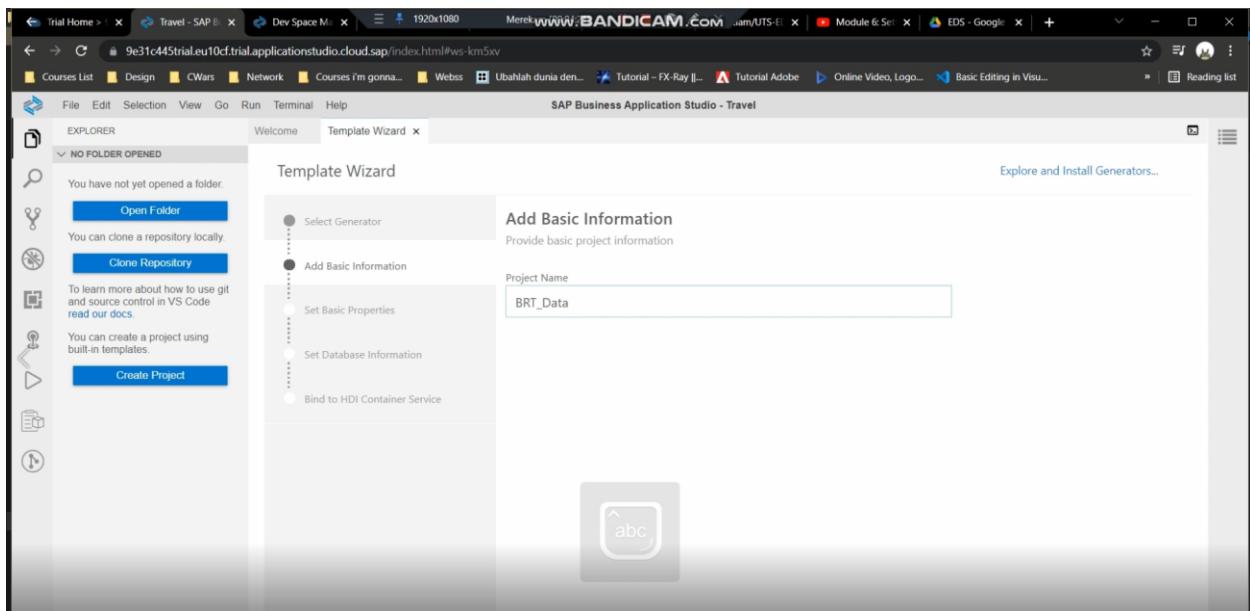
Create and manage your development environment according to the type of applications you want to develop.
You can add extensions and tools to further enhance your development options.

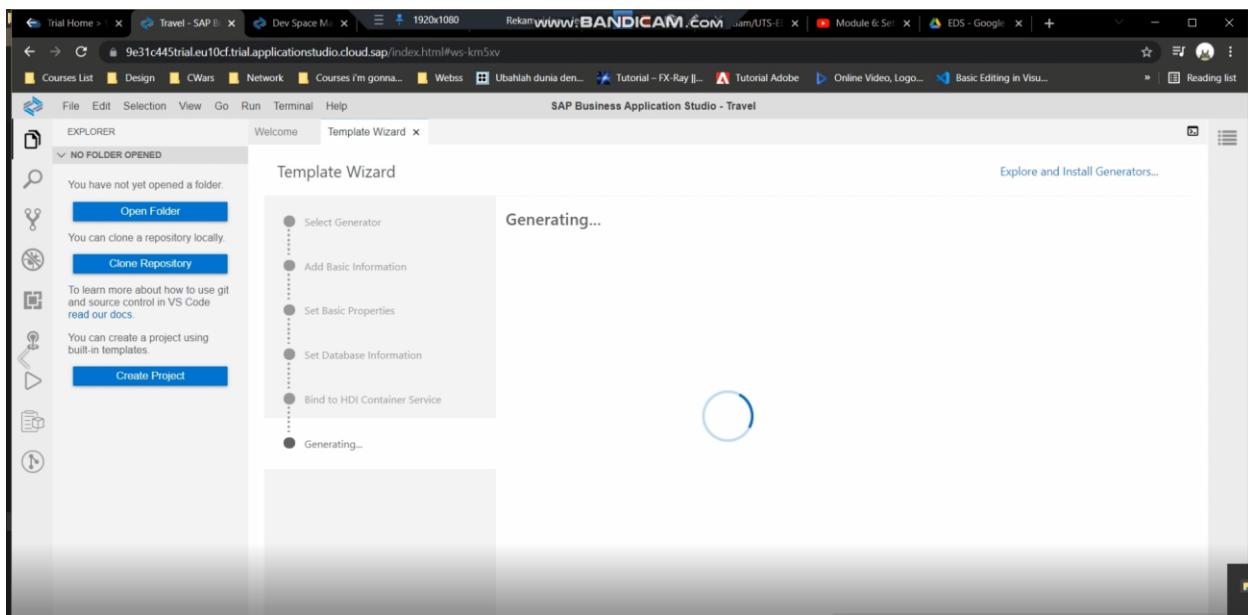
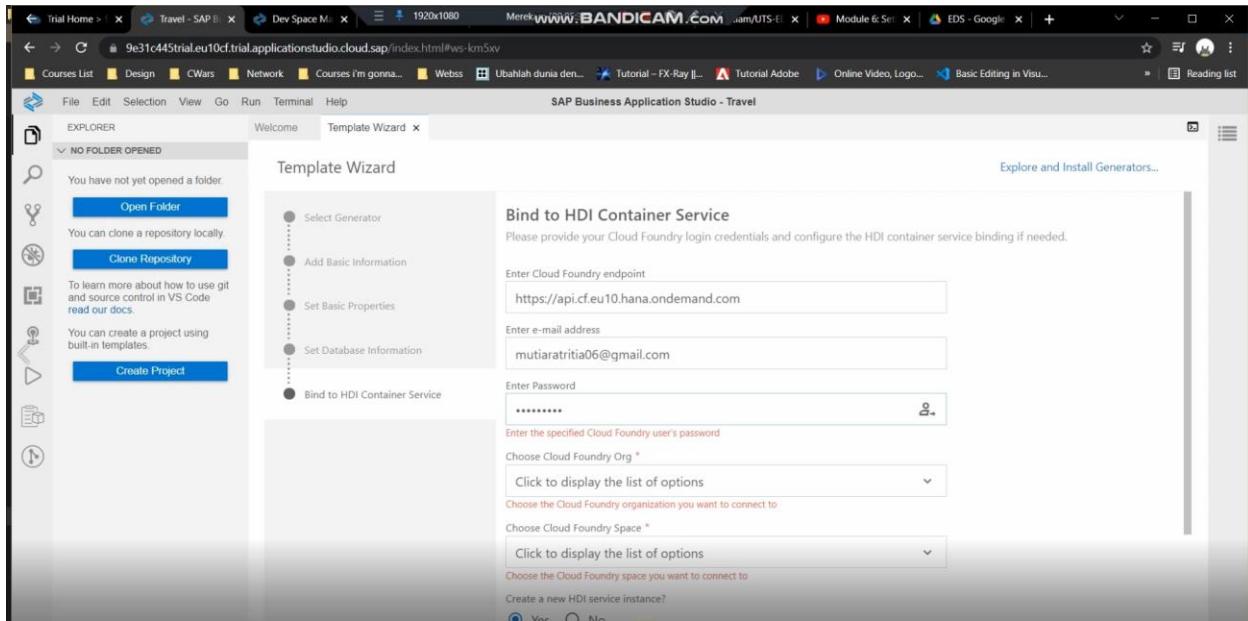
You're using a trial version. Any dev space that hasn't been running for 30 days will be deleted. See the full list of restrictions.

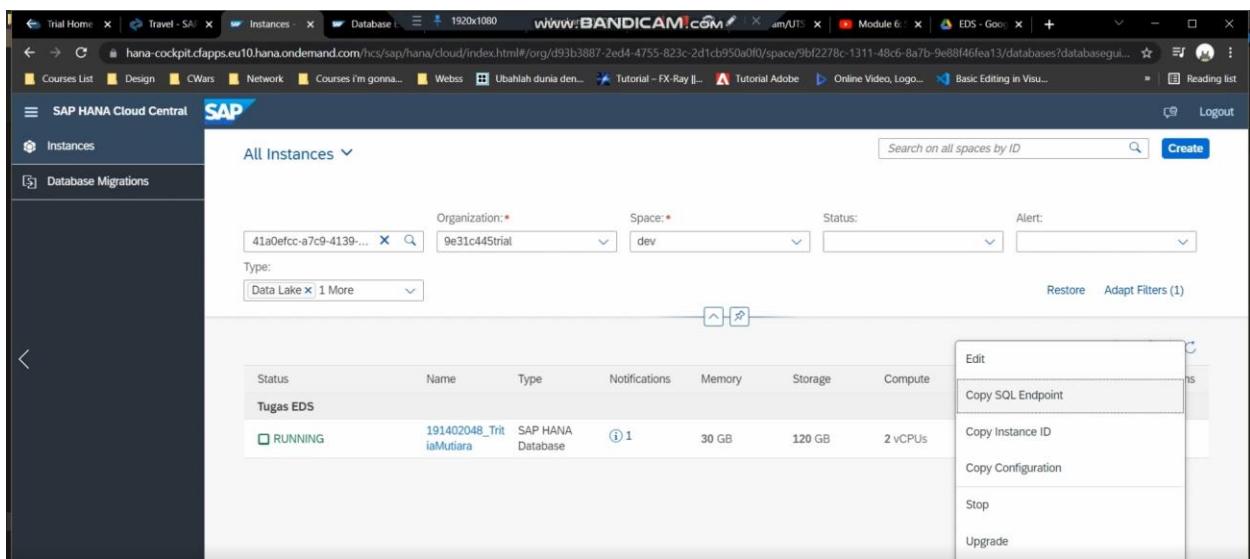
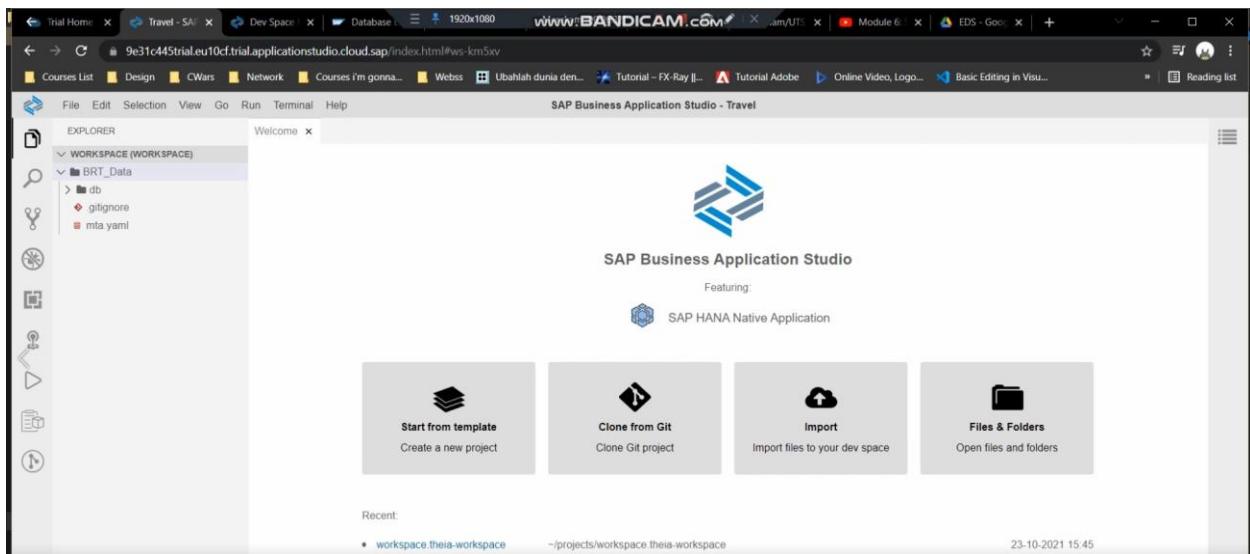
Create Dev Space

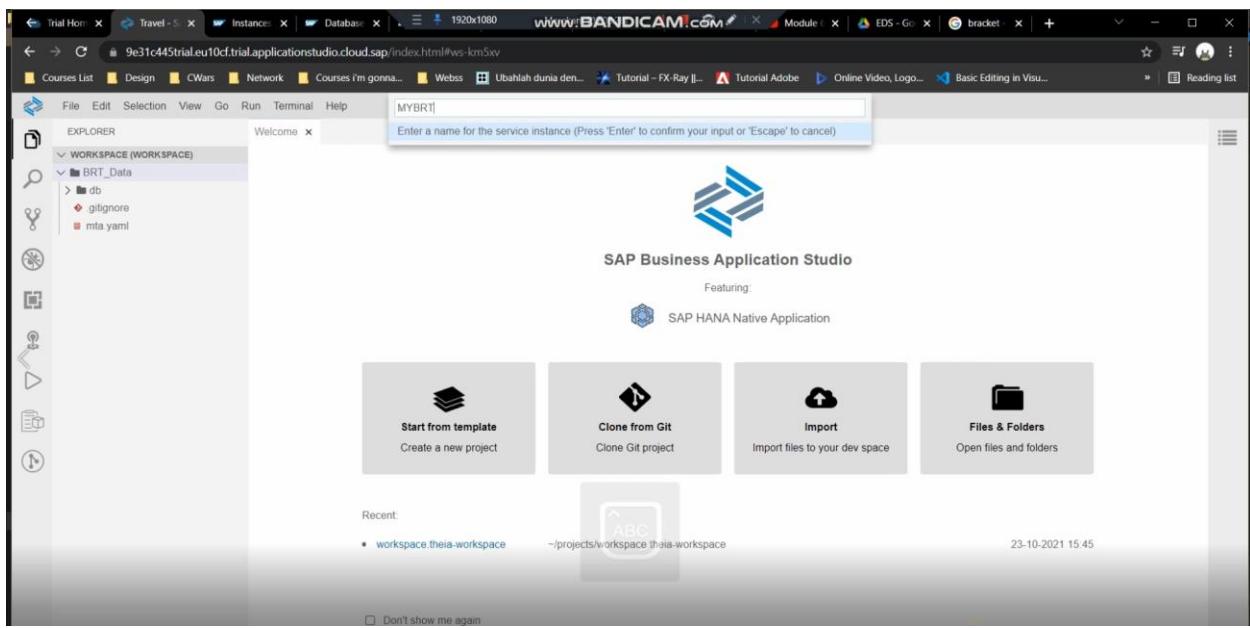
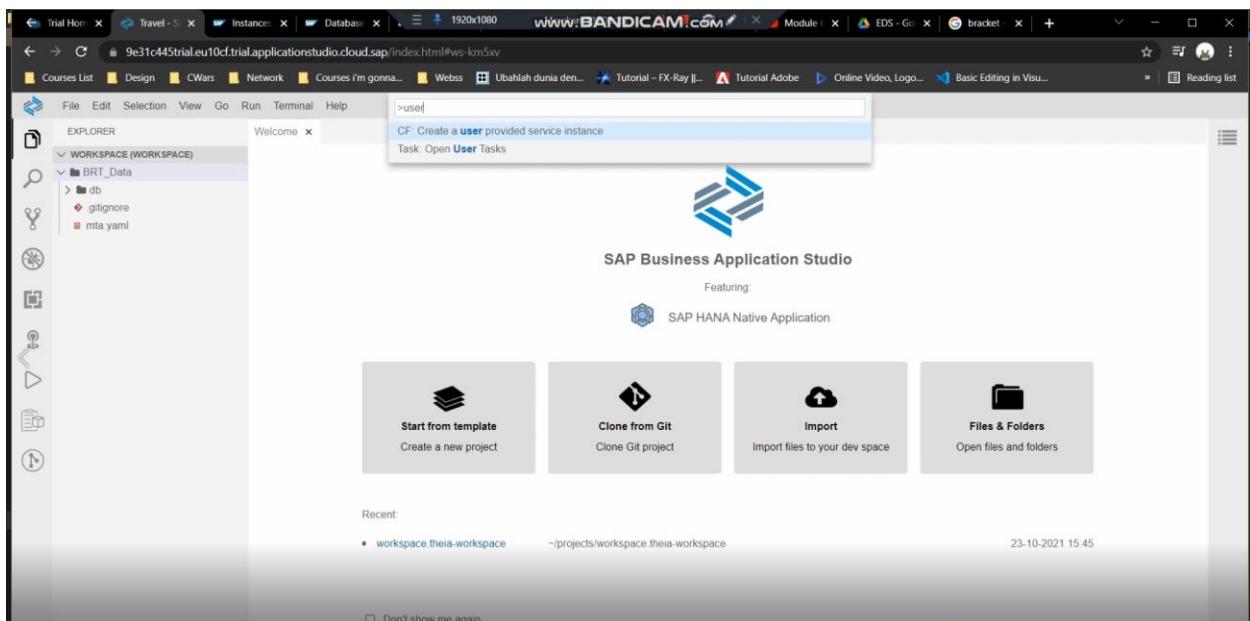
Travel	RUNNING	Created On 10/23/2021 3:33 PM	ID ws-km5xv	Disk Usage 16 MB / 3.9 GB				
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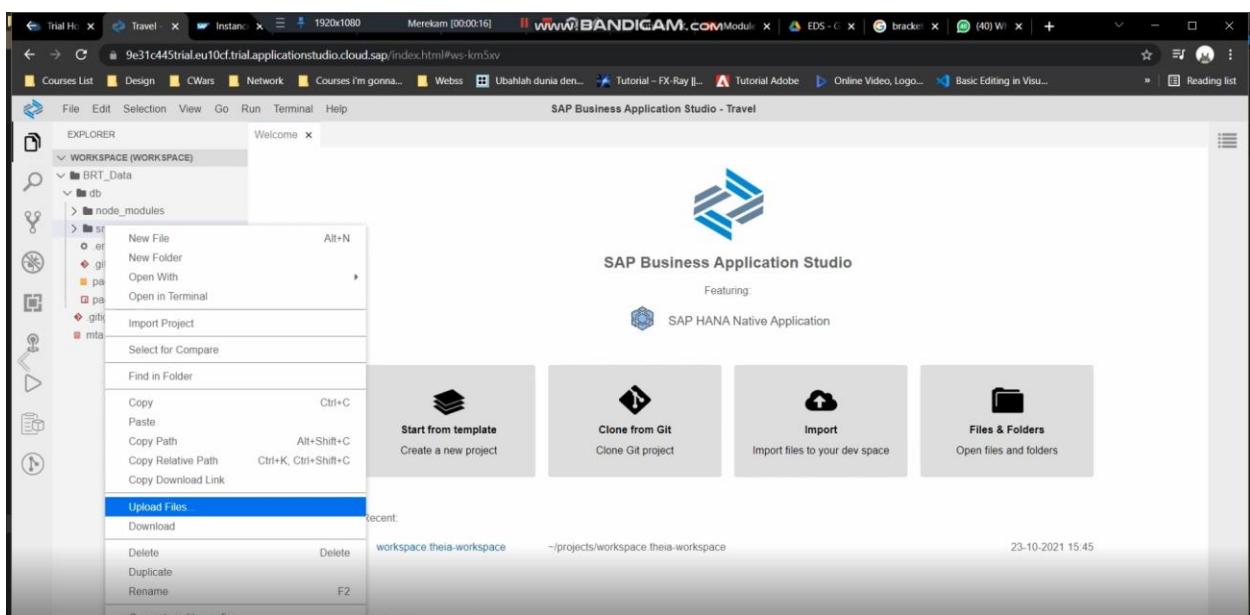
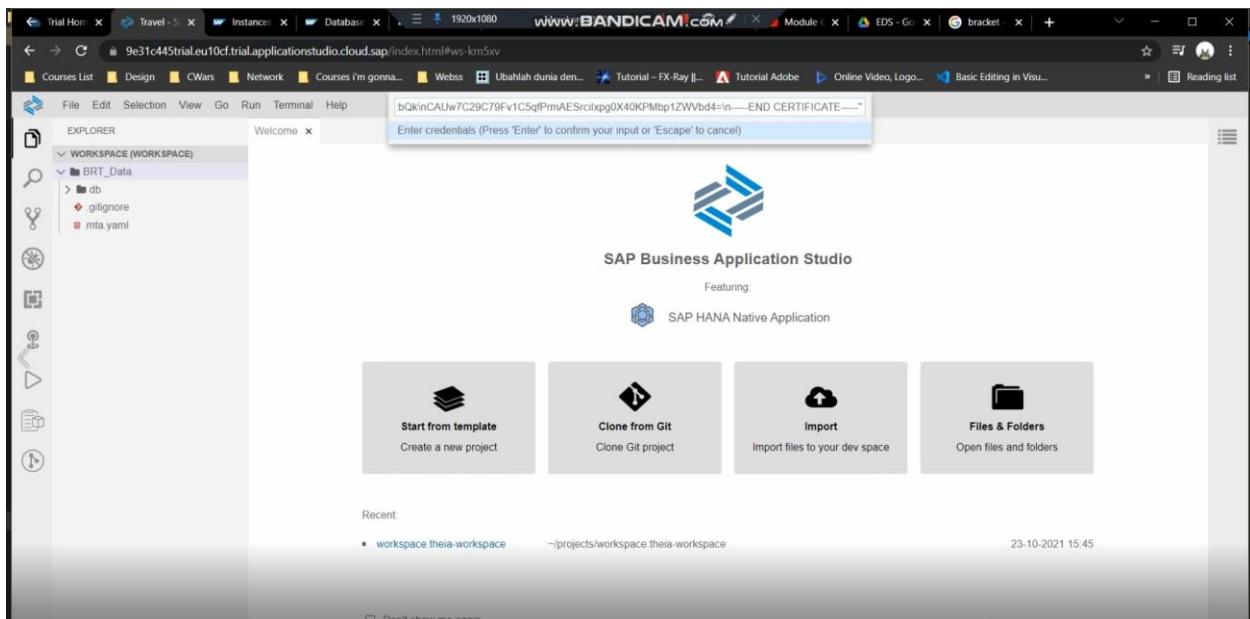


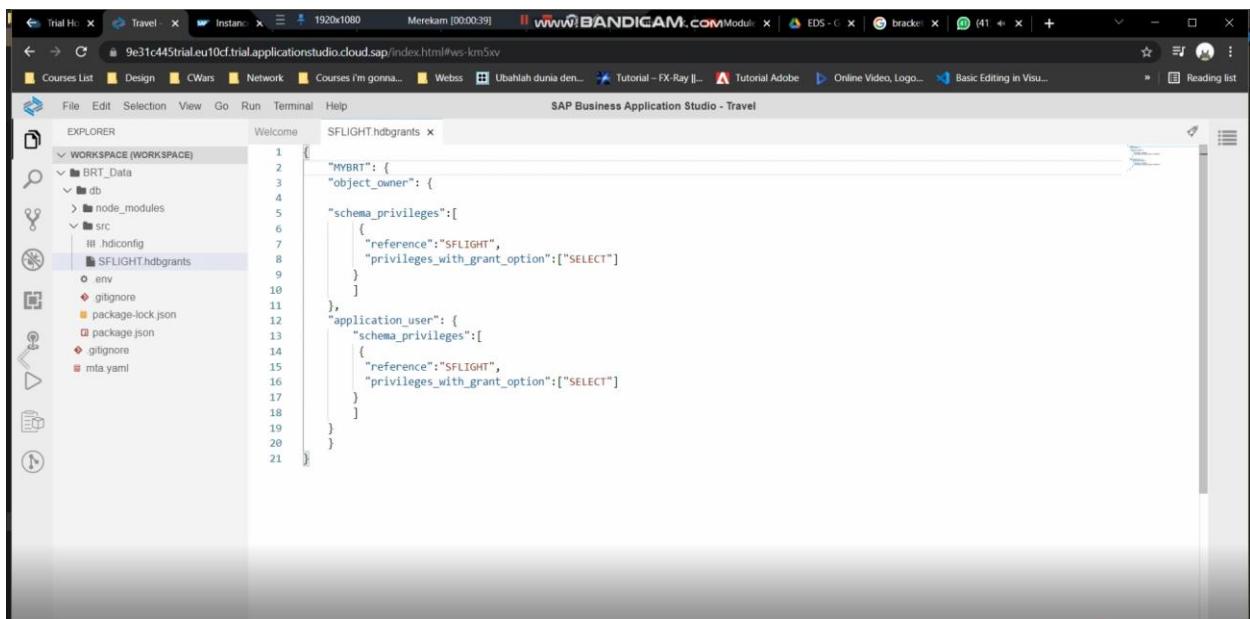
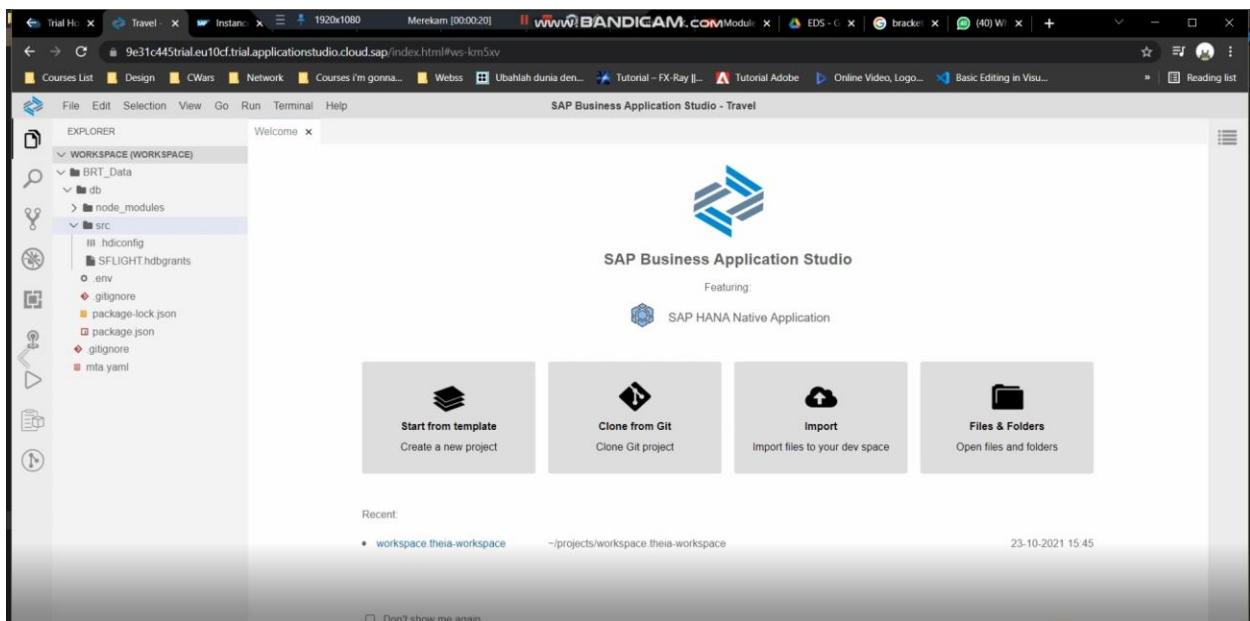


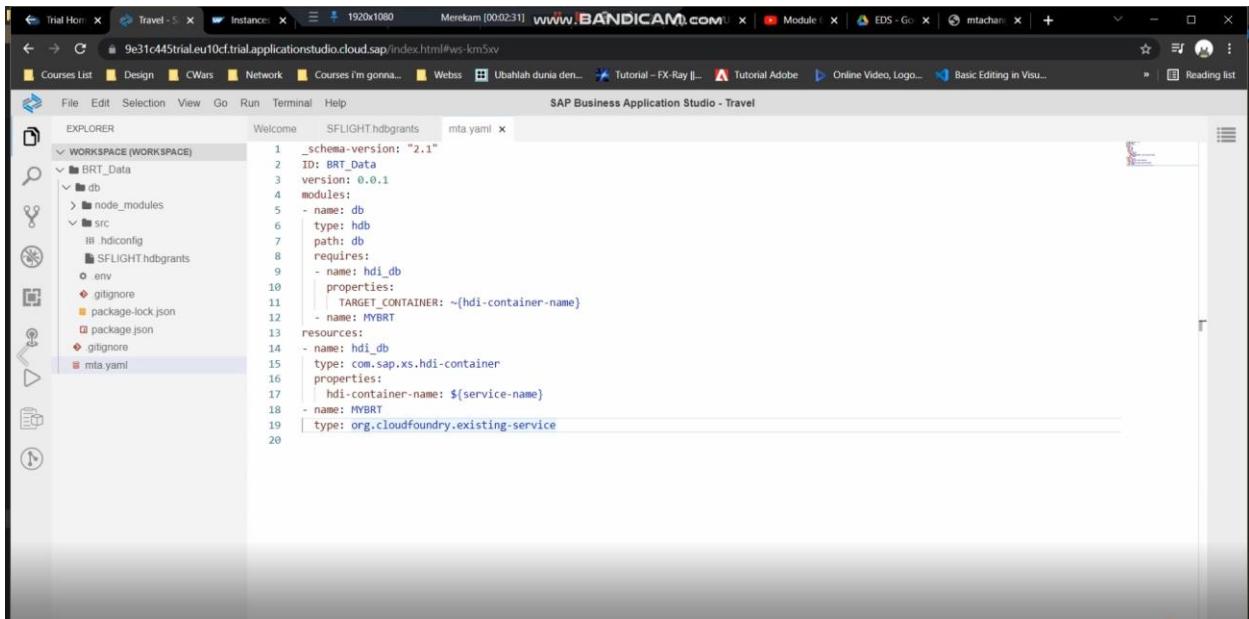






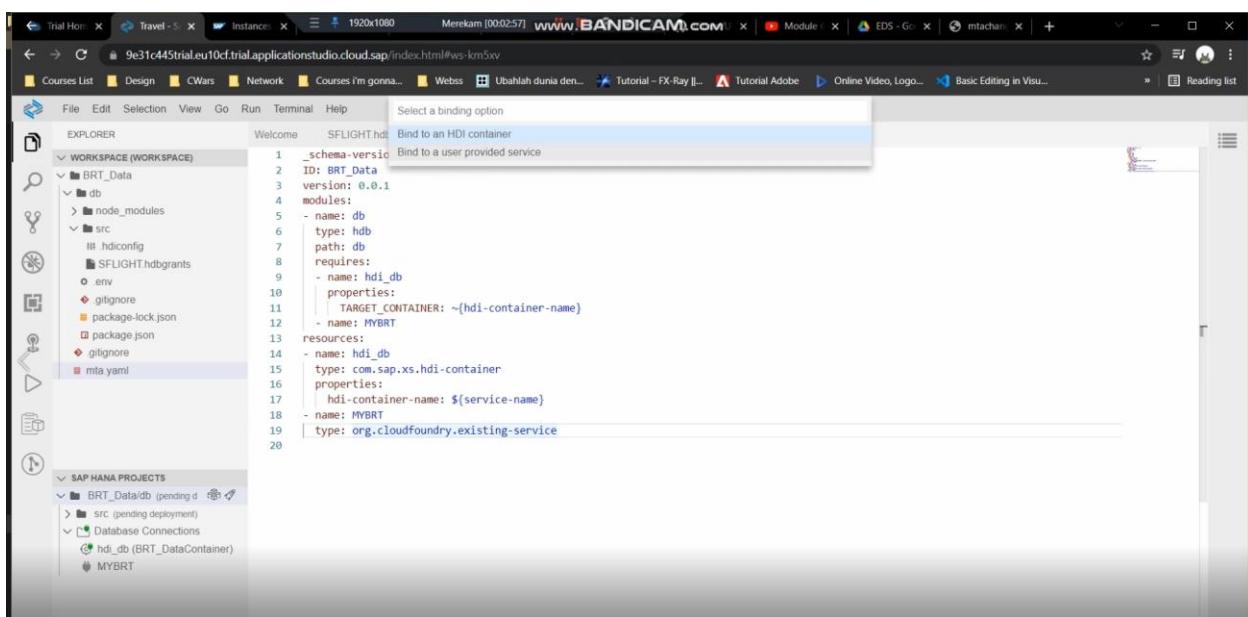






The screenshot shows the SAP Business Application Studio interface. The Explorer view on the left displays a project structure under 'WORKSPACE (WORKSPACE)'. A file named 'mta.yaml' is selected. The code editor on the right contains the following YAML configuration:

```
schema-version: "2.1"
ID: BRT_Data
version: 0.0.1
modules:
- name: db
  type: hdb
  path: db
  requires:
    - name: hdi_db
      properties:
        TARGET_CONTAINER: ~{hdi-container-name}
    - name: MYBRT
resources:
- name: hdi_db
  type: com.sap.xs.hdi-container
  properties:
    hdi-container-name: ${service-name}
  name: MYBRT
  type: org.cloudfoundry(existing-service)
```



The screenshot shows the SAP Application Studio interface with the mta.yaml file open in the code editor. The file defines a service named MYBRT with the following schema:

```
schema-version: "2.1"
ID: BRT_Data
version: 0.0.1
modules:
- name: db
  type: hdb
  path: db
  requires:
    - name: hdi_db
      properties:
        TARGET_CONTAINER: ~{hdi-container-name}
    - name: MYBRT
resources:
- name: hdi_db
  type: com.sap.xs.hdi-container
  properties:
    hdi-container-name: ${service-name}
  - name: MYBRT
  type: org.cloudfoundry.existing-service
```

The screenshot shows the SAP Business Application Studio interface with the mta.yaml file open in the code editor. The file is identical to the one in the previous screenshot. Below the code editor, the Problems panel shows deployment errors:

- Task: Deploy module at /home/user/projects/BRT_Data/db
- errno 1
- deploy@ start: `node node_modules@sap/hdi-deploy/deploy.js "--exit"`
Exit status 1
- Failed at the deploy@ start script.
- This is probably not a problem with npm. There is likely additional logging output above.
- A complete log of this run can be found in:
/home/user/.npm/_logs/2021-10-23T09_41_11_729Z-debug.log

Terminal output indicates the task failed with code 1. A message also states that the MYBRT service has been bound.