NANDINI RATHORE

BOOTCAMP PROJECT 4

Project Title: Incremental Data Loading and Automated Notifications using Microsoft Fabric

❖ Problem Statement:

In modern data ecosystems, organizations need to efficiently ingest, transform, and load data from various sources into centralized platforms for analytics, while also ensuring timely monitoring and notification upon successful data refreshes. This project addresses the challenge of incrementally loading data from on-premises sources to Microsoft Fabric Lakehouse, processing it through a structured transformation pipeline, and triggering automated notifications upon successful execution.

❖ Project Objective:

To build an end-to-end data pipeline on Microsoft Fabric that:

1. Ingests structured data from on-premises environments into a Fabric Lakehouse using the On-Prem Gateway
2. Utilizes the AI Bank Dataset as the source
3. Implements Dataflow Gen 1 to join tables, remove duplicates, and clean data
4. Loads the cleansed data into a Fabric Warehouse
5. Applies Slowly Changing Dimension (SCD) Type 1 logic using Fabric Notebooks and writes the results into separate warehouse tables
6. Schedules and monitors the pipeline, sending an automated email notification (via Outlook or Gmail) upon successful pipeline completion

Step 2:

* Source: Sales Excel file from ADLS Gen 2
* Do transformations on this file, remove duplicates, casting, and filter null values
* Bring data into Lake House using a fabric notebook (Tables)

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* While loading, decide which column will go into which table (3-5 dimensions tables)

Step 3:

* Source: Excel file (Sales Return) in ADLS Gen 2

* Do transformations on this file, remove duplicates, casting, and filter null values

* Bring the Excel file into Lake House using a fabric notebook (1-dimensional Table)

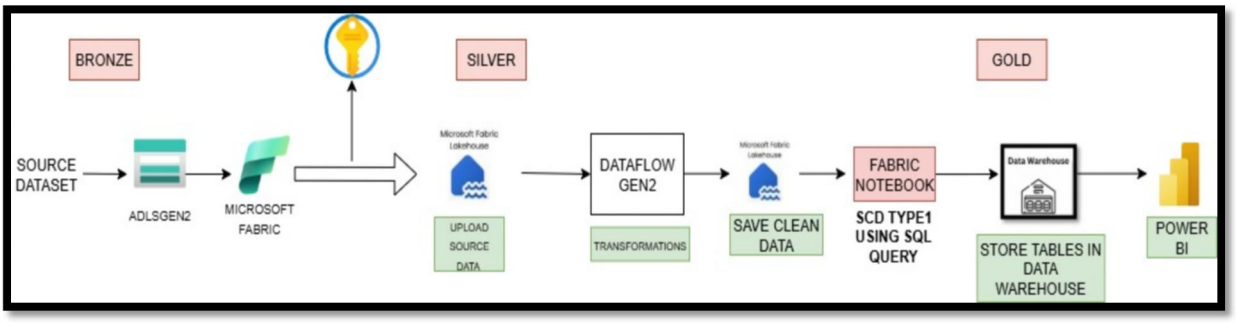
Step 4:

* Join the dimension tables with Excel files using the Fabric notebook and generate a fact table (keep numerical values in the fact table, also foreign keys from dimension tables)

* Join the fact table with the dimension tables and display the additional descriptive information using the SQL query, and use that query in Power BI

* Store facts and dimensions in the warehouse

ARCHITECTURE DIAGRAM:-



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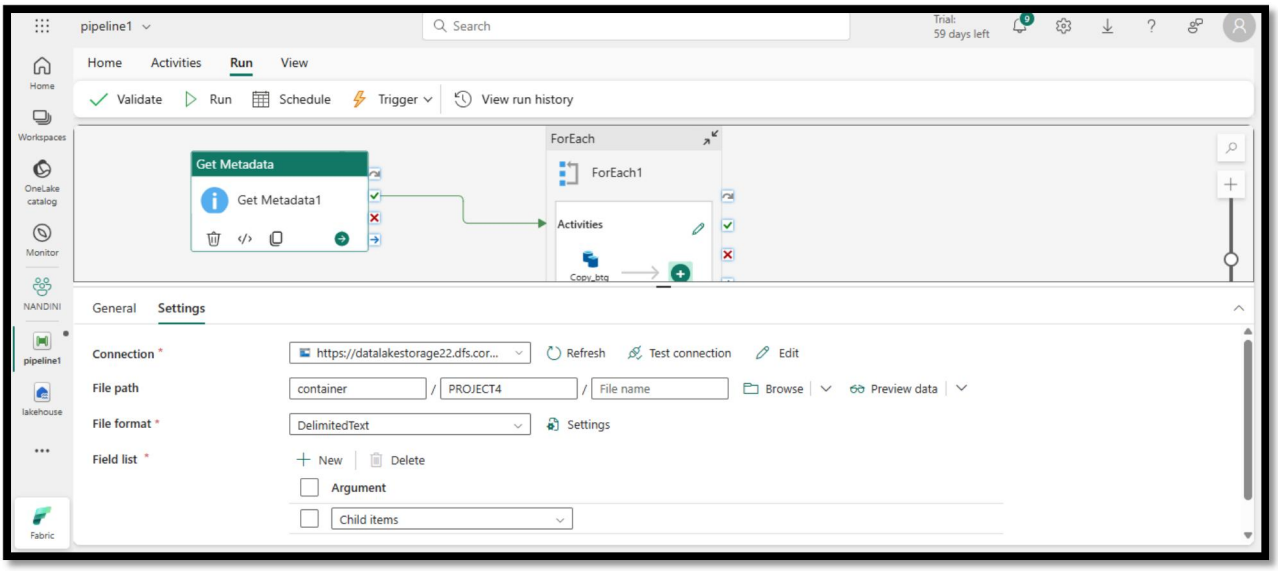
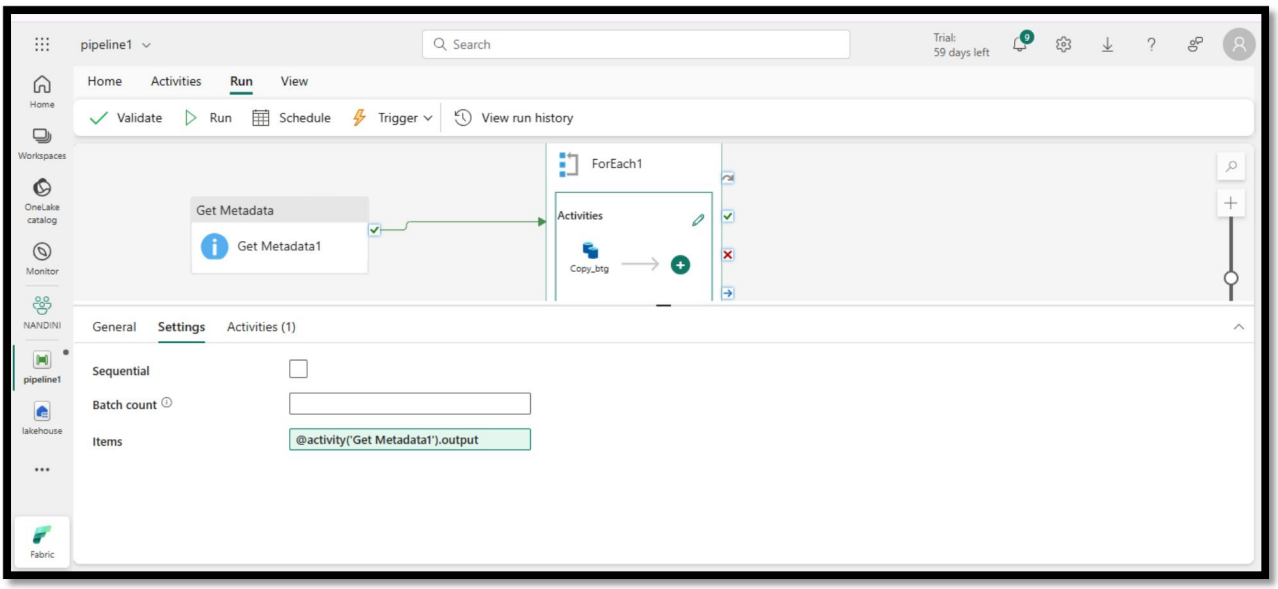
FIRST STEP OF INGESTION OF DATA FROM ADLS TO LAKEHOUSE FOR TRANSFORMATION.



In fabric workspace, I selected the data pipeline and I want to load data dynamically. Therefore I select get metadata and for each activity.



In items ,providing the output of get metadata activity.

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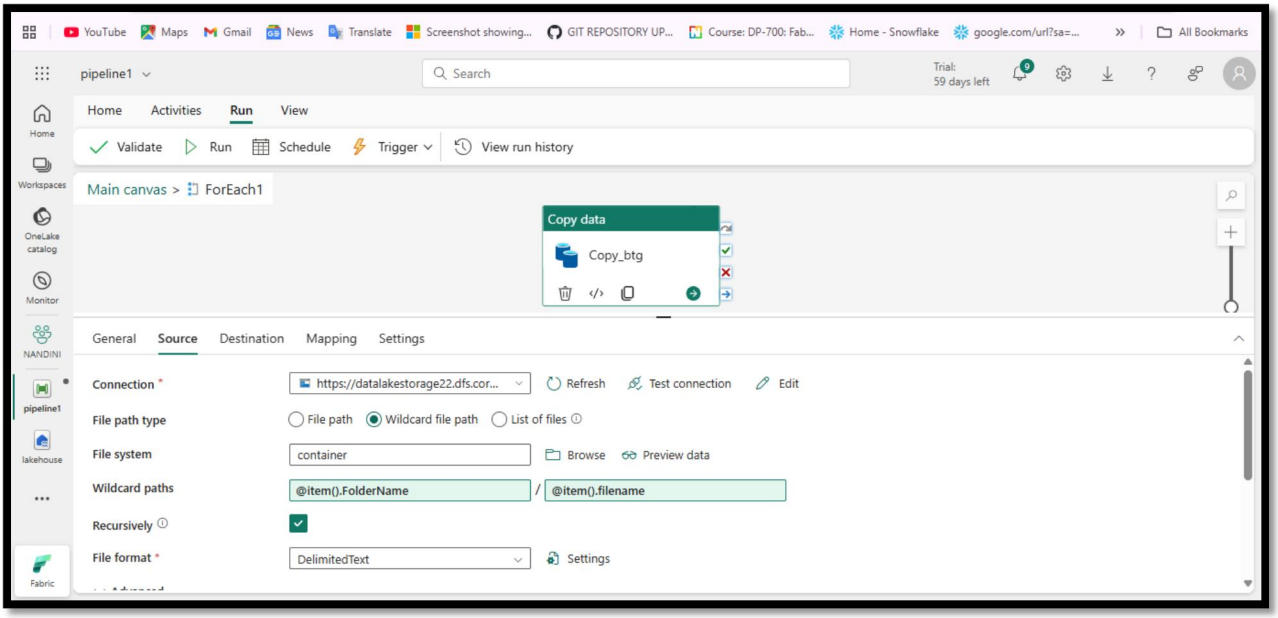
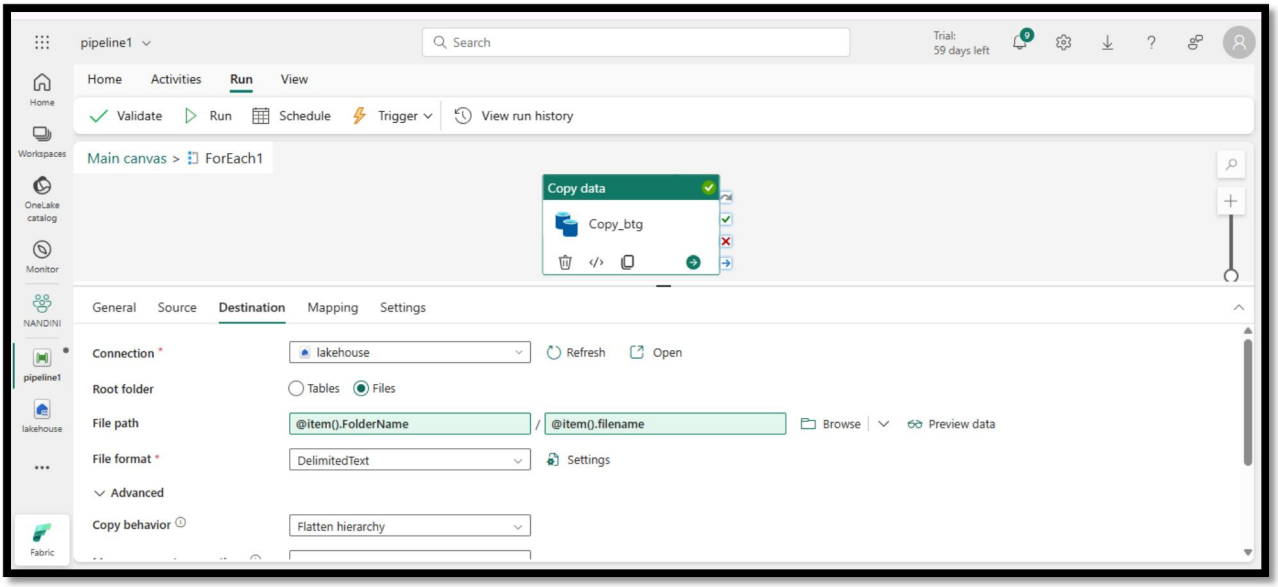


Now inside for each activity ,use copy activity to copy data from adlsgen2 to lakehouse.



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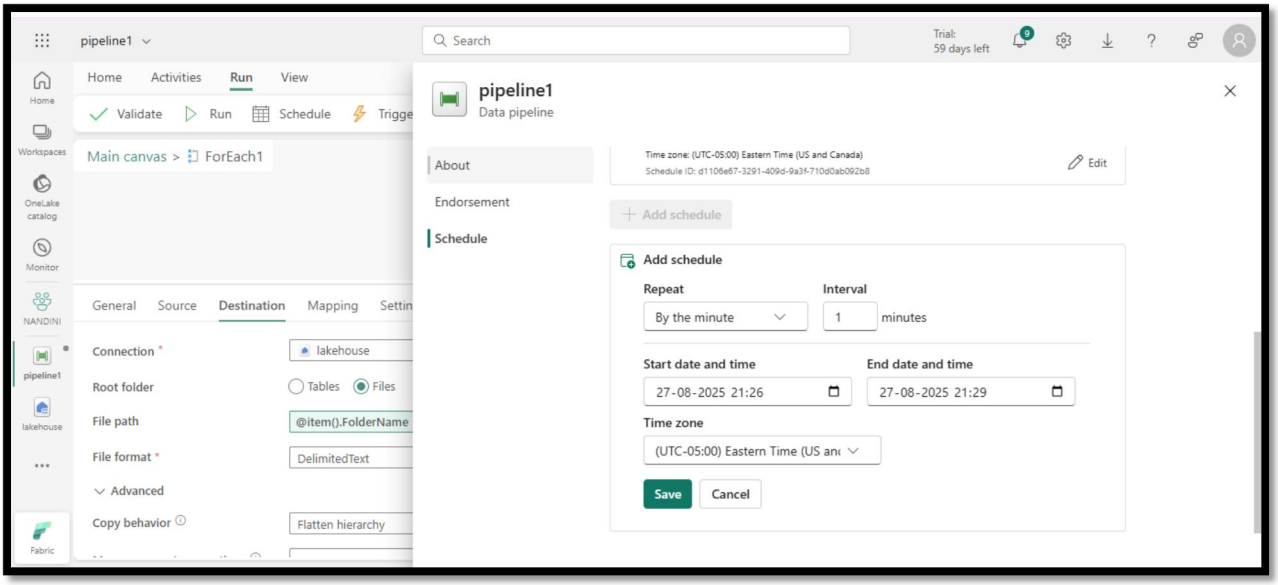
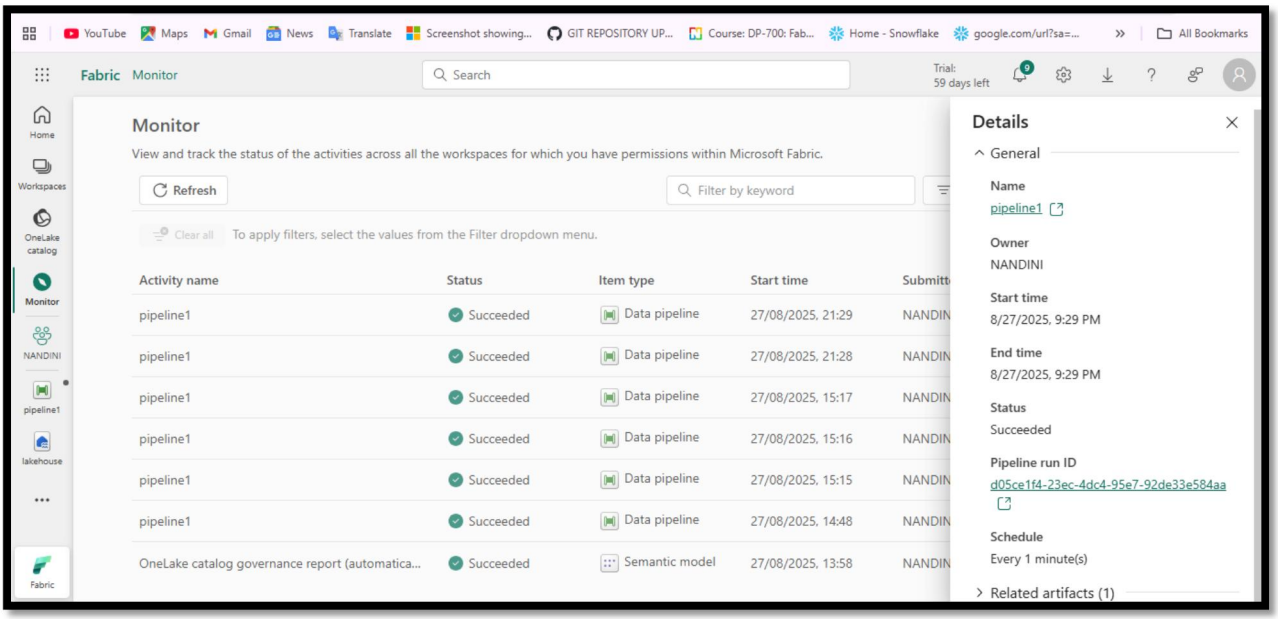


Schedule trigger.



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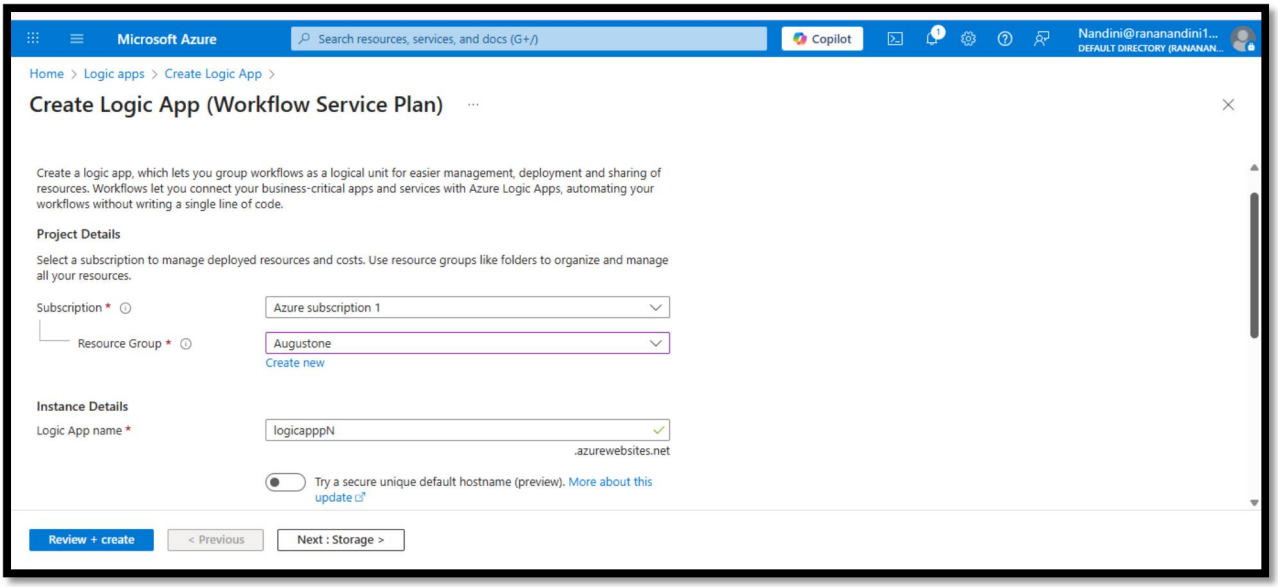
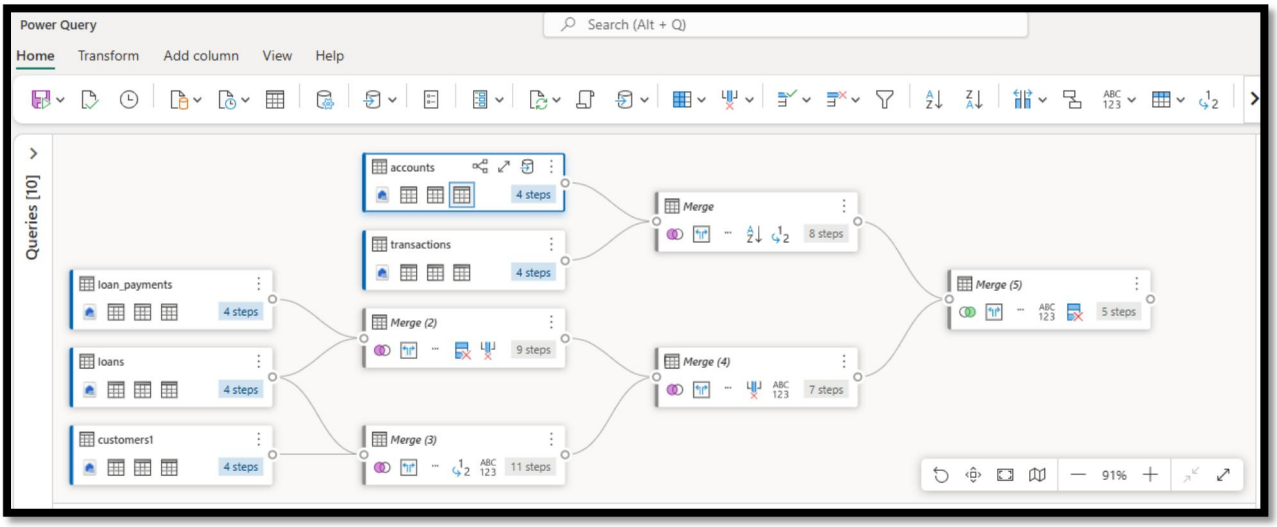


Download logic app for web activity and get mail notifications.

Dataflow transformations.



1 merge :-ACCOUNT AND TRANSACTION TABLE.

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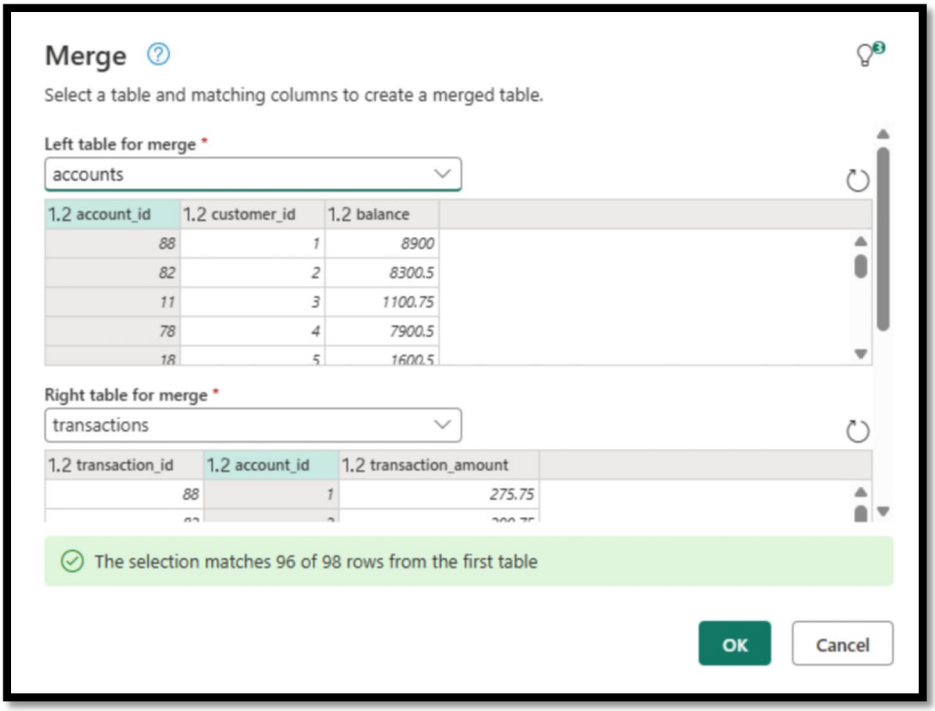

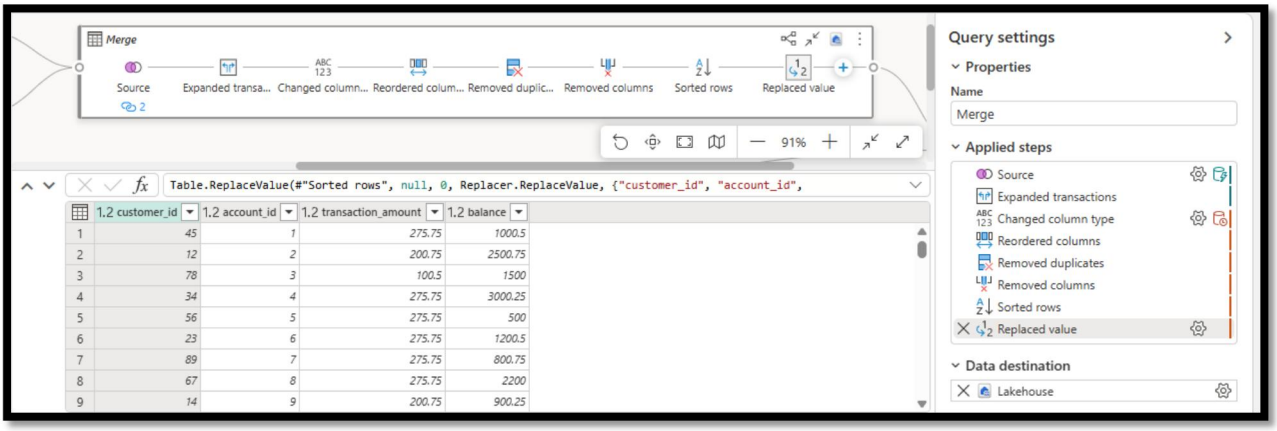

2.MERGE –LOAN_PAYMENTS & LOANS.

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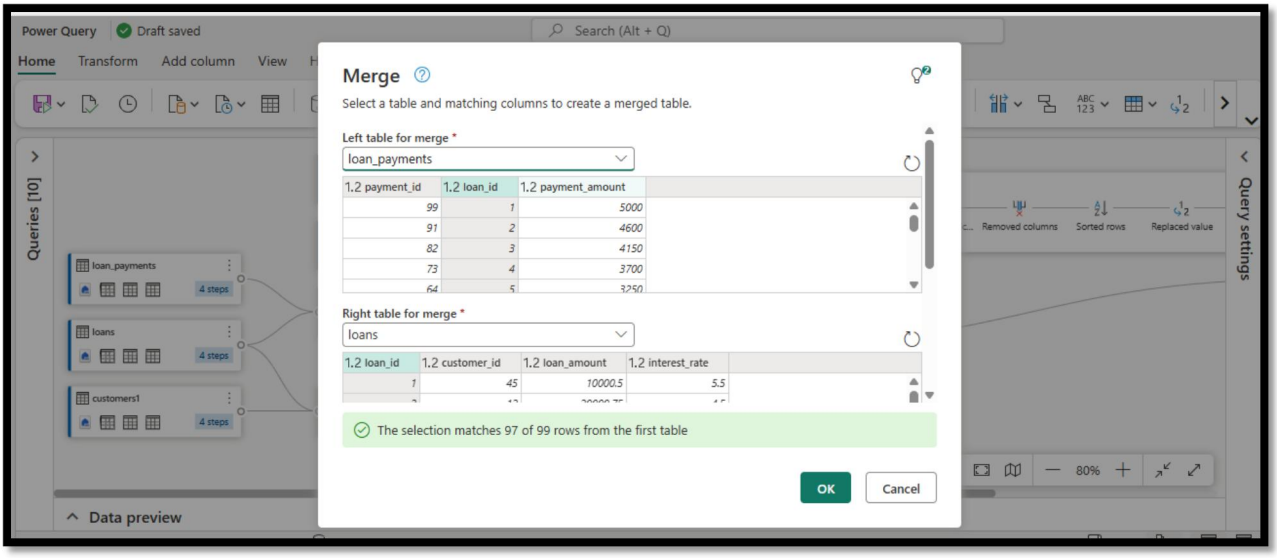
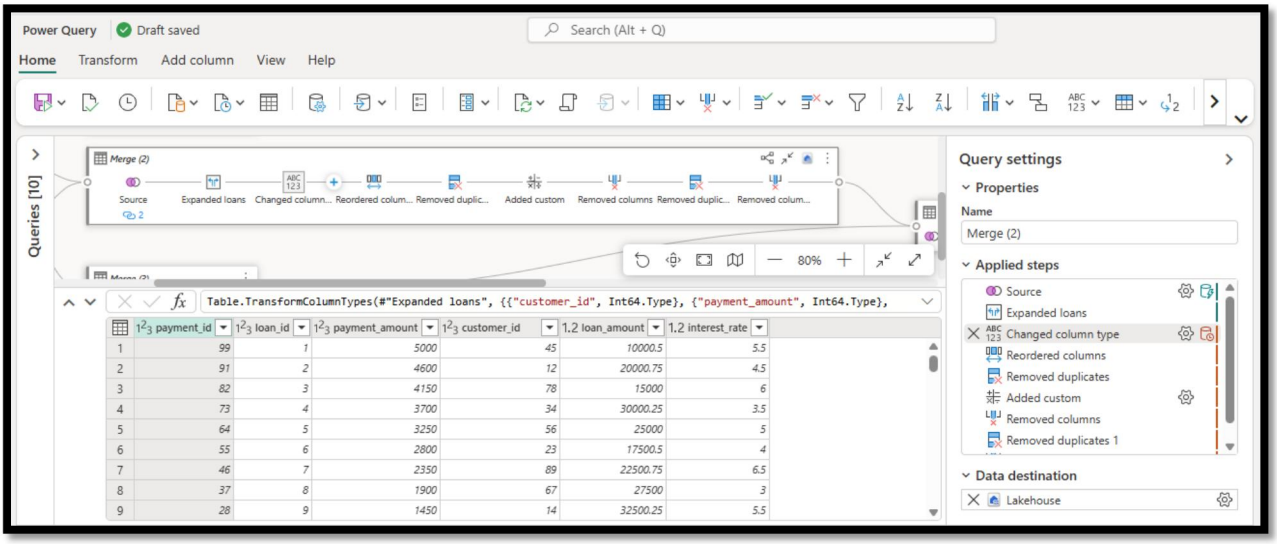
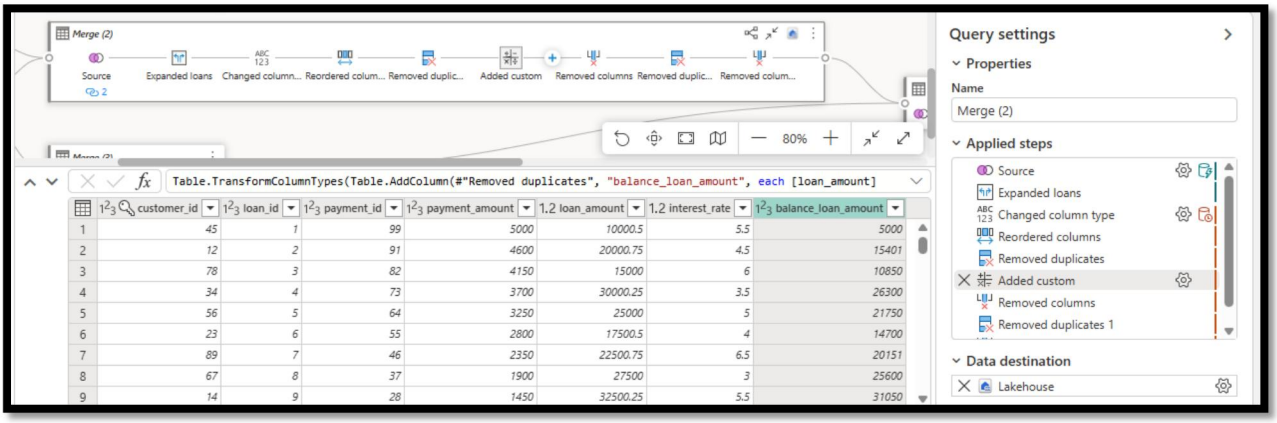




ADD A CUSOM COLUMN:-balance_loan_amount.



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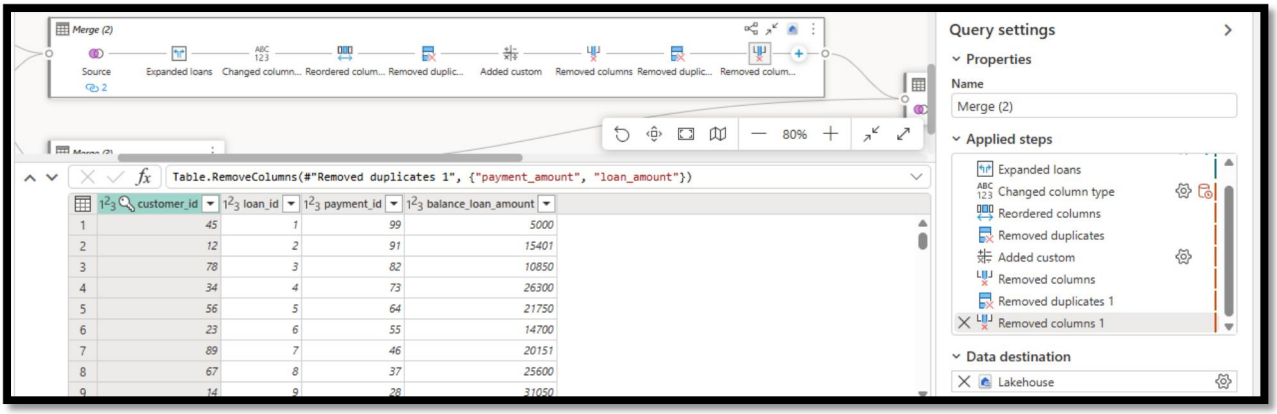
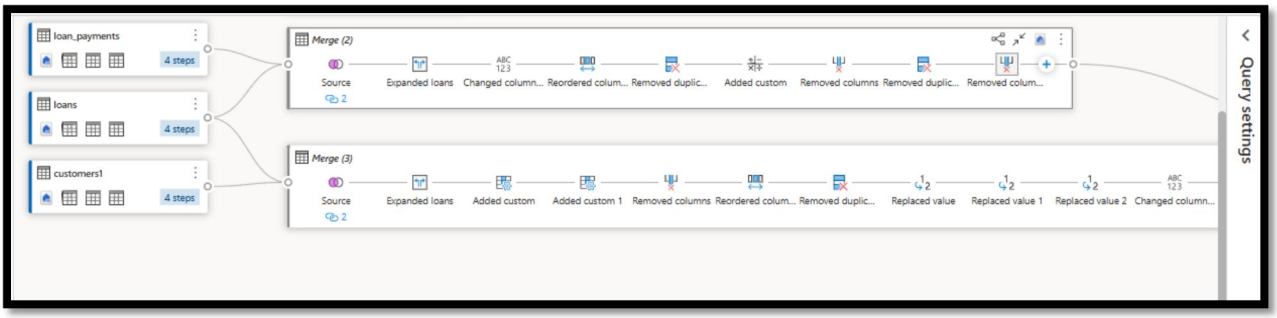
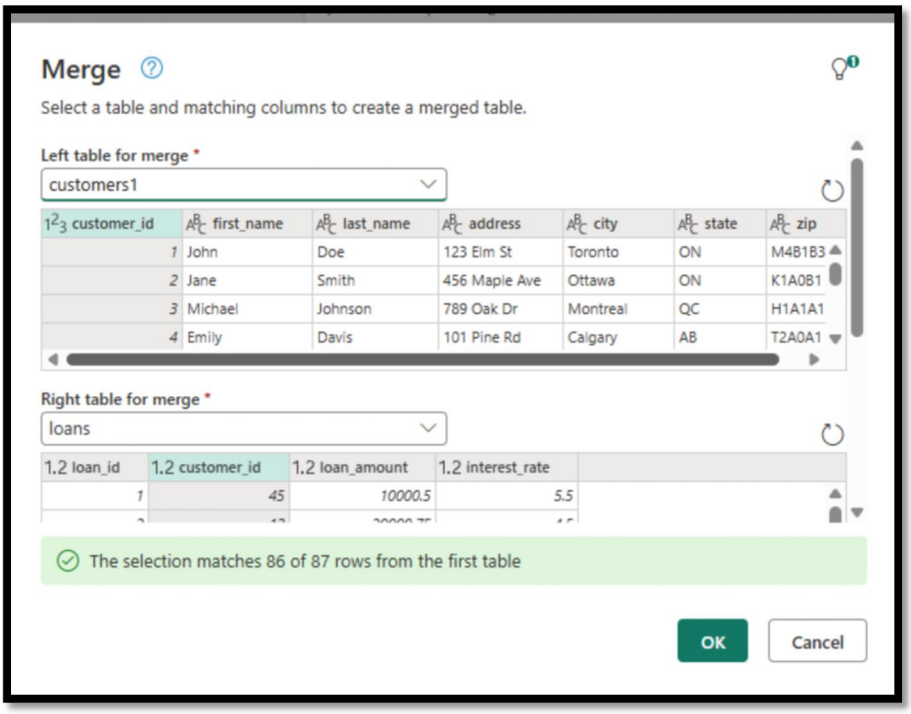


3. MERGE-LOANS & CUSTOMERS.





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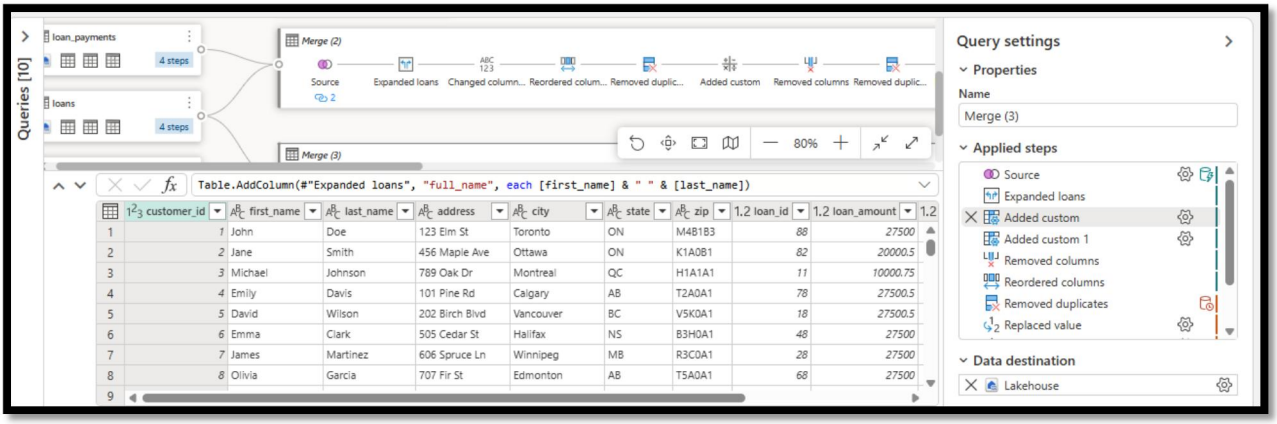
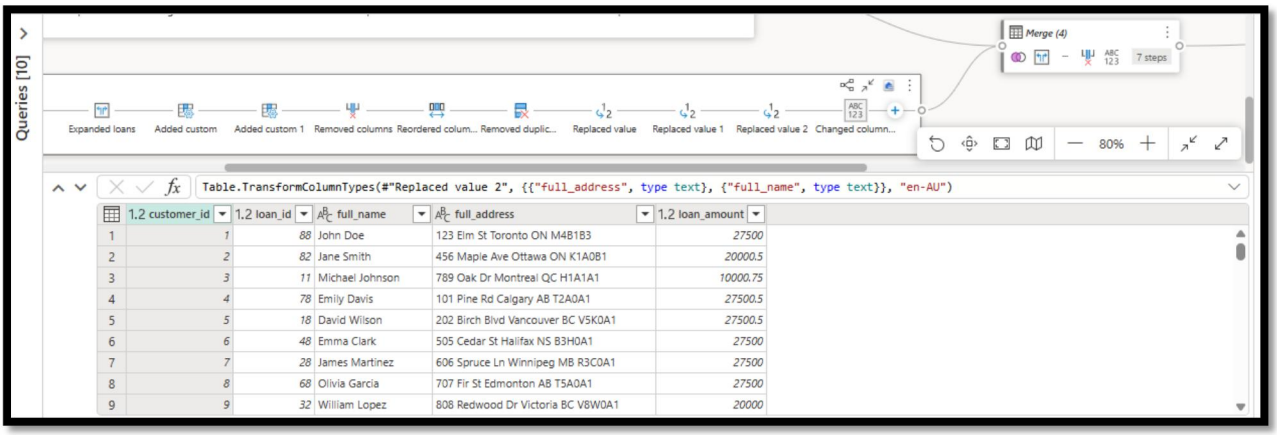
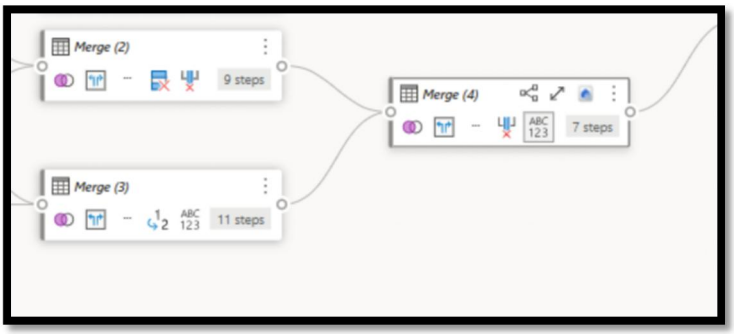




4.MERGE-



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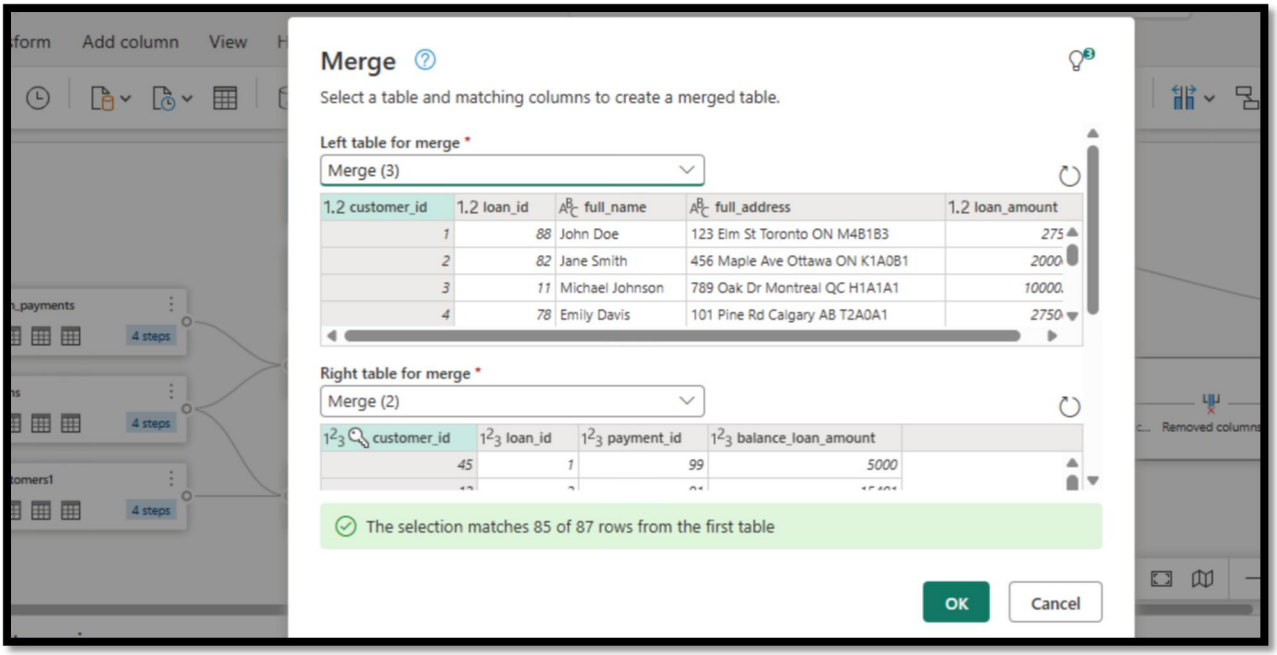

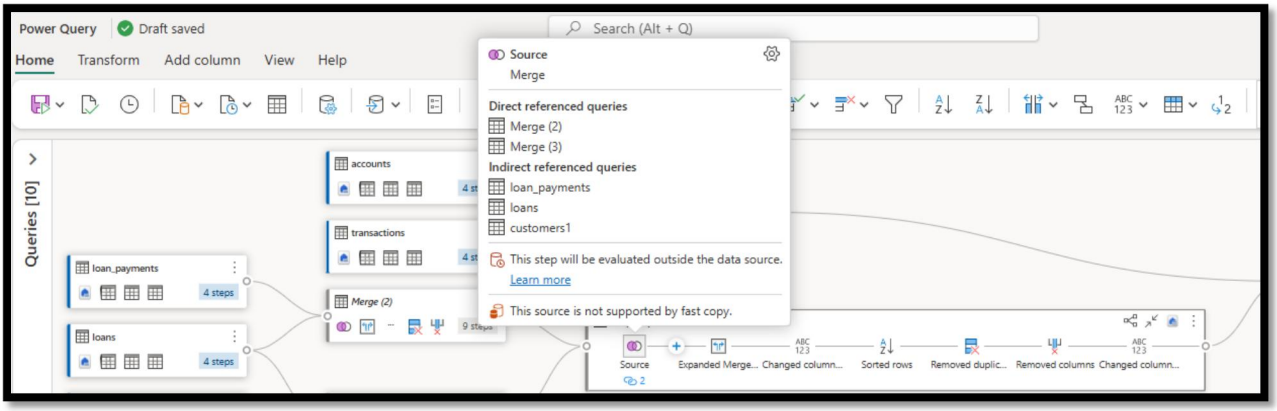

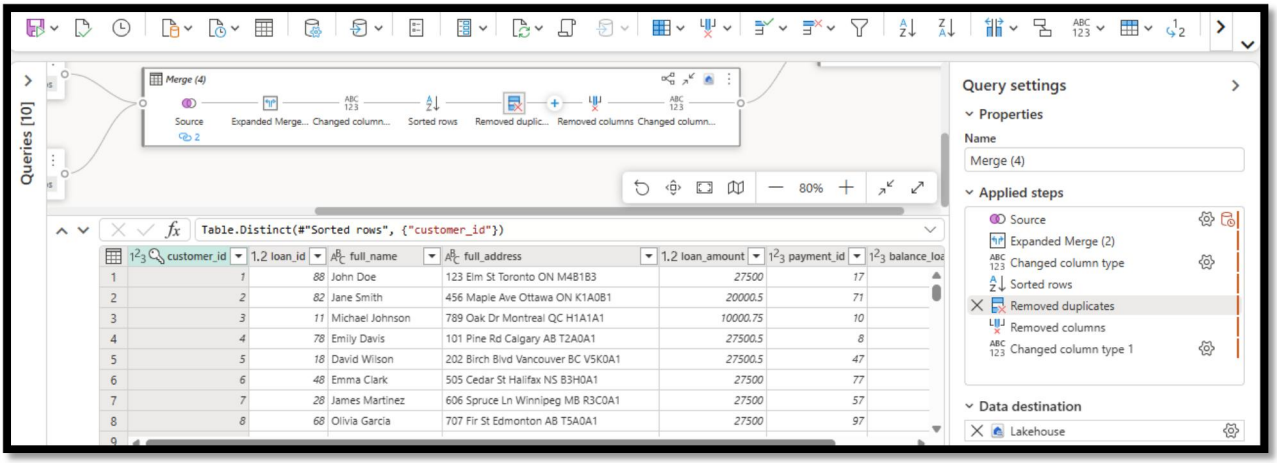

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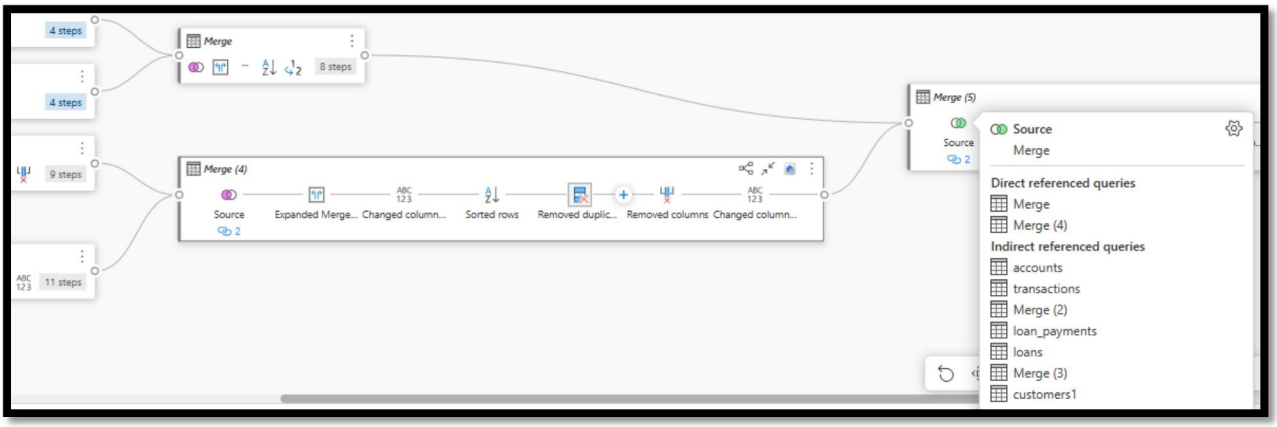
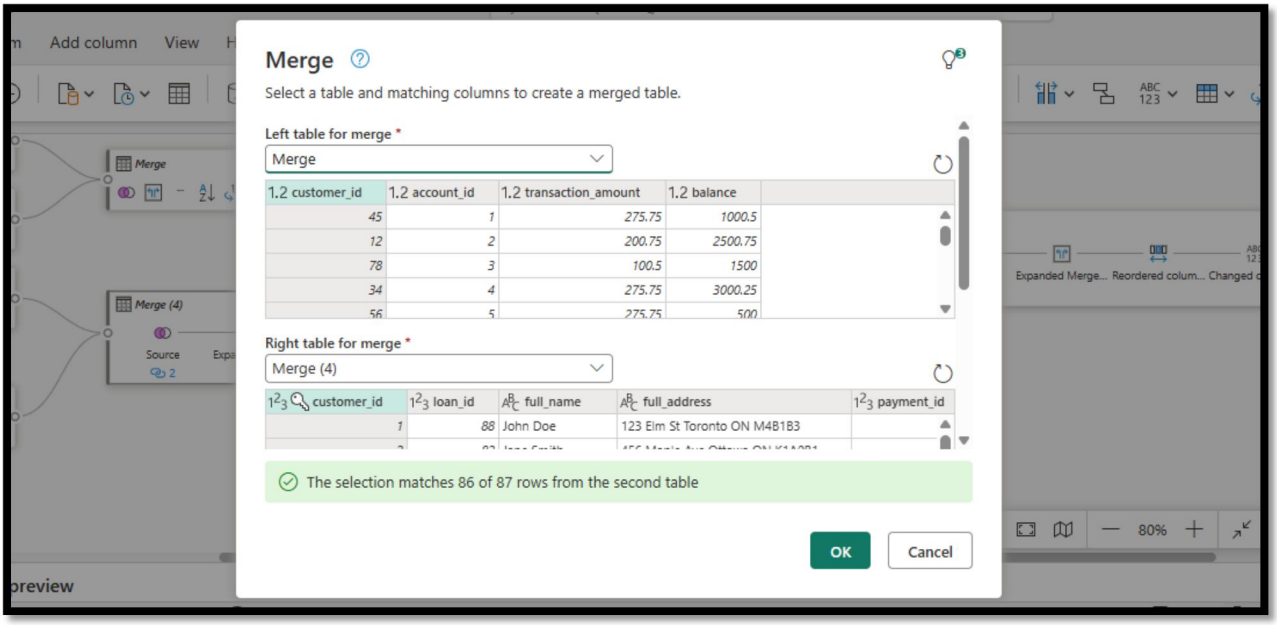
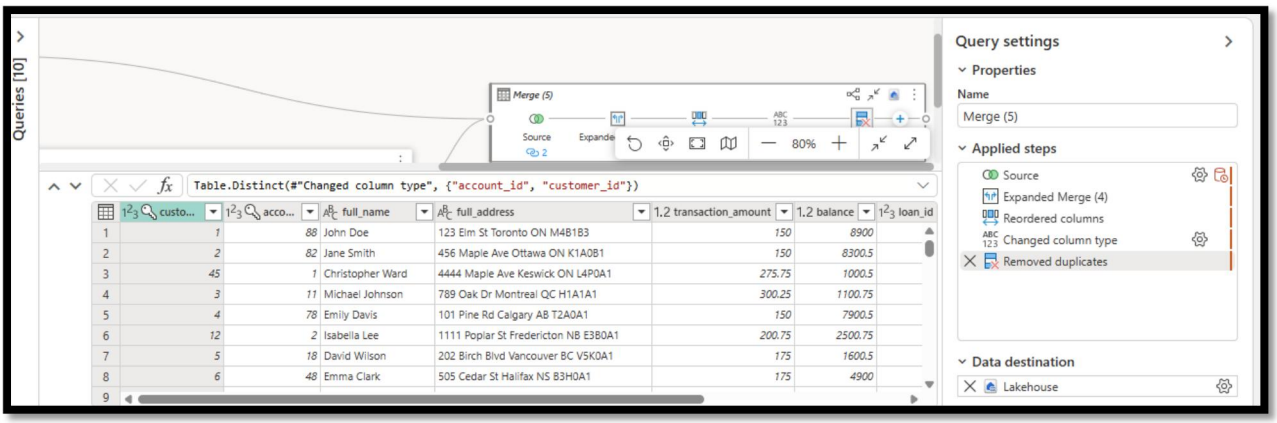
5.MERGE-ALL TABLES.







Now transformations are done and I get 5 merge tables here and load them into lakehouse.

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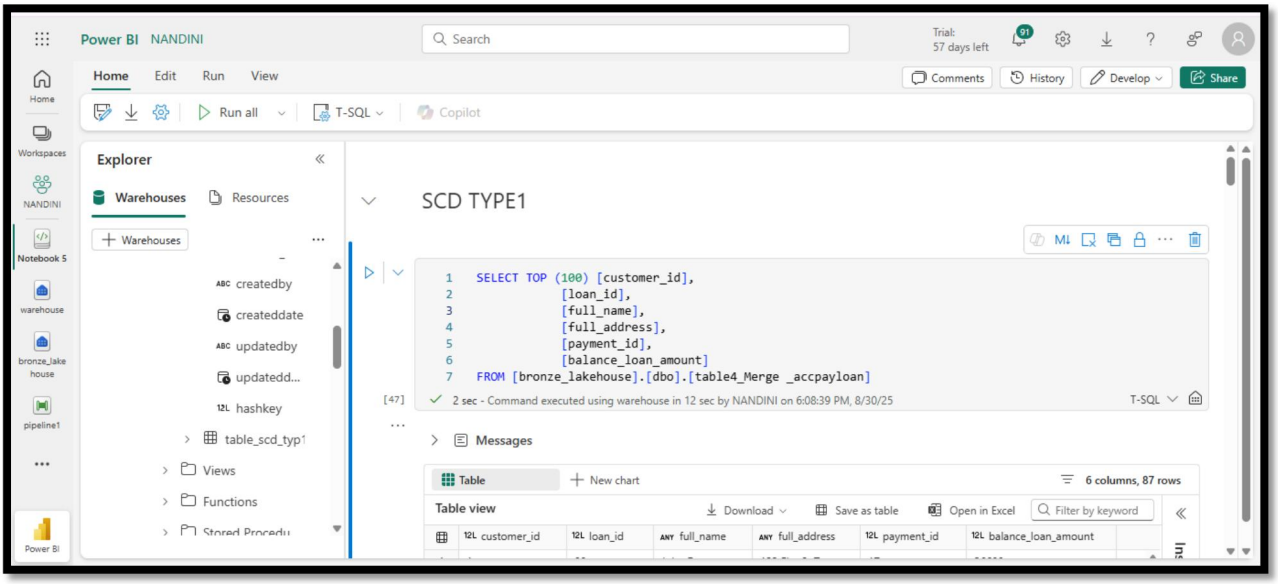
Now for scd type1 ,i selected the sql endpoints where tables are automatically created if present in lakehouse. We can't create or alter tables in lakehouse. So I use warehouse to create,alter tables.



Right click on the table and selected sql query.

Creating target table.

```sql
select src.customer_id,
    src.loan_id,
    src.full_name,
    src.full_address,
    src.payment_id,
    src.balance_loan_amount,
    CONVERT(VARBINARY(32),
    HASHBYTES('SHA2_256',
           CONCAT(
               CAST(src.customer_id AS VARCHAR),
               CAST(src.loan_id AS VARCHAR),
               CAST(src.payment_id AS VARCHAR),
               CAST(src.balance_loan_amount AS VARCHAR),
               src.full_name,
               src.full_address
           ))
       ) AS src_hashkey
FROM [bronze_lakehouse].[dbo].[table4_Merge _accpayloan] src

```

1 sec - Command executed using warehouse in 1 sec by NANDINI on 12:31:59 AM, 8/31/25 T-SQL

Generating hashkey.i use Varbinary (32),so that in the end I didn't get any negative value.

Crc32 is not supported in fabric that's why I used SHA2_256.

- **CRC32** is fast but **not cryptographically strong**; it has a higher chance of collisions (different inputs producing the same output).
- **SHA2_256** is slower but **collision-resistant and secure**, making it reliable for **change detection, deduplication, and sensitive data hashing**.

We use SHA2_256 instead of CRC32 because it's **much safer and reliable for detecting changes and ensuring data integrity.**

	customer_id	loan_id	full_name	full_address	payment_id	balance_loan_amount	src_hashkey
1	1	88	John Doe	123 Elm St Toron...	17	26600	0xFAA56555E743...
2	2	82	Jane Smith	456 Maple Ave ...	71	16400	0x50CC3FBB2A7...
3	3	11	Michael Johnson	789 Oak Dr Mon...	10	9451	0x3B001365D8E...
4	4	78	Emily Davis	101 Pine Rd Calg...	8	27050	0xCE21FE56D1A...
5	5	18	David Wilson	202 Birch Blvd V...	47	25100	0x87E1EAC7AC0...
6	6	48	Emma Clark	505 Cedar St Hal...	77	23600	0x7A3B985819F0...
7	7	28	James Martinez	606 Spruce Ln W...	57	24600	0xA5917AB9DEA...
8	8	68	Olivia Garcia	707 Fir St Edmon...	97	22600	0xCDCEDEE3873...
9	9	32	William Lopez	808 Redwood Dr...	21	18900	0x934FE7918C76...
10	10	52	Ava Anderson	909 Cypress Ave ...	41	17900	0xBF87D40ACD1...
11	11	24	Alexander Tho...	1010 Willow Rd ...	93	25300	0x85D9702FED0...
12	12	2	Isabella Lee	1111 Poplar St Fr...	91	15401	0x674A87D22B2...
13	13	44	Daniel Harris	1212 Ash Blvd C...	13	29300	0xD9E295261B8...
14	14	9	Sophia Young	1313 Beech Dr Y...	28	31050	0xB54631C9AC2...
15	15	38	Matthew King	1414 Cedar Ln W...	67	24100	0x2B94BABEBE5...
16	16	58	Charlotte Scott	1515 Elm St Iqal...	87	23100	0xF69D77FC941...

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This a alias of source table with target table .src.customer_id=tgt.customer_id and

Src.hashkey=tgt.hashkey.

- ✓ When doing LEFT JOIN with an alias, you **cannot just use src.hashkey** if it's not a real column in the source.
- ✓ You need to **compute the hash in the query** so the join can accurately detect new or changed rows.

```
select src.customer_id,
    src.loan_id,
    src.full_name,
    src.full_address,
    src.payment_id,
    src.balance_loan_amount,
    CONVERT(VARBINARY(32),
    HASHBYTES('SHA2_256',
           CONCAT(
               CAST(src.customer_id AS VARCHAR),
               CAST(src.loan_id AS VARCHAR),
               CAST(src.payment_id AS VARCHAR),
               CAST(src.balance_loan_amount AS VARCHAR),
               src.full_name,
               src.full_address
           ))
       ) AS src_hashkey
FROM [bronze_lakehouse].[dbo].[table4_Merge _accpayloan] src
left join [TARGET_TABLE2] tgt
on  src.customer_id=tgt.customer_id
AND CONVERT(VARBINARY(32),
HASHBYTES('SHA2_256',
           CONCAT(
               CAST(src.customer_id AS VARCHAR),
               CAST(src.loan_id AS VARCHAR),
```

```
left join [TARGET_TABLE2] tgt
on  src.customer_id=tgt.customer_id
AND CONVERT(VARBINARY(32),
HASHBYTES('SHA2_256',
            CONCAT(
                CAST(src.customer_id AS VARCHAR),
                CAST(src.loan_id AS VARCHAR),
                CAST(src.payment_id AS VARCHAR),
                CAST(src.balance_loan_amount AS VARCHAR),
                src.full_name,
                src.full_address
            ))
        )=tgt.hashkey;

```

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left join

```
1    update tgt
2     SET
3          tgt.customer_id=src.customer_id,
4          tgt.loan_id=src.loan_id,
5          tgt.full_name=src.full_name,
6          tgt.full_address=src.full_address,
7          tgt.payment_id=src.payment_id,
8          tgt.balance_loan_amount=src.balance_loan_amount,
9          tgt.hashkey=src.src_hashkey,
10         updateddate=getdate(),
11         updatedby='fabric-updated'
12   FROM [TARGET_TABLE2] tgt
13    join (
14       SELECT *,
15            CONVERT(VARBINARY(32),
16             HASHBYTES('SHA2_256',
17                 CONCAT(
18                     CAST(customer_id AS VARCHAR),
```

```
7          tgt.payment_id=src.payment_id,
8          tgt.balance_loan_amount=src.balance_loan_amount,
9          tgt.hashkey=src.src_hashkey,
10         updateddate=getdate(),
11         updatedby='fabric-updated'
12   FROM [TARGET_TABLE2] tgt
13    join (
14       SELECT *,
15            CONVERT(VARBINARY(32),
16             HASHBYTES('SHA2_256',
17                 CONCAT(
18                     CAST(customer_id AS VARCHAR),
19                     CAST(loan_id AS VARCHAR),
20                     CAST(payment_id AS VARCHAR),
21                     CAST(balance_loan_amount AS VARCHAR),
22                     full_name,
23                     full_address
24                 ))
25              )AS src_hashkey
26       FROM [bronze_lakehouse].[dbo].[table4_Merge _accpayloan]) AS src
27    on tgt.customer_id=src.customer_id
28    where  tgt.hashkey <> src.src_hashkey
29      OR tgt.hashkey IS NULL;
30
```

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```sql
INSERT INTO TARGET_TABLE2
(customer_id, loan_id, full_name, full_address, payment_id, balance_loan_amount,
SELECT customer_id, loan_id, full_name, full_address, payment_id, balance_loan_am
CONVERT(VARBINARY(32),
       HASHBYTES('SHA2_256',
           CONCAT(
               CAST(customer_id AS VARCHAR),
               CAST(loan_id AS VARCHAR),
               CAST(payment_id AS VARCHAR),
               CAST(balance_loan_amount AS VARCHAR),
               full_name,
               full_address
           ))
       ),
       'fabric', GETDATE(), 'fabric', GETDATE()
FROM bronze_lakehouse.dbo.[table4_Merge _accpayloan] src
WHERE NOT EXISTS (
    SELECT 1 FROM TARGET_TABLE2 tgt
    WHERE tgt.customer_id = src.customer_id
);
```

Datetime2 or datetime is not supported here that,s why I used getdate() here.

```sql
select * from [TARGET_TABLE2]
```

1 sec - Command executed using warehouse in 1 sec by NANDINI on 12:30:38 AM, 8/31/25 T-SQL

Messages

Table | New chart | 11 columns, 87 rows

Table view | Download | Save as table | Open in Excel | Filter by keyword | Inspect

	customer_id	loan_id	full_name	full_address	payment_id	balance_loan_amount	createdby	
1	1	88	John Doe	123 Elm St Toron...	17	26600	fabric	
2	2	82	Jane Smith	456 Maple Ave ...	71	16400	fabric	
3	3	11	Michael Johnson	789 Oak Dr Mon...	10	9451	fabric	
4	4	78	Emily Davis	101 Pine Rd Calg...	8	27050	fabric	
5	5	18	David Wilson	202 Birch Blvd V...	47	25100	fabric	
6	6	48	Emma Clark	505 Cedar St Hal...	77	23600	fabric	
7	7	28	James Martinez	606 Spruce Ln W...	57	24600	fabric	
8	8	68	Olivia Garcia	707 Fir St Edmon...	97	22600	fabric	
9	9	32	William Lopez	808 Redwood Dr...	21	18900	fabric	
10	10	52	Ava Anderson	909 Cypress Ave ...	41	17900	fabric	

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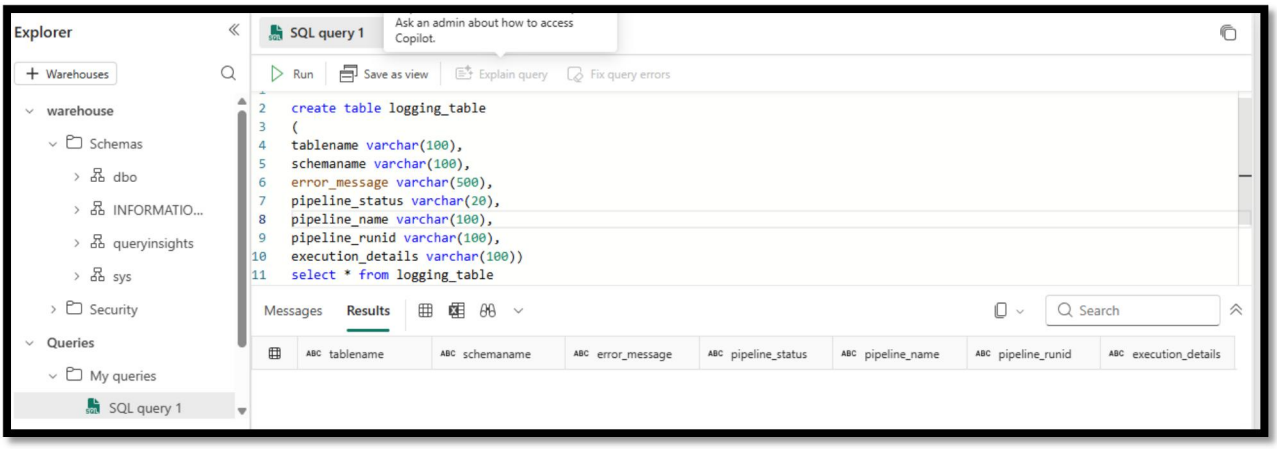
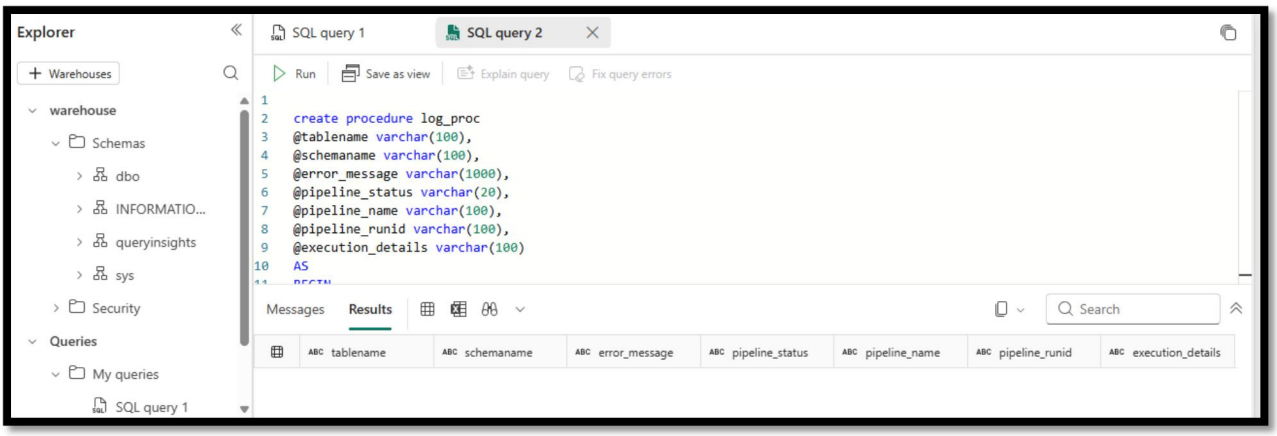
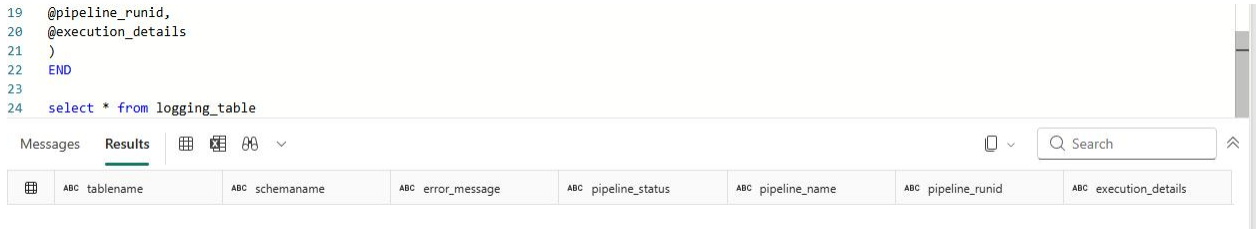
LOGGING TABLE :- creating in warehouse.



STORED PROCEDURE



```
BEGIN
    SET NOCOUNT ON
insert into logging_table VALUES
(@tablename,
@schemaname,
@error_message,
@pipeline_status,
@pipeline_name,
@pipeline_runid,
@execution_details
```



```
@pipeline_runid,
@execution_details
)
END

select * from logging_table
```

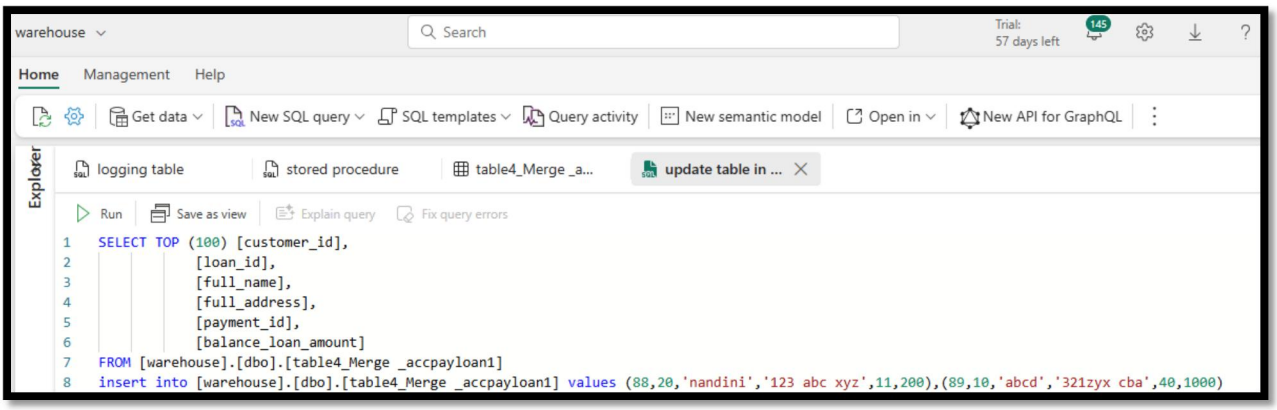
Messages Results Search

tablename	schemaname	error_message	pipeline_status	pipeline_name	pipeline_runid	execution_details

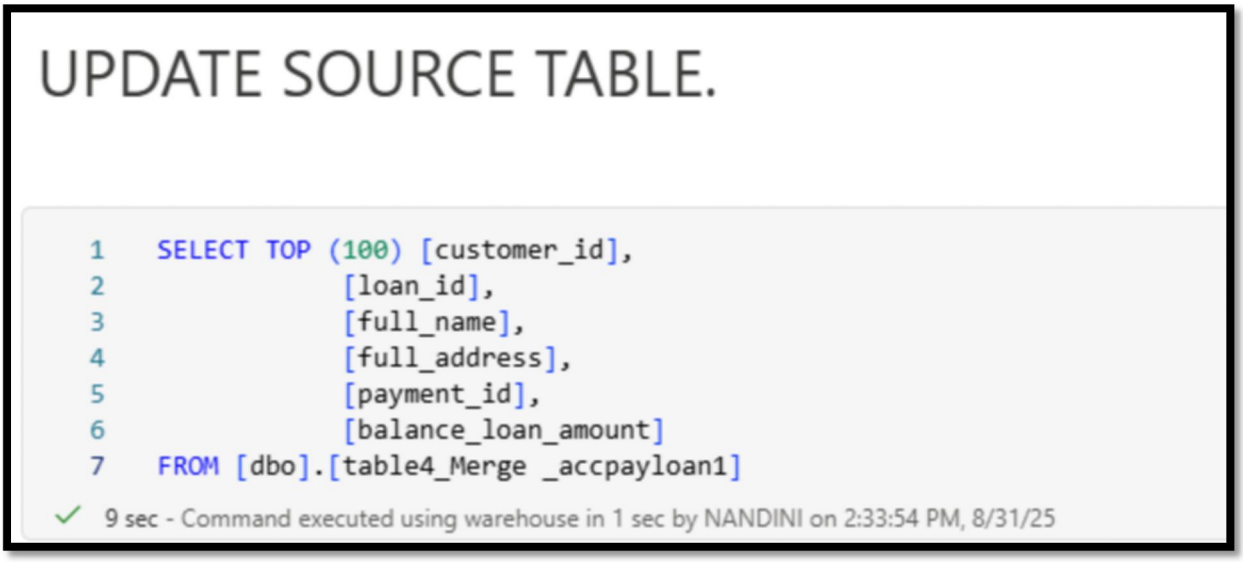
UPDATE SOURCE

NANDINI RATHORE

For update the values in scd type 1 target table:- I inserted new rows in source table and update few rows.

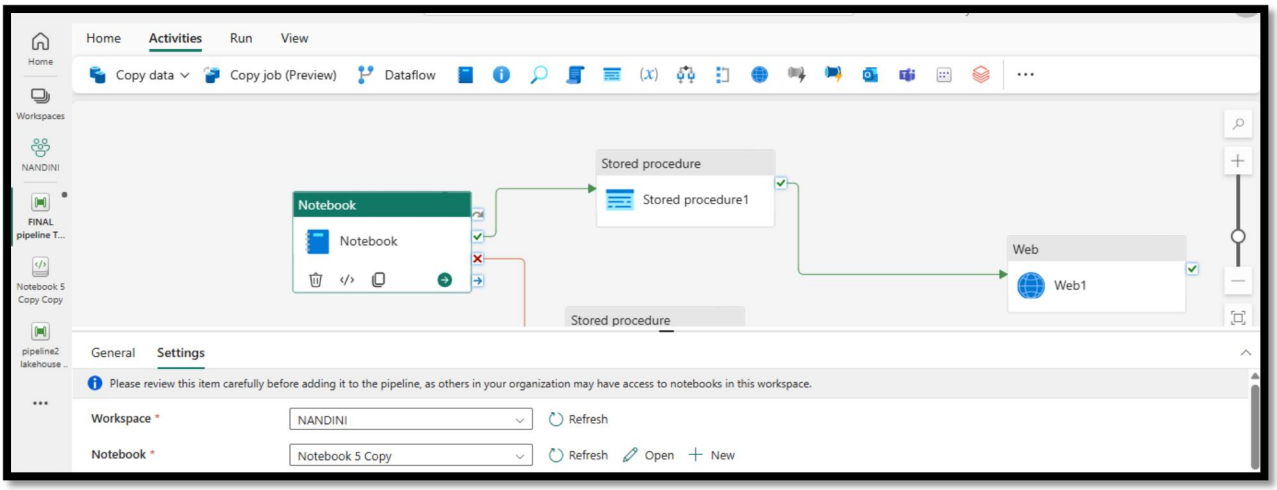


86	49	98	Joshua Bennett	4800 Spruce Ln Beaverton ON L...	27	26100
87	1	88	joy smith	123 Elm St Toronto ON M4B1B3	17	26600
88	88	20	nandini	123 abc xyz	11	200
89	89	10	abcd	321zyx cba	40	1000



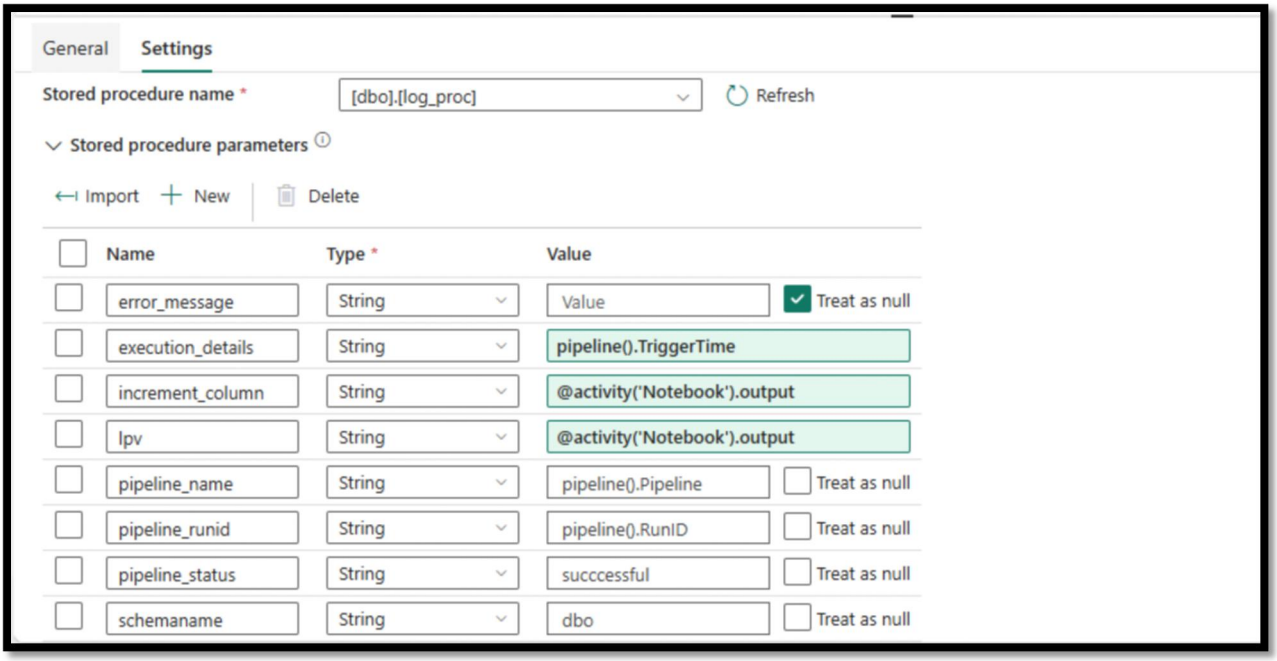
NANDINI RATHORE

loan_id	full_name	full_address	payment_id	balance_loa...	createdby	createddate	update...
71	Andrew Hami...	7272 Maple Ave ...	70	6451	fabric	2025-08-31 0...	fabric
39	Harper Graham	7373 Oak Dr Bal...	58	29551	fabric	2025-08-31 0...	fabric
59	Joshua Sullivan	7474 Pine Rd Bra...	78	28551	fabric	2025-08-31 0...	fabric
19	Evelyn Wallace	7575 Birch Blvd ...	38	30551	fabric	2025-08-31 0...	fabric
91	Daniel Woods	7676 Spruce Ln ...	90	5451	fabric	2025-08-31 0...	fabric
3	Abigail Cole	7777 Fir St Sundr...	82	10850	fabric	2025-08-31 0...	fabric
93	James West	7878 Redwood ...	72	11350	fabric	2025-08-31 0...	fabric
99	Emily Jordan	7979 Cypress Av...	18	31551	fabric	2025-08-31 0...	fabric
12	Michael Owens	8080 Willow Rd ...	5	19700	fabric	2025-08-31 0...	fabric
83	Elizabeth Rey...	8181 Poplar St St...	62	11851	fabric	2025-08-31 0...	fabric
43	David Fisher	8282 Ash Blvd V...	22	13851	fabric	2025-08-31 0...	fabric
63	Sophia Ellis	8383 Beech Dr Fi...	42	12851	fabric	2025-08-31 0...	fabric
33	John Harrison	8484 Cedar Ln Te...	12	14350	fabric	2025-08-31 0...	fabric
53	Olivia Gibson	8585 Elm St New...	32	13350	fabric	2025-08-31 0...	fabric
73	William McD...	N/A	52	12350	fabric	2025-08-31 0...	fabric
88	joy smith	123 Elm St Toron...	17	26600	fabric	2025-08-31 0...	fabric-updated
98	Joshua Bennett	4800 Spruce Ln ...	27	26100	fabric	2025-08-31 0...	fabric-updated

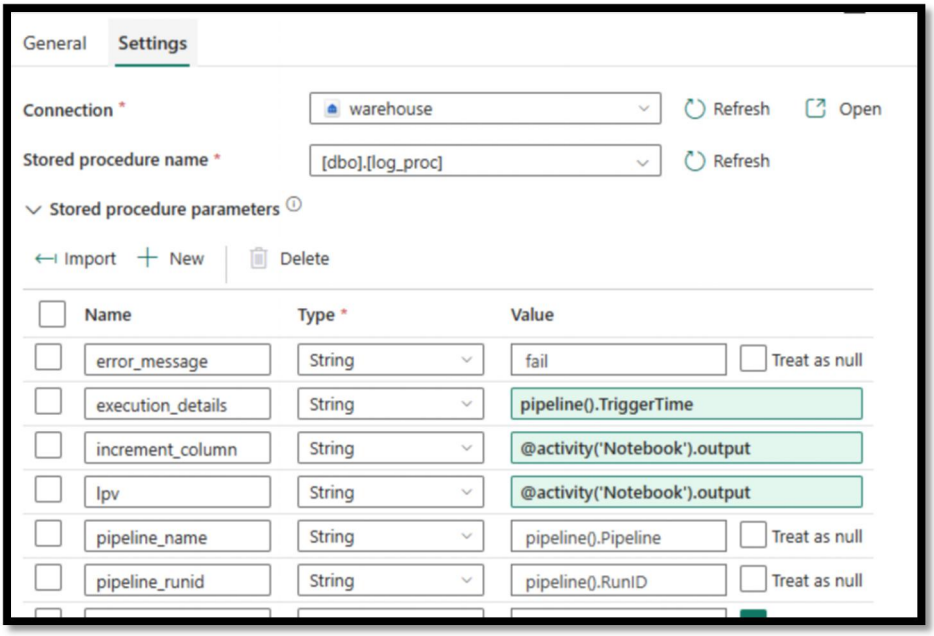


Final pipeline having notebook ,stored procedure and web activity run successfully.

NANDINI RATHORE

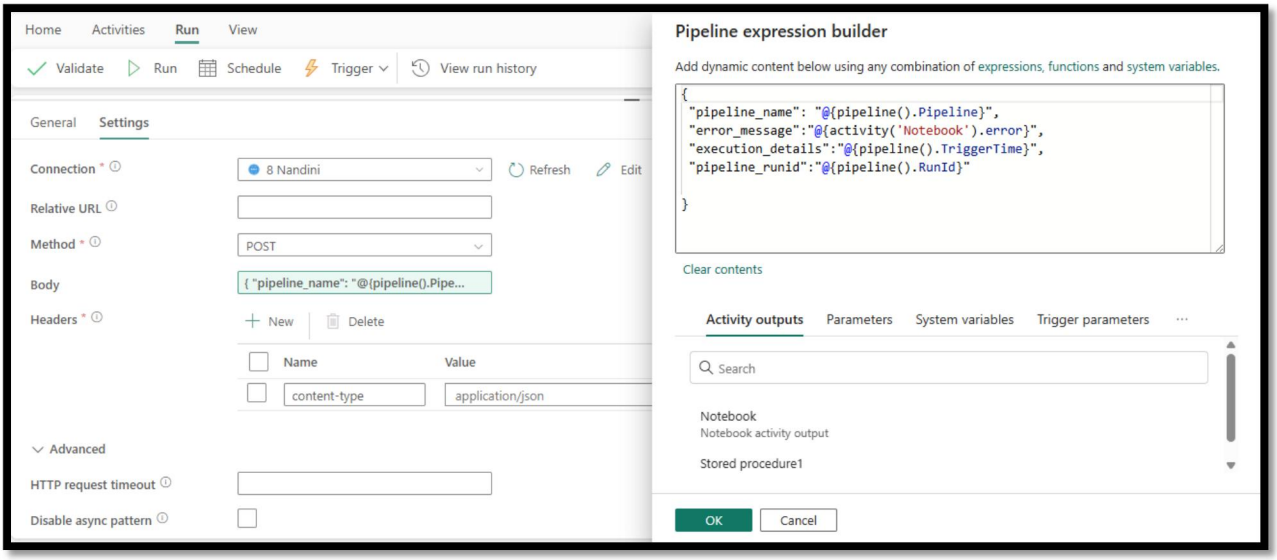


Stored procedure for success pipeline.

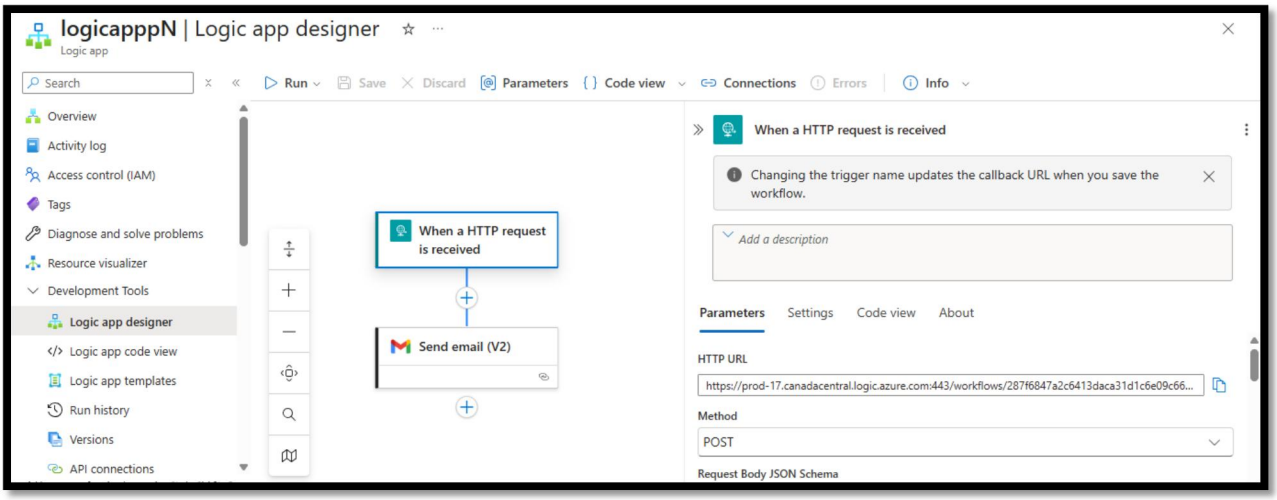


Stored procedure for fail pipeline.

NANDINI RATHORE

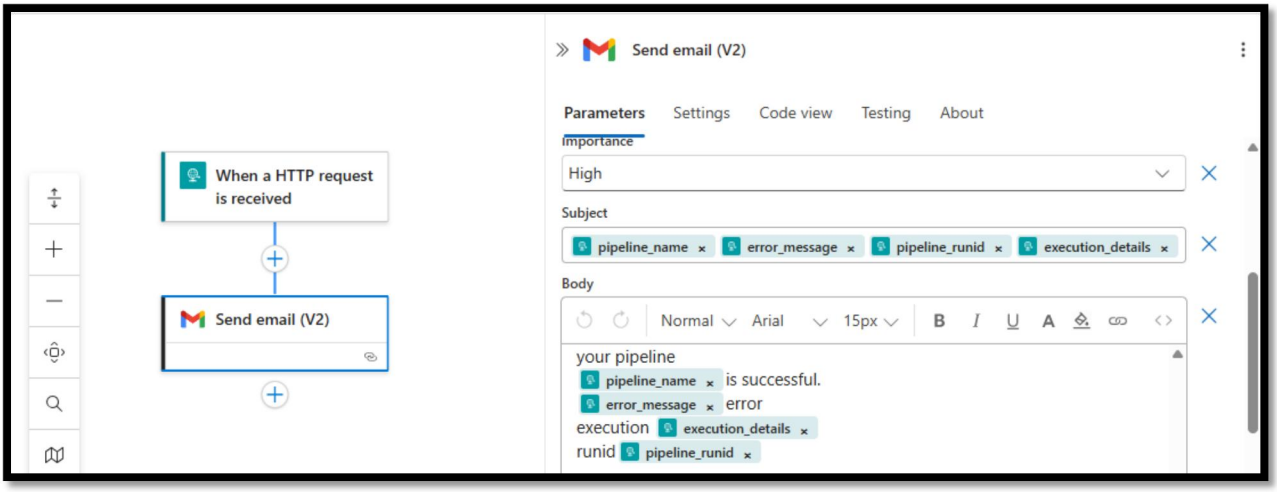


In web activity,in body I wrote this json code to get pipeline details in mail notifications.

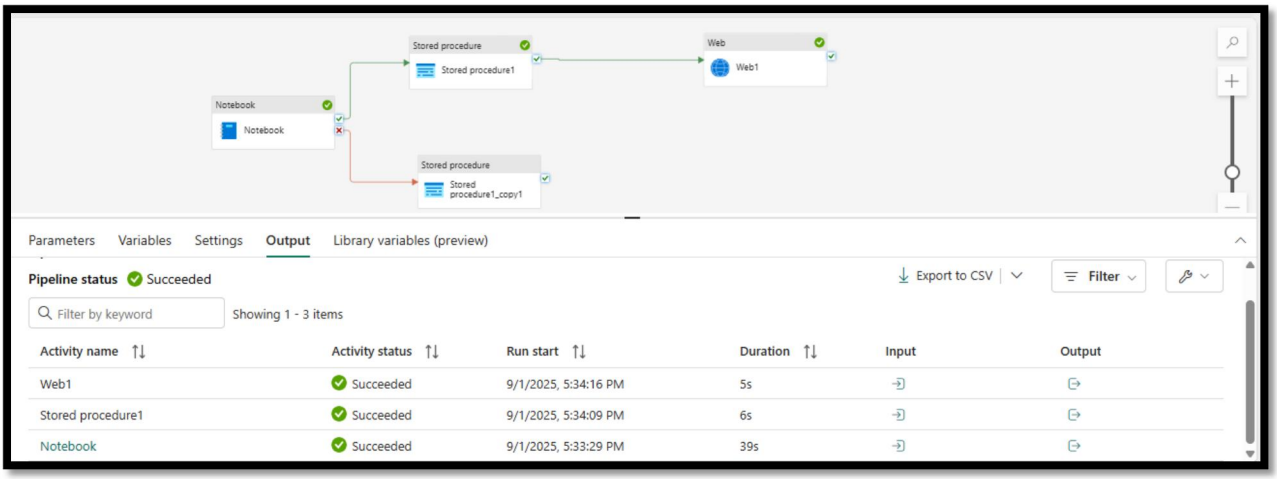


Paste that json code in logic app body and save it ,then copy this url from here.

NANDINI RATHORE



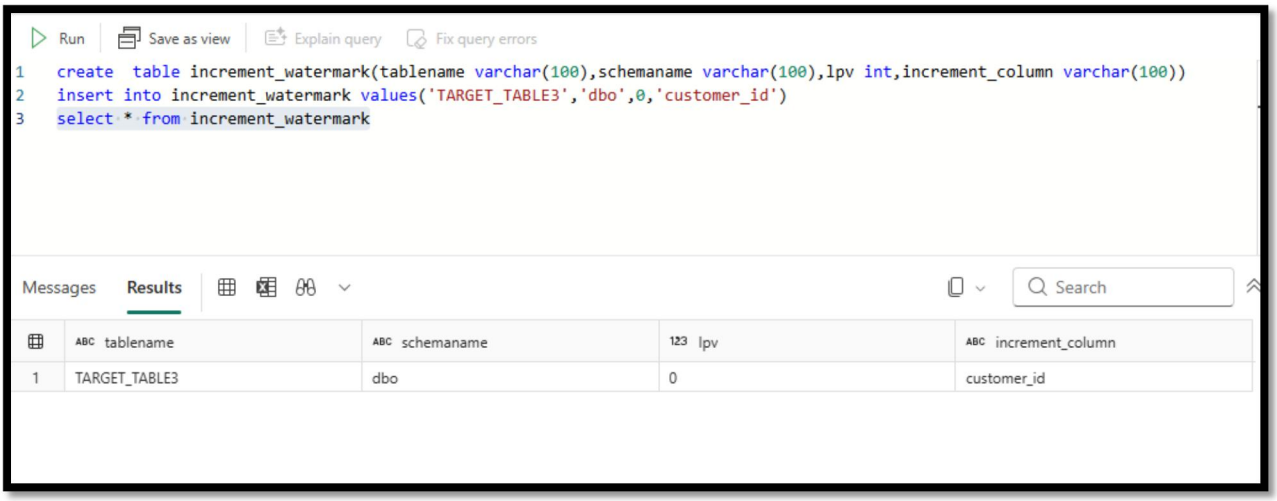
Here in the email,write the message in the body that I want in mail notification.



Paste that url here in web activity connection, run the pipeline.

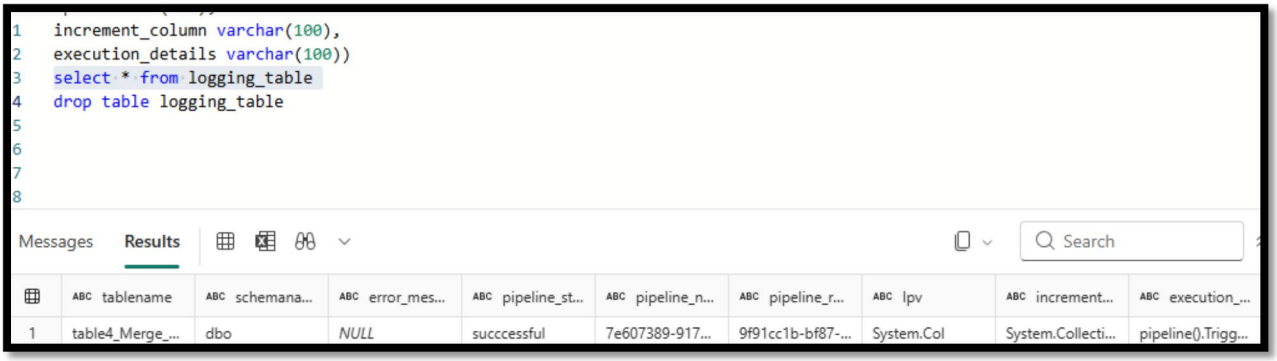
This is the mail notification I get by using logic app and web activity in fabric.

NANDINI RATHORE



This is the watermark table to get last processed value .

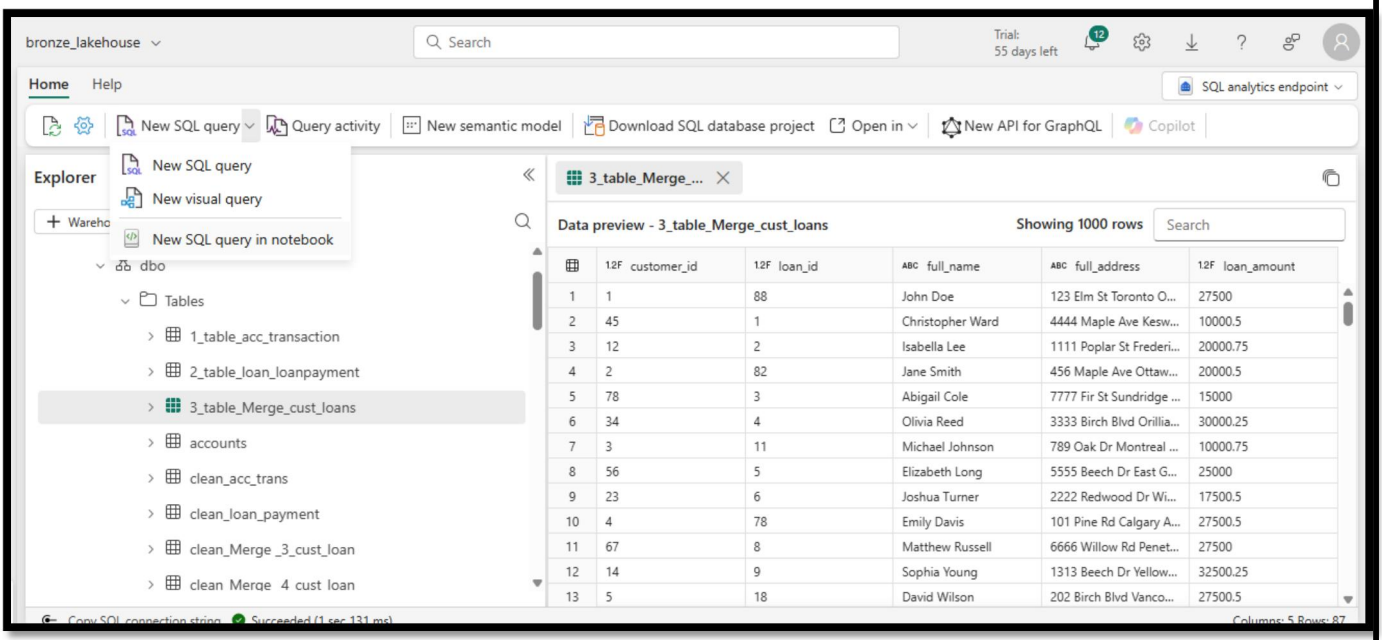
In stored procedure.

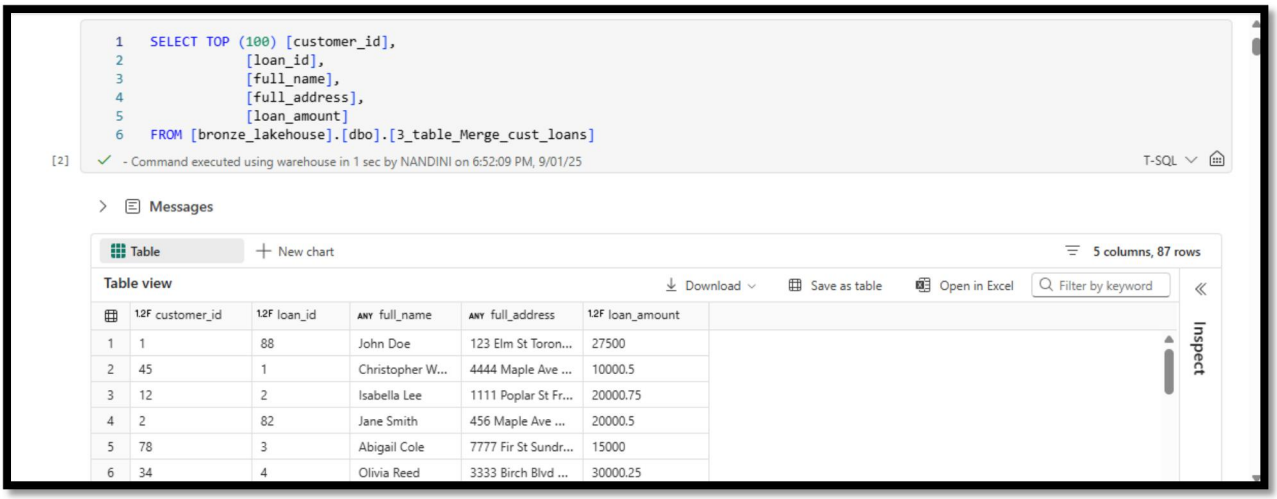


The result here in stored procedure after running pipeline.

NANDINI RATHORE

SCD TYPE1 OF SECOND TABLE.





NANDINI RATHORE

```sql
select src.customer_id,
    src.loan_id,
    src.full_name,
    src.full_address,
    src.loan_amount,
    CONVERT(VARBINARY(32),
    HASHBYTES('SHA2_256',
           CONCAT(
               CAST(src.customer_id AS VARCHAR),
               CAST(src.loan_id AS VARCHAR),
               CAST(src.loan_amount AS VARCHAR),
               src.full_name,
               src.full_address
           ))
       ) AS src_hashkey
FROM [bronze_lakehouse].[dbo].[3_table_Merge_cust_loans] src

```

✓ - Command executed using warehouse in 1 sec by NANDINI on 12:31:59 AM, 8/31/25

T-SQL

alias

```sql
select src.customer_id,
    src.loan_id,
    src.full_name,
    src.full_address,
    src.loan_amount,
    CONVERT(VARBINARY(32),
    HASHBYTES('SHA2_256',
           CONCAT(
               CAST(src.customer_id AS VARCHAR),
               CAST(src.loan_id AS VARCHAR),
               CAST(src.loan_amount AS VARCHAR),
               src.full_name,
               src.full_address
           ))
       ) AS src_hashkey
FROM [bronze_lakehouse].[dbo].[3_table_Merge_cust_loans] src
left join [NEW_TARGET_TABLE] tgt
on  src.customer_id=tgt.customer_id
AND CONVERT(VARBINARY(32),
HASHBYTES('SHA2_256',
```

```sql
HASHBYTES('SHA2_256',
           CONCAT(
               CAST(src.customer_id AS VARCHAR),
               CAST(src.loan_id AS VARCHAR),
               CAST(src.loan_amount AS VARCHAR),
               src.full_name,
               src.full_address
           ))
       )=tgt.hashkey;


```

✓ - Command executed using warehouse in 1 sec by NANDINI on 12:22:14 AM, 8/31/25

Messages

Table | New chart

Table view

Download | Save as t

	customer_id	loan_id	full_name	full_address	loan_amount	src_hashkey
1	23	6	Joshua Turner	2222 Redwood ...	17500.5	0x7007C679B01...
2	8	68	Olivia Garcia	707 Fir St Edmon...	27500	0x876035997BA...
3	56	5	Elizabeth Long	5555 Beech Dr E...	25000	0x4661BA82252...

NANDINI RATHORE

left join

```
update tgt
 SET
      tgt.customer_id=src.customer_id,
      tgt.loan_id=src.loan_id,
      tgt.full_name=src.full_name,
      tgt.full_address=src.full_address,

      tgt.loan_amount=src.loan_amount,
      tgt.hashkey=src.src_hashkey,
      updateddate=getdate(),
      updatedby='fabric-updated'
FROM [NEW_TARGET_TABLE] tgt
 join (
    SELECT *,
          CONVERT(VARBINARY(32),
           HASHBYTES('SHA2_256',
               CONCAT(
                   CAST(customer_id AS VARCHAR),
                   CAST(loan_id AS VARCHAR),
                   CAST(loan_amount AS VARCHAR),
                   full_name,
                   full_address
               ))
          )AS src_hashkey
    FROM [bronze_lakehouse].[dbo].[3_table_Merge_cust_loans]) AS src
on tgt.customer_id=src.customer_id
where  tgt.hashkey <> src.src_hashkey
  OR tgt.hashkey IS NULL;
```

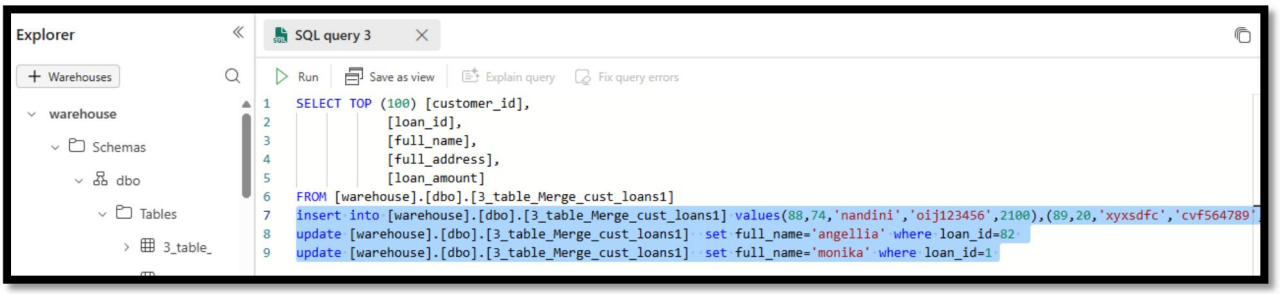
```
INSERT INTO NEW_TARGET_TABLE
(customer_id, loan_id, full_name, full_address, loan_amount, hashkey, createdby, createddate, updatedby, updateddate)
SELECT customer_id, loan_id, full_name, full_address,loan_amount,
CONVERT(VARBINARY(32),
       HASHBYTES('SHA2_256',
           CONCAT(
               CAST(customer_id AS VARCHAR),
               CAST(loan_id AS VARCHAR),
               CAST(loan_amount AS VARCHAR),
               full_name,
               full_address
           ))
       ),
       'fabric', GETDATE(), 'fabric', GETDATE()
FROM bronze_lakehouse.dbo.[3_table_Merge_cust_loans] src
WHERE NOT EXISTS (
    SELECT 1 FROM NEW_TARGET_TABLE tgt
    WHERE tgt.customer_id = src.customer_id
);

- Command executed in 1 sec by NANDINI on 12:35:09 AM, 8/31/25                T-SQL
```

NANDINI RATHORE

UPDATE SOURCE TABLE.

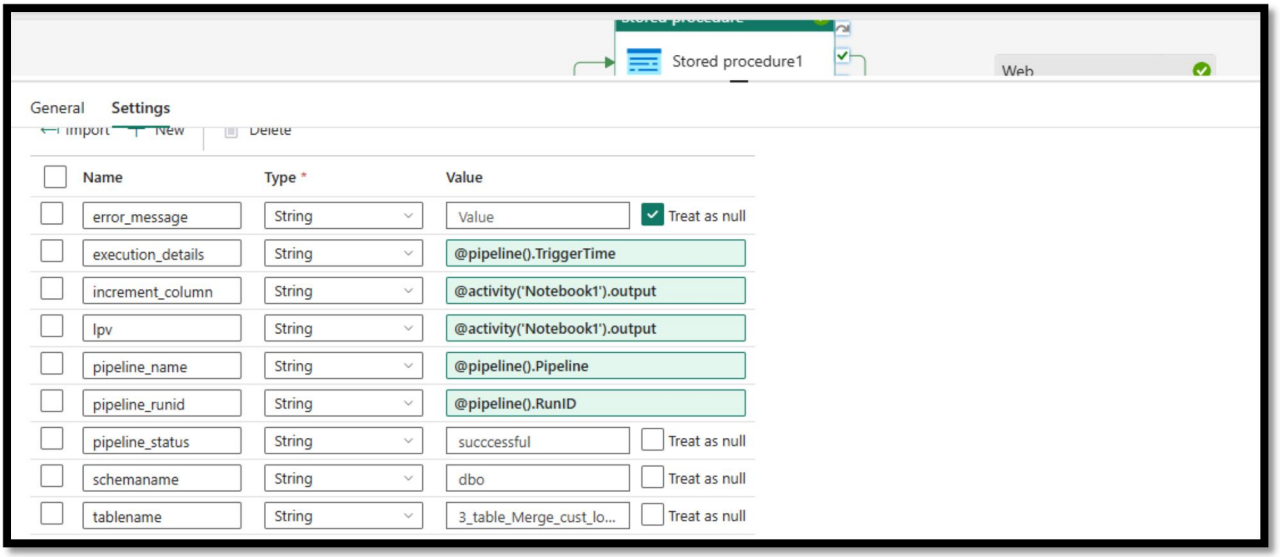
```
1   SELECT TOP (100) [customer_id],
2                    [loan_id],
3                    [full_name],
4                    [full_address],
5                    [payment_id],
6                    [balance_loan_amount]
7   FROM [dbo].[3_table_Merge_cust_loans1]
```

1] ✓ - Command executed using warehouse in 1 sec by NANDINI on 2:33:54 PM, 8/31/25

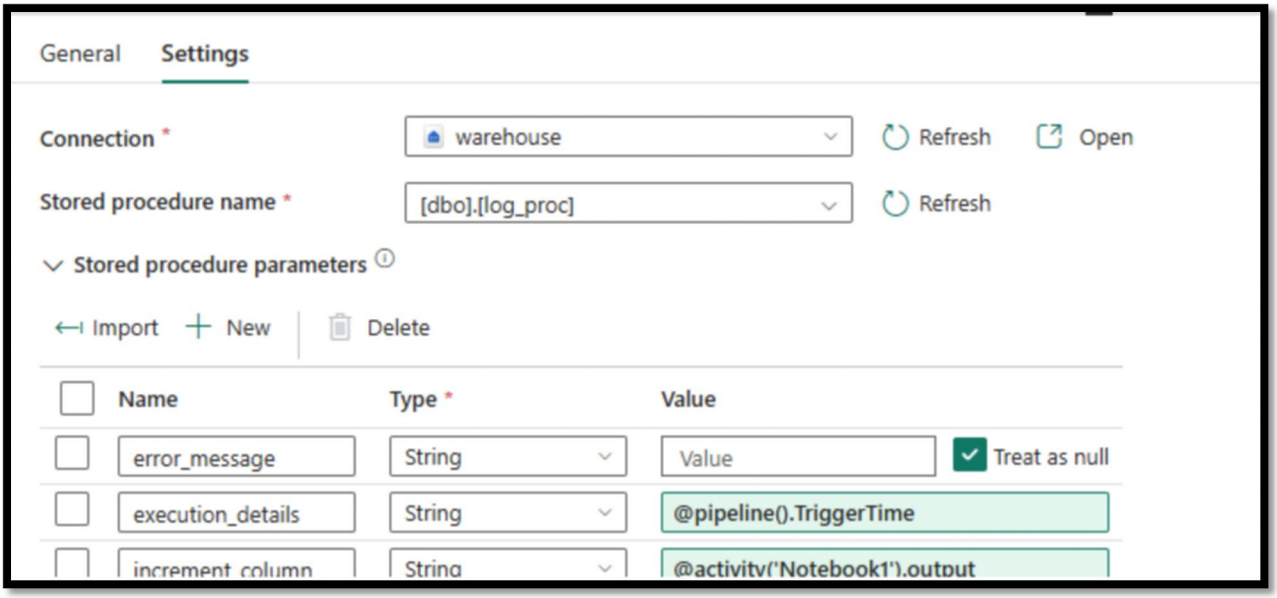


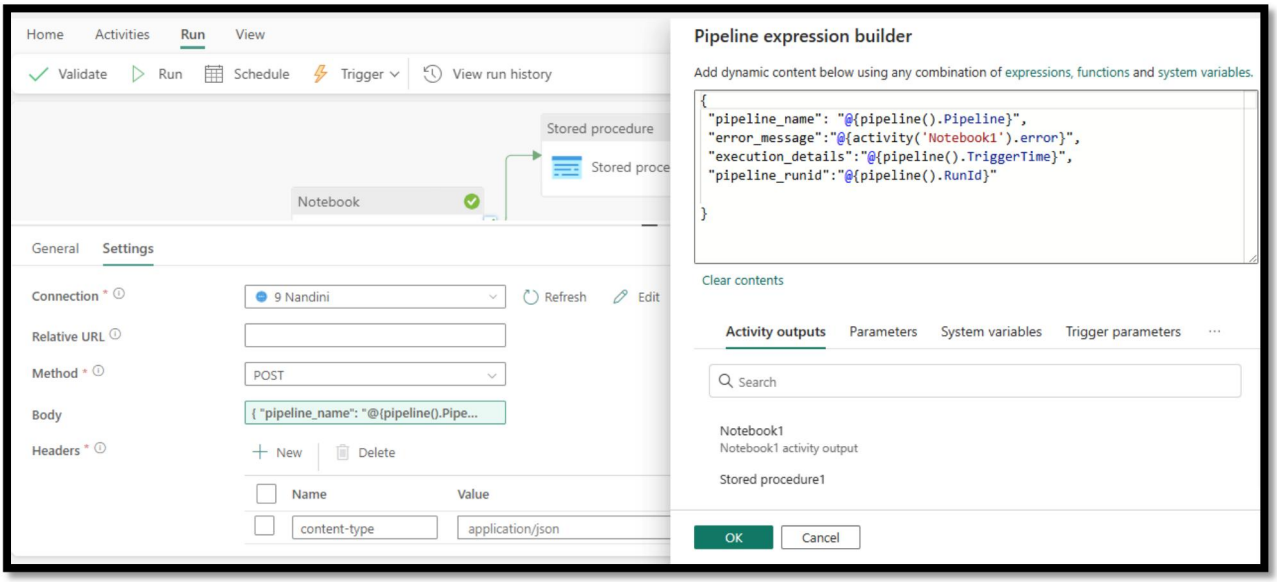
AFTER RUN ALL THE CODE ,WE GET UPDATED ROWS AND NEW INSERT ROWS IN A TABLE.

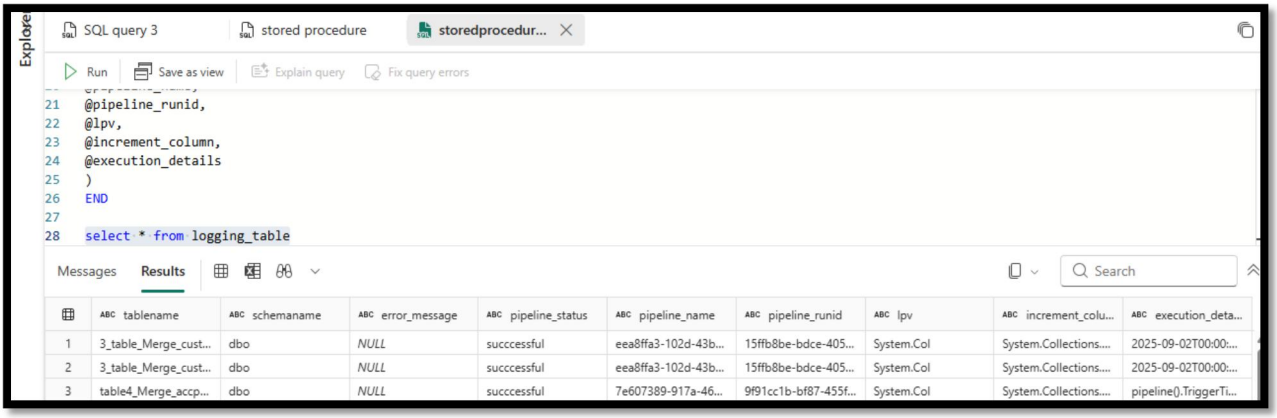
Olivia Gibson	8585 Elm St New...	32	13350	fabric	2025-08-31 04:3...	fabric	2025-08-31 04:3...	0xC6437E79..
William McDo...	N/A	52	12350	fabric	2025-08-31 04:3...	fabric	2025-08-31 04:3...	0xB159CDA9.
joy smith	123 Elm St Toron...	17	26600	fabric	2025-08-31 04:3...	fabric-updated	2025-08-31 18:4...	0x0E07CC0B..
Joshua Bennett	4800 Spruce Ln ...	27	26100	fabric	2025-08-31 04:3...	fabric-updated	2025-08-31 18:4...	0x86F35E101.



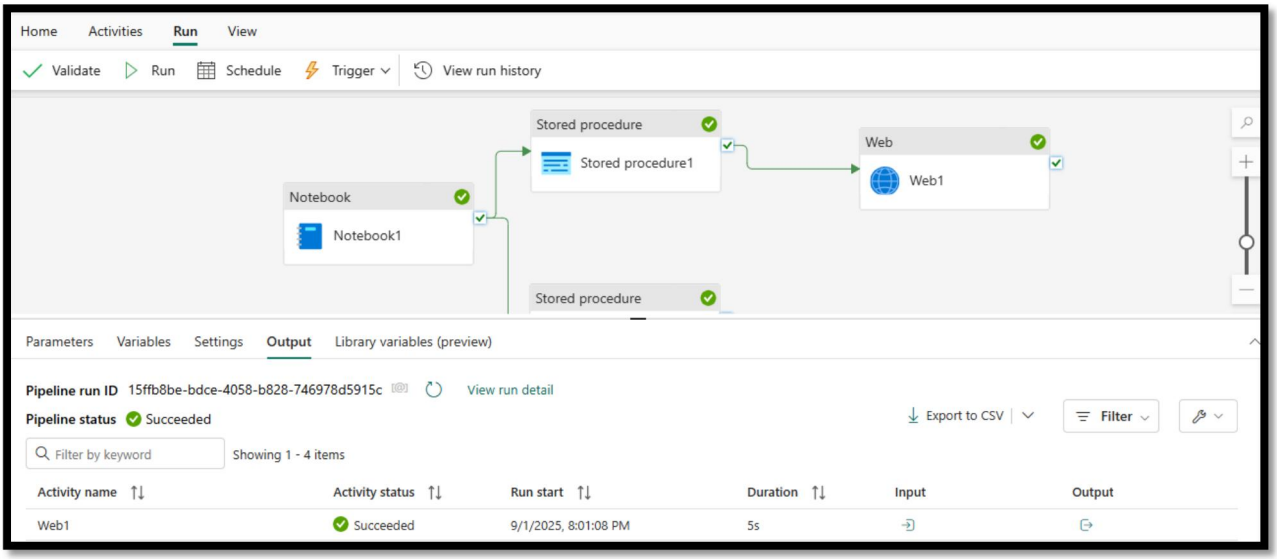
NANDINI RATHORE



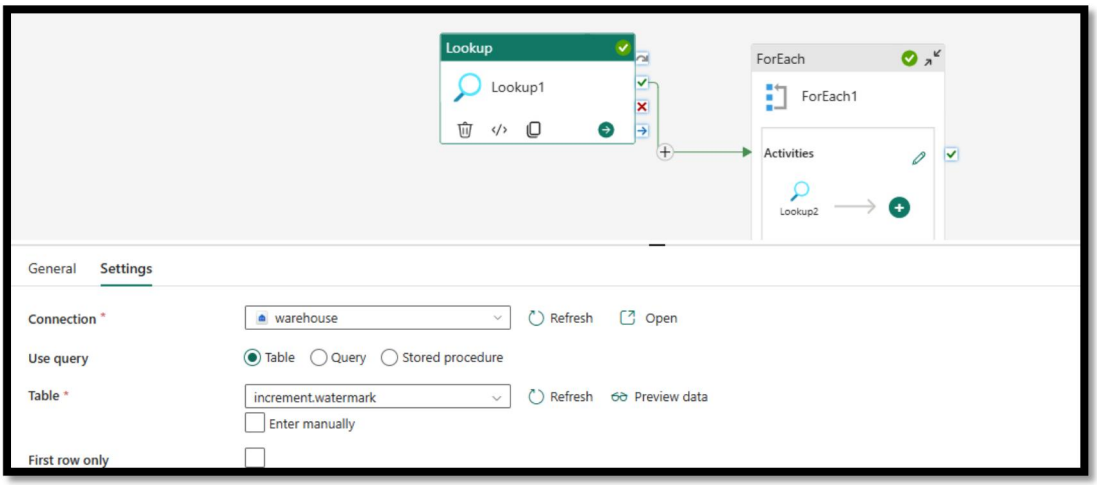




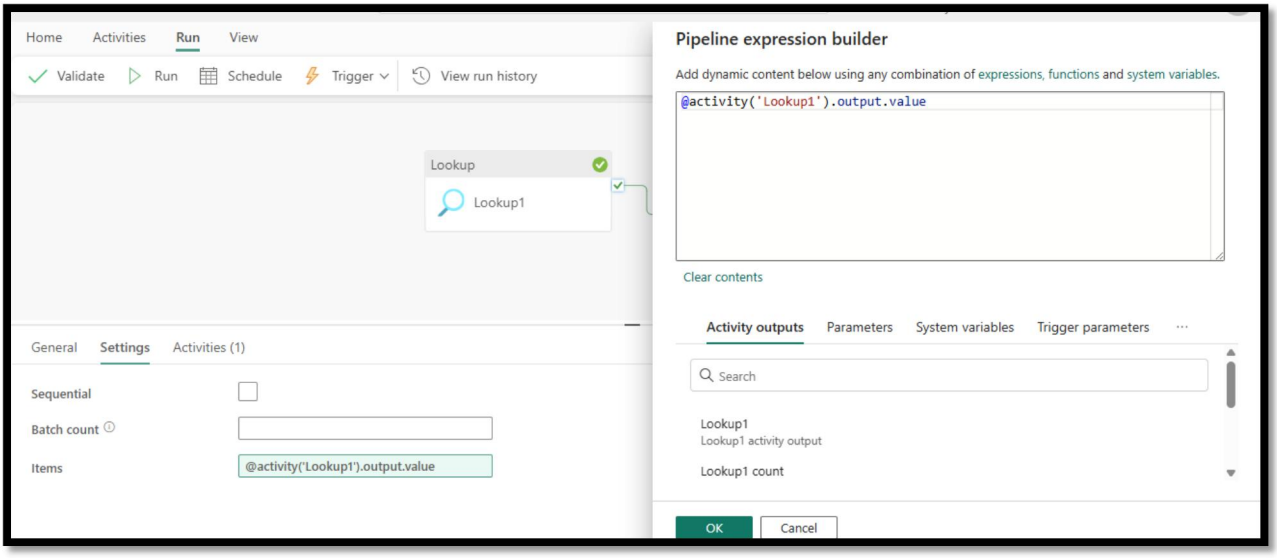
NANDINI RATHORE

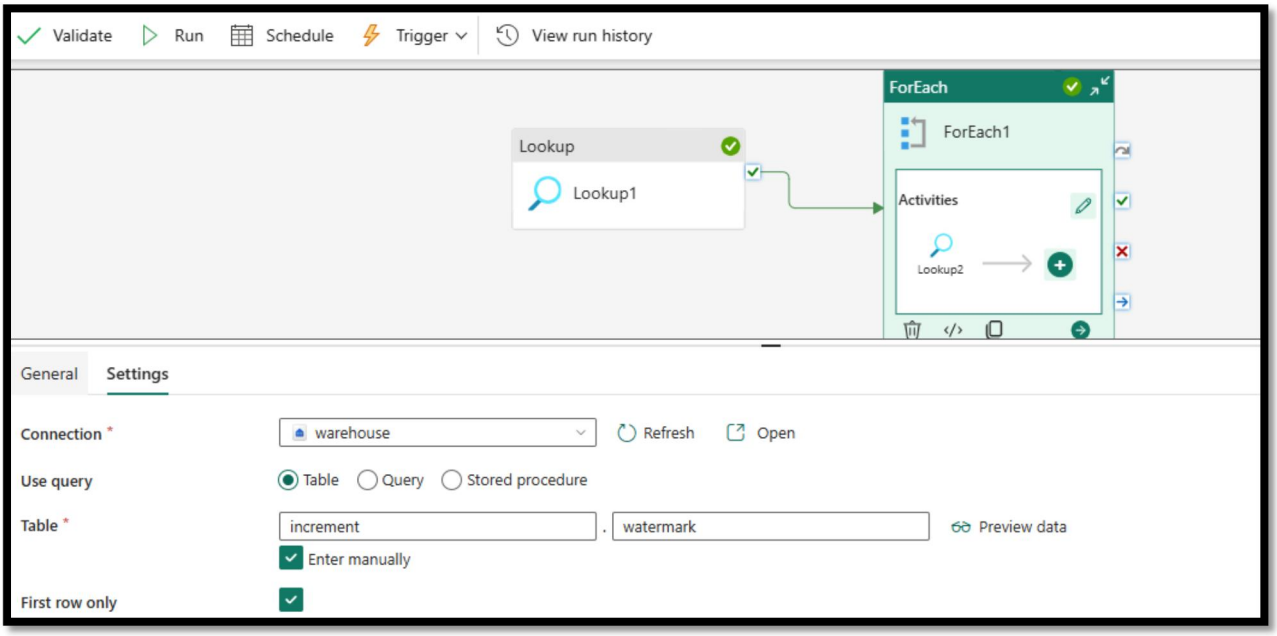


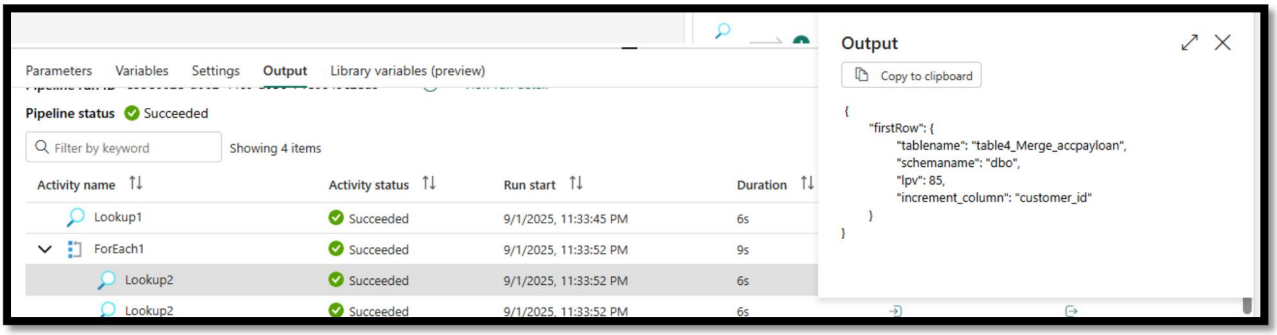
Incremental loading check max value of incremental_column.



NANDINI RATHORE







NANDINI RATHORE

```
6   select max(customer_id) as maxvalues from [dbo].[3_table_Merge_cust_loans1] WHERE customer_id>85
```

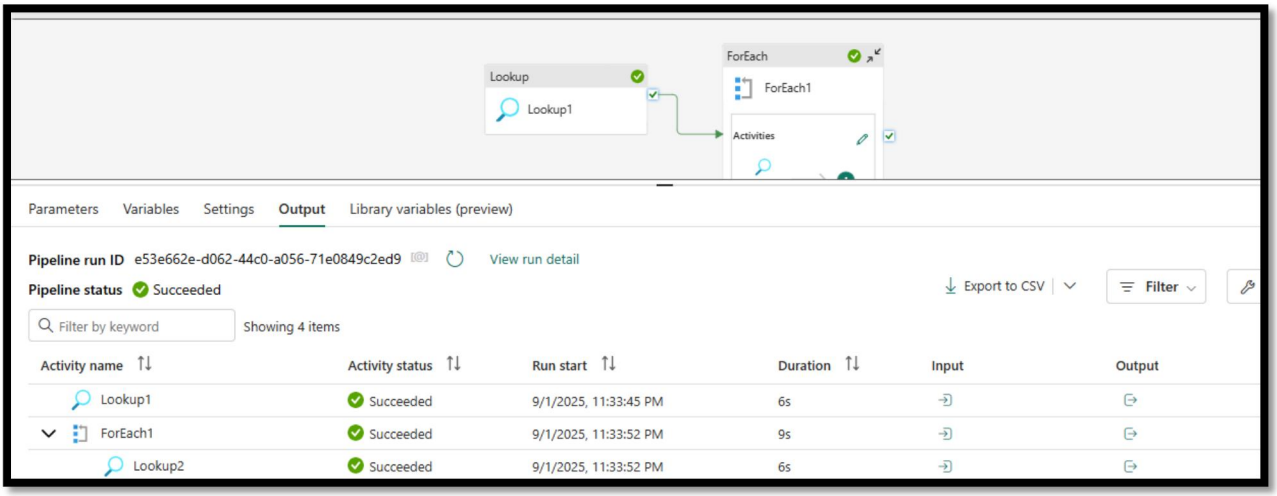
Messages Results Search

	maxvalues
1	89

```
1   SELECT TOP (100) [customer_id],
2                    [loan_id],
3                    [full_name],
4                    [full_address],
5                    [loan_amount]
6   FROM [warehouse].[dbo].[3_table_Merge_cust_loans1]
7   insert into [warehouse].[dbo].[3_table_Merge_cust_loans1] values(90,25,'raghav','5874 bhggfrt',22)
```

Messages Results Search

	customer_id	loan_id	full_name	full_address	loan_amount
1	90	25	raghav	5874 bhggfrt	22



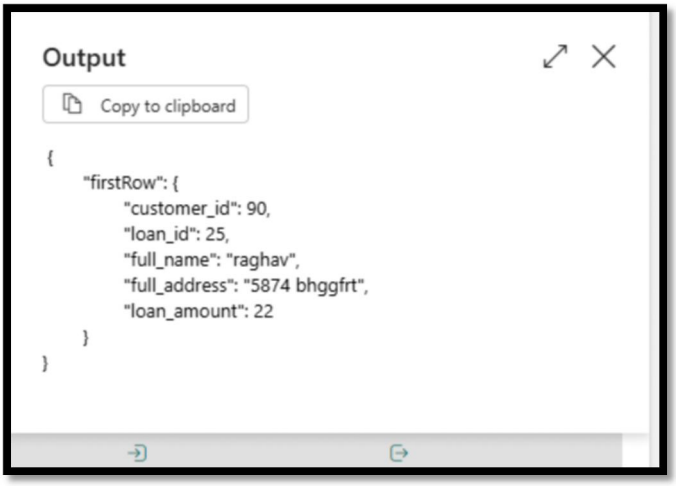
After increment loading

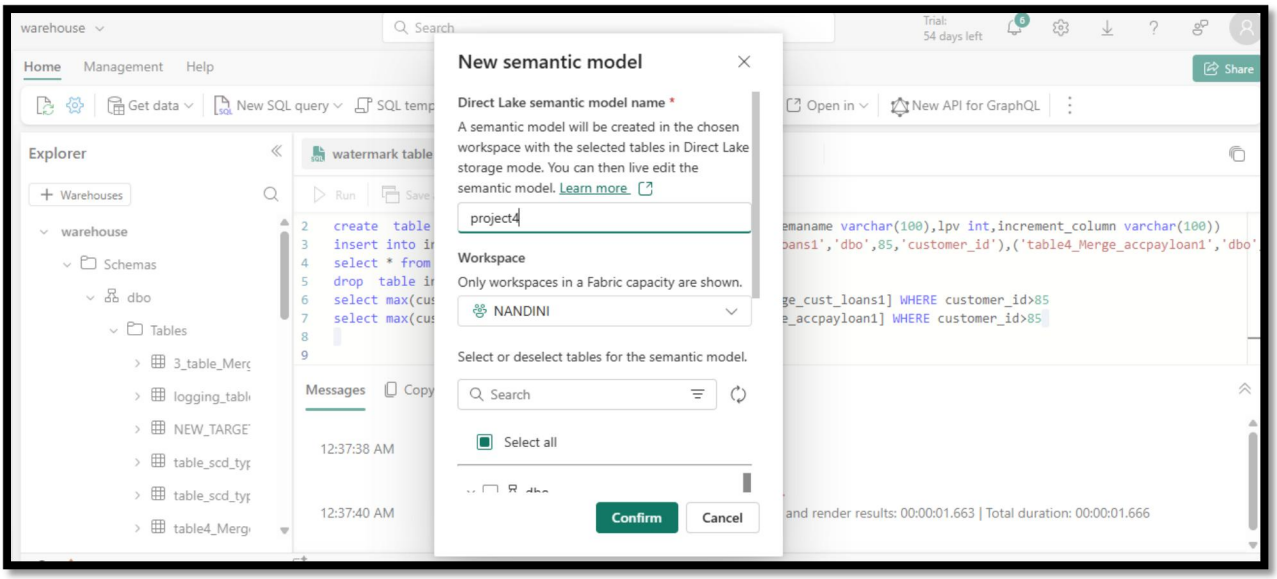
```
6   select max(customer_id) as maxvalues from [dbo].[3_table_Merge_cust_loans1] WHERE customer_id>85
7
8
```

Messages Results Search

	maxvalues
1	90

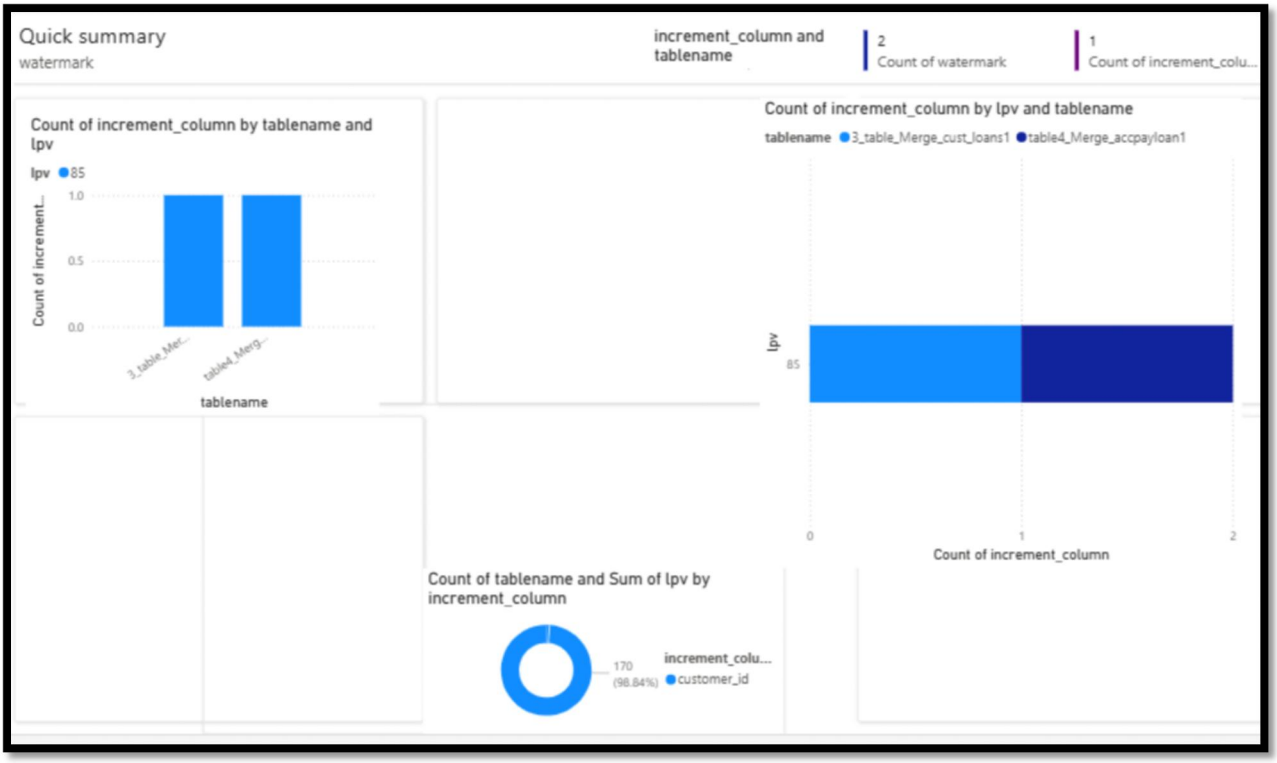
NANDINI RATHORE





SAVE IT AS SEMANTIC MODEL.OPEN POWER BI,SELECT PROJECT4 THE SEMANTIC MODEL WHICH IS SAVED AND VIEW ITS REPORT.

NANDINI RATHORE



Report in Power BI.

PROJECT-03

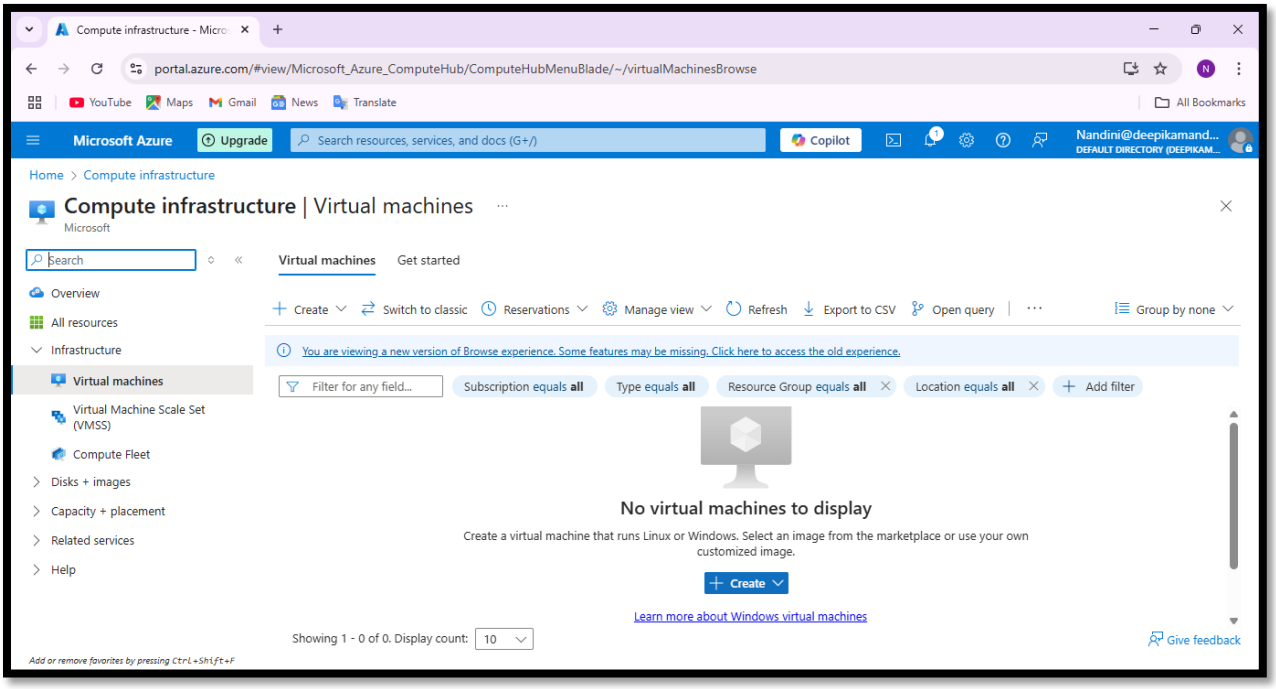
Design a dynamic pipeline that facilitates the workflow

NANDINI RATHORE

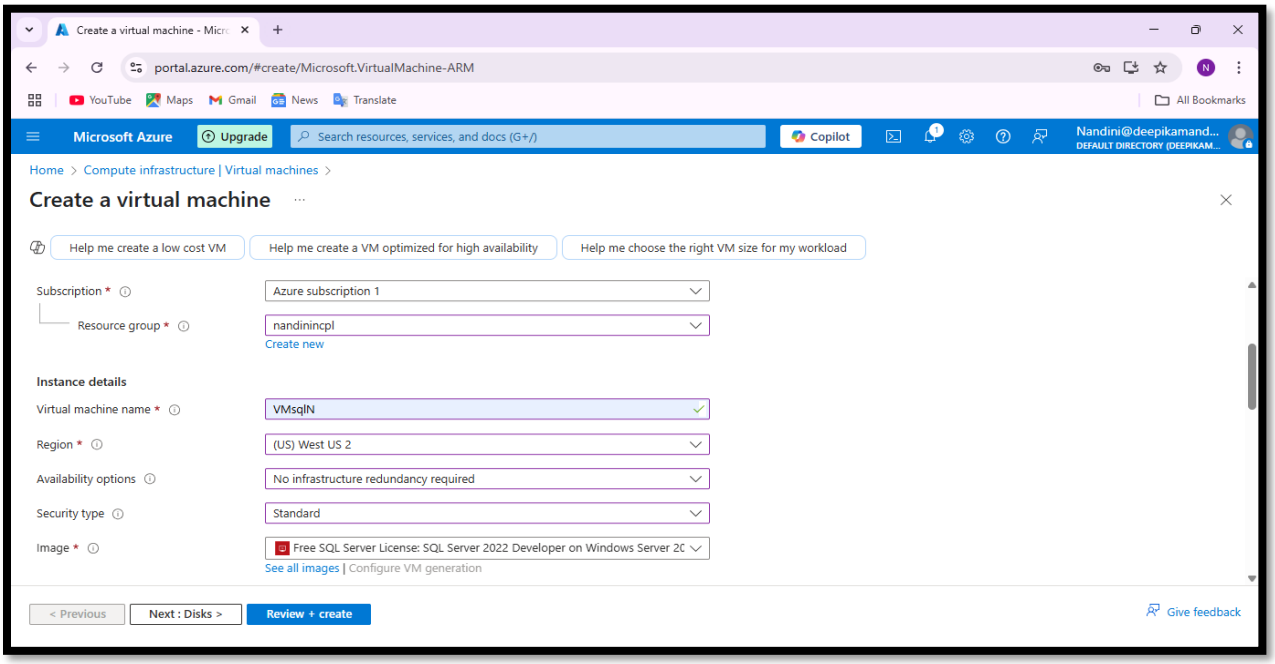
INDEX

Design a dynamic pipeline that facilitates the following workflow:

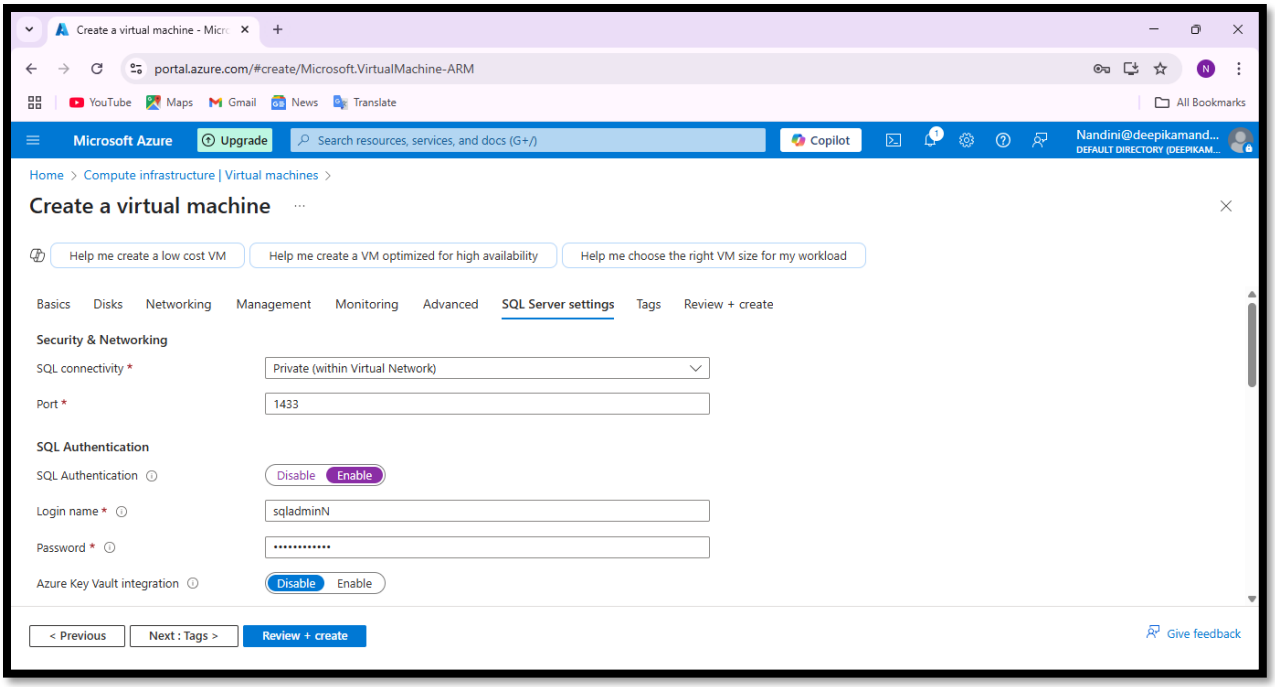
1. Extract data from 5 tables from an on-premises SQL Server.

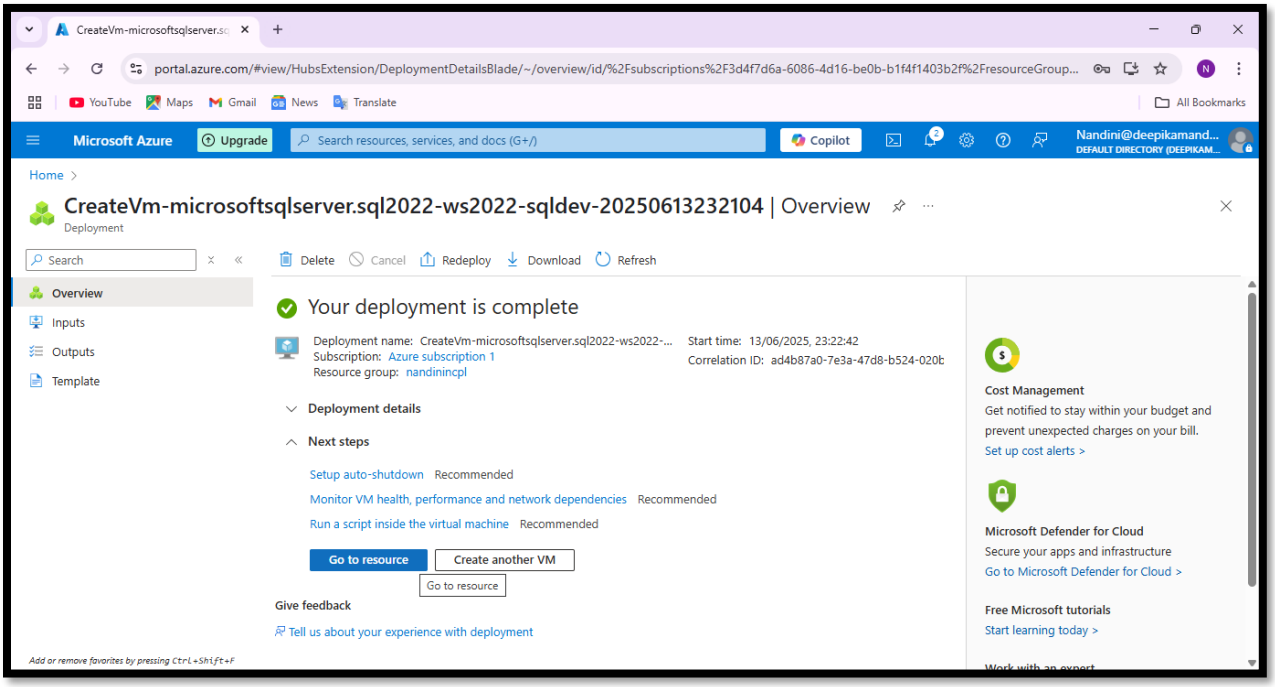


1. Create VM.

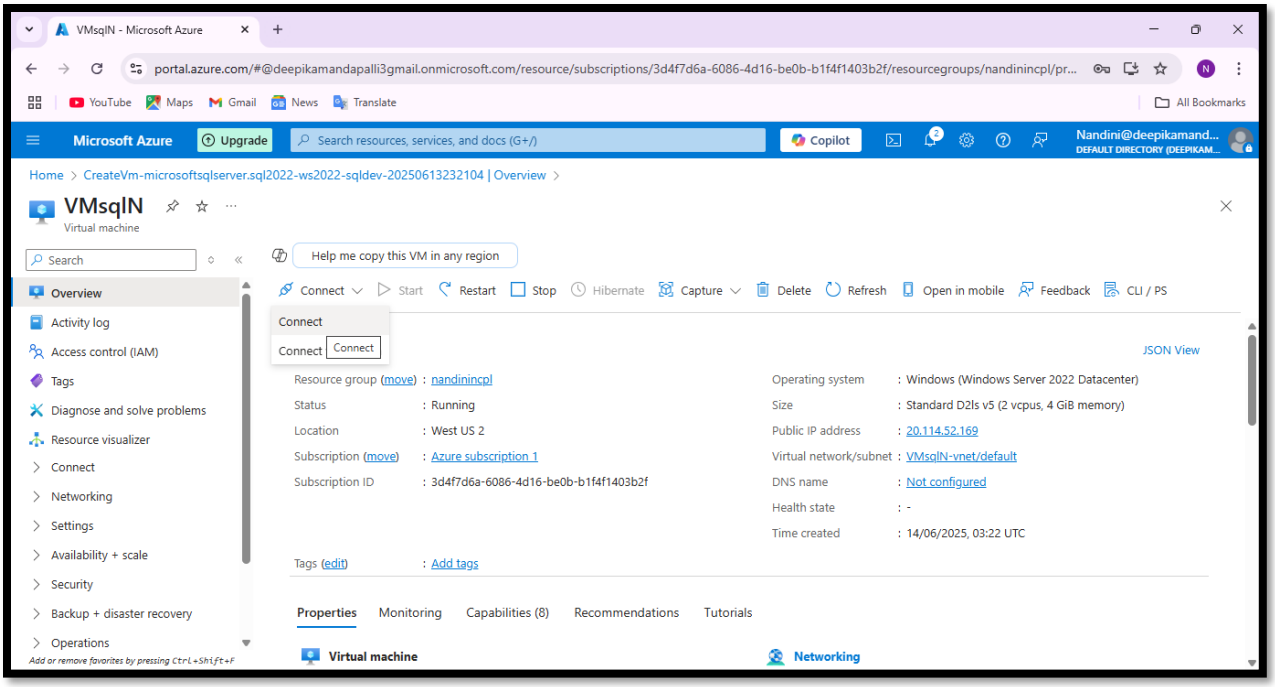


2. ADDING DETAILS.

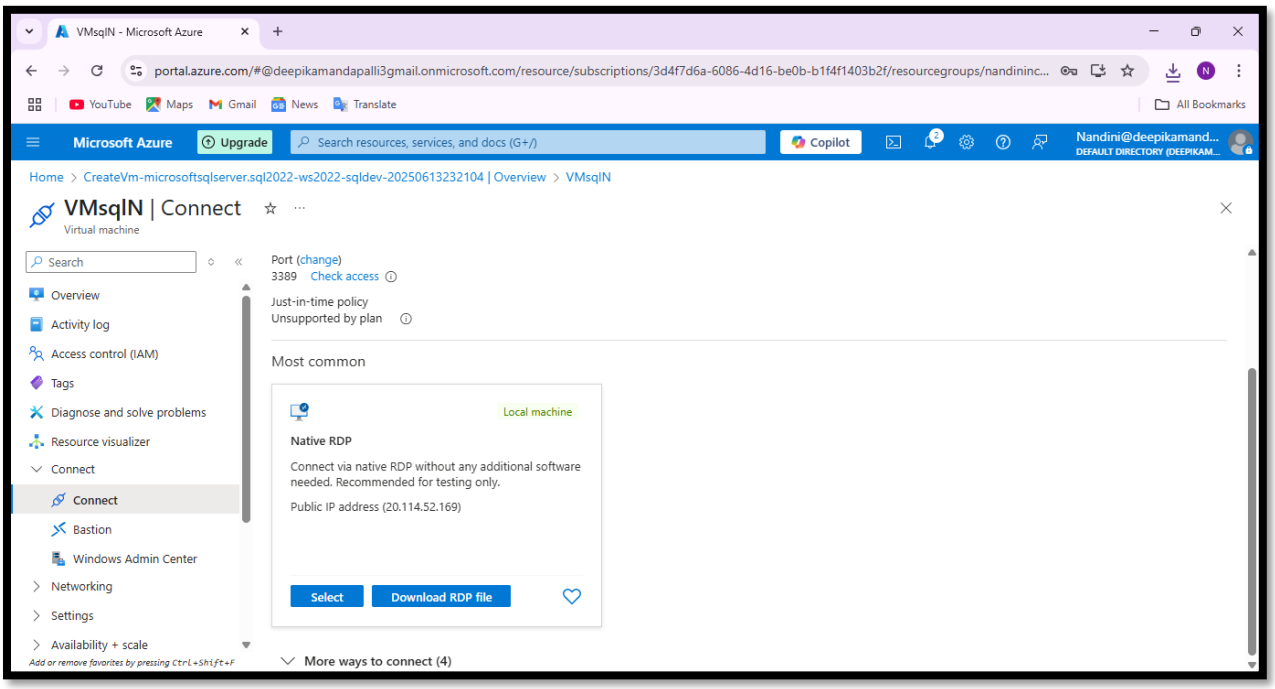




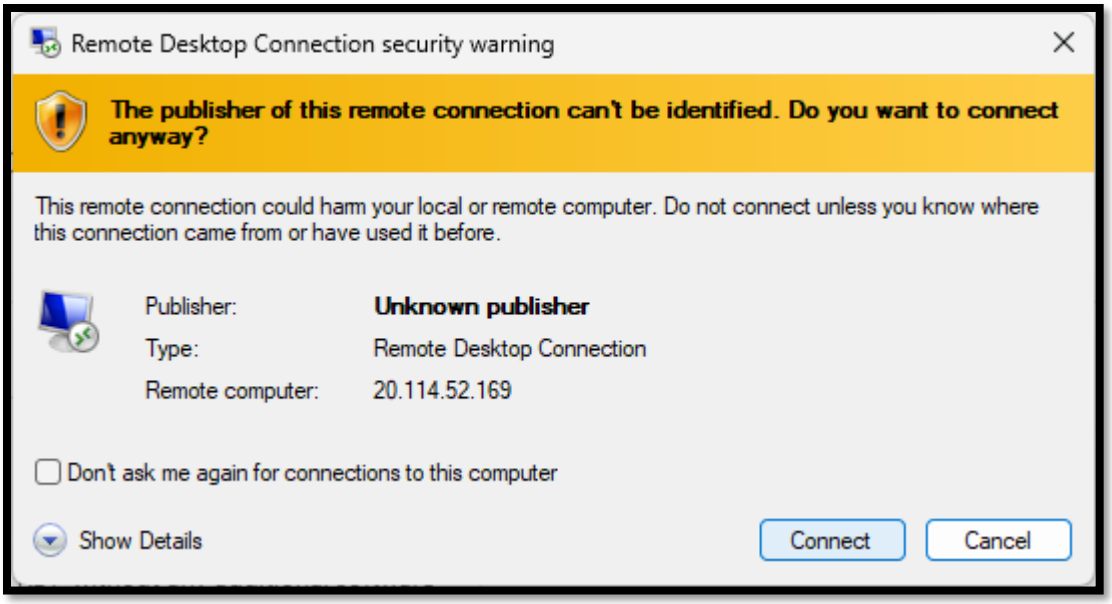
3. GO TO RESOURCES.



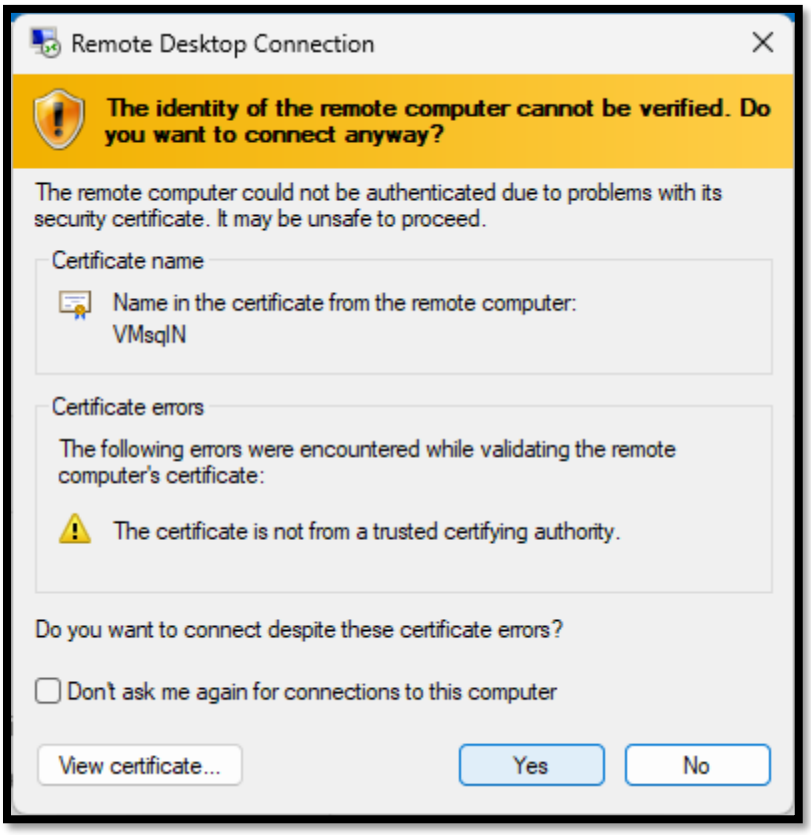
4.CONNECT VM.

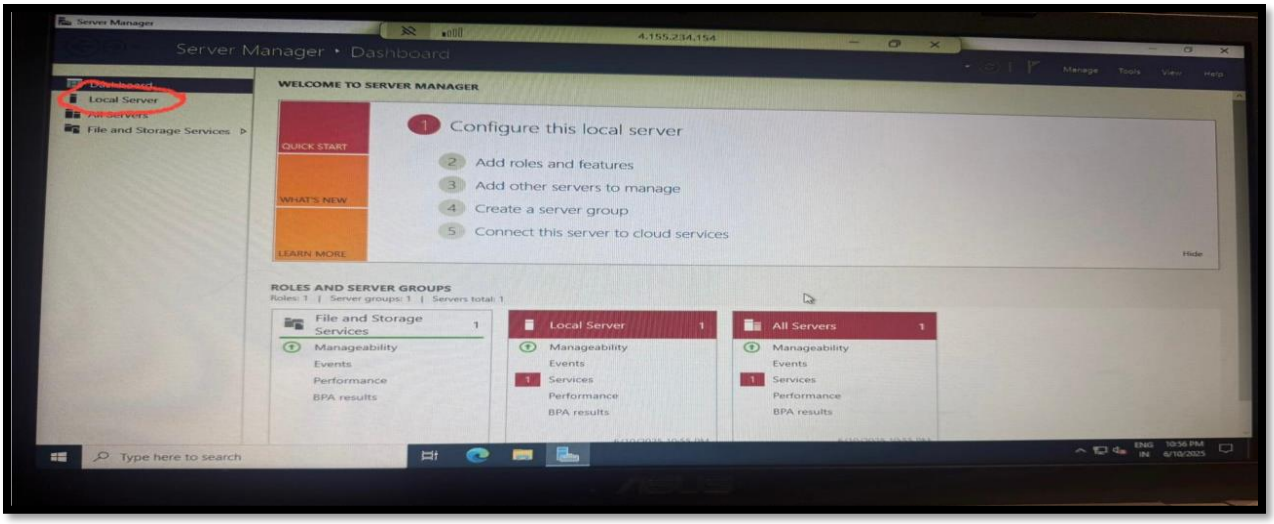


4. DOWNLOAD RDP FILE.

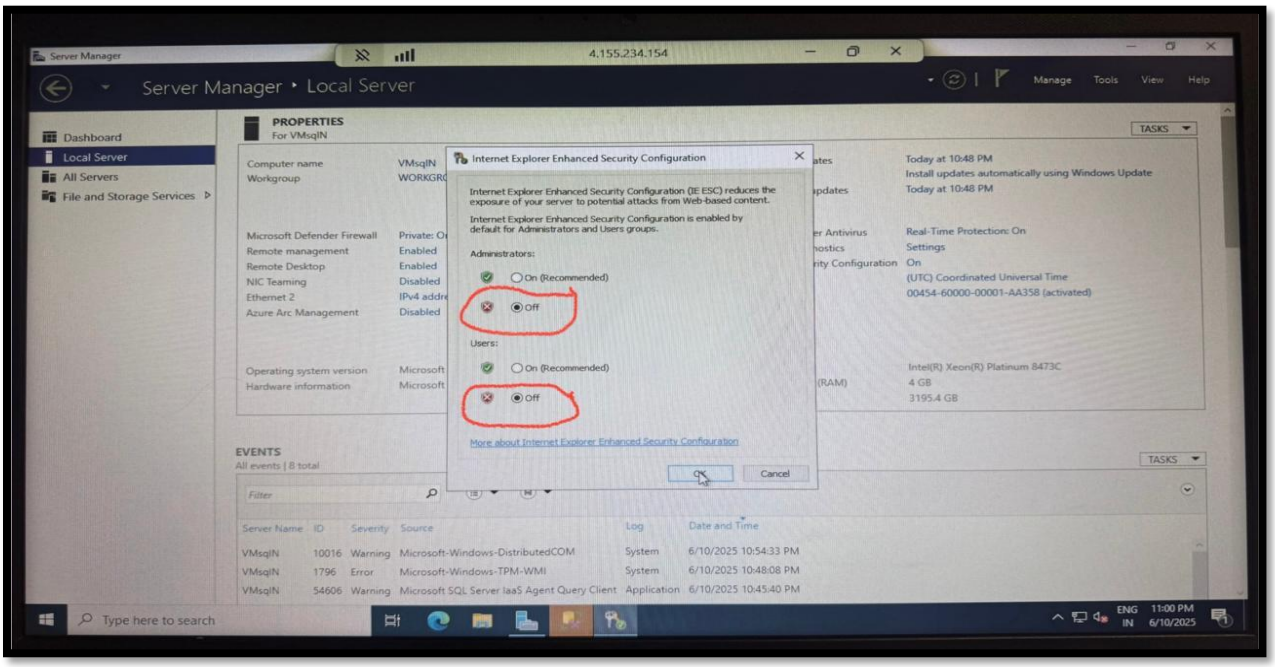


5. CONNECT IT WITH SERVER.

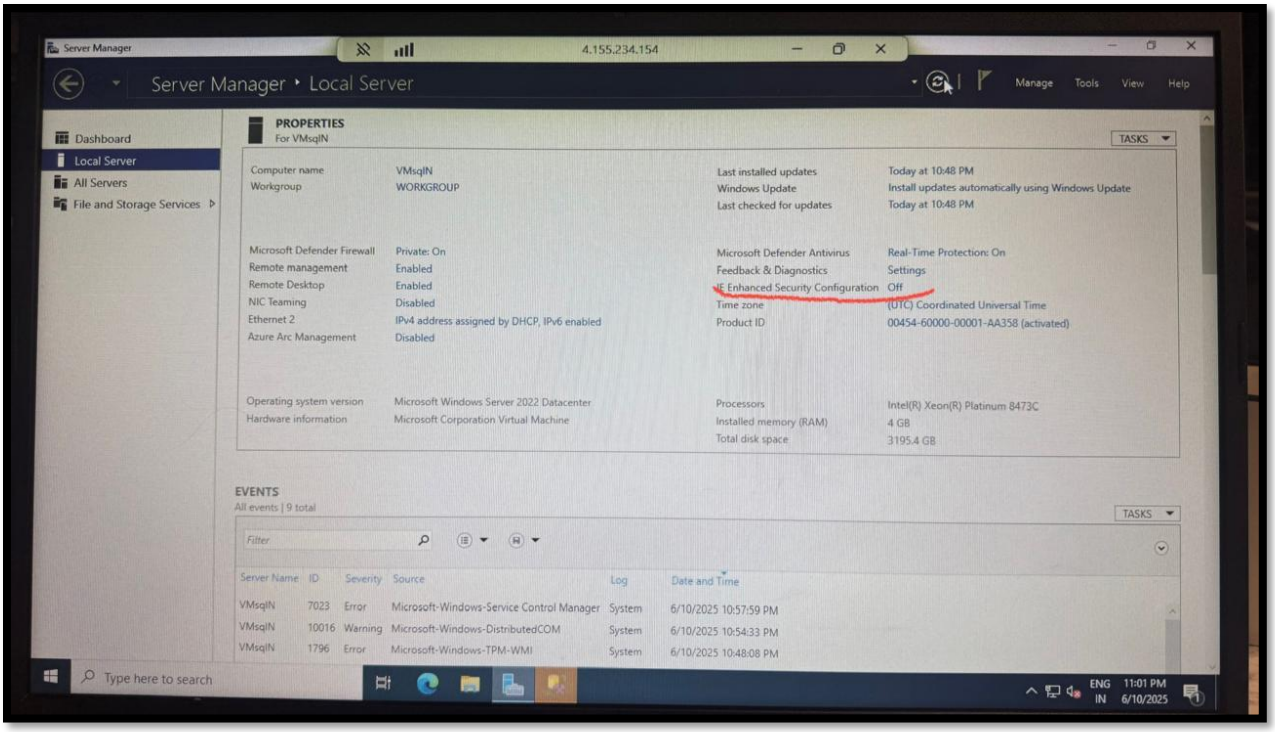


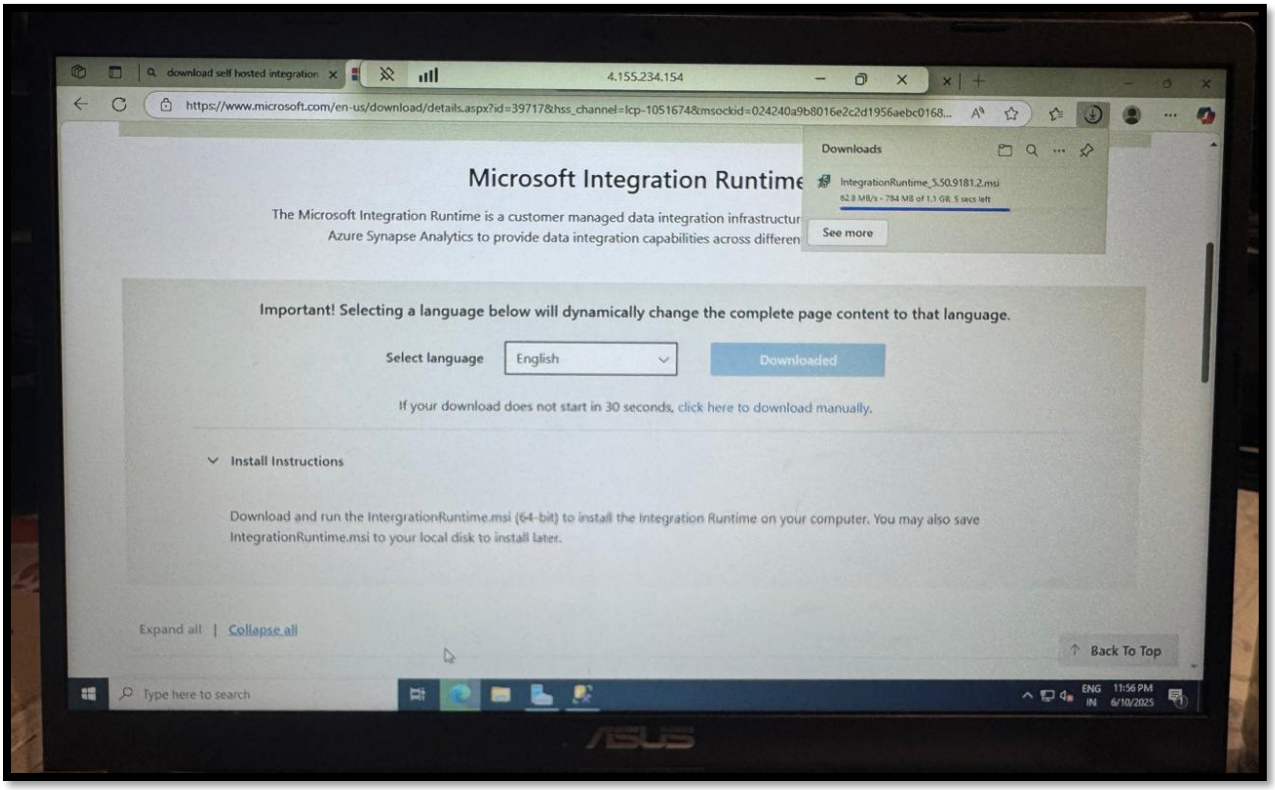


6.AFTER CONNECT WITH VM THIS SCREEN APPEARED ,SELECT LOCAL SERVER.

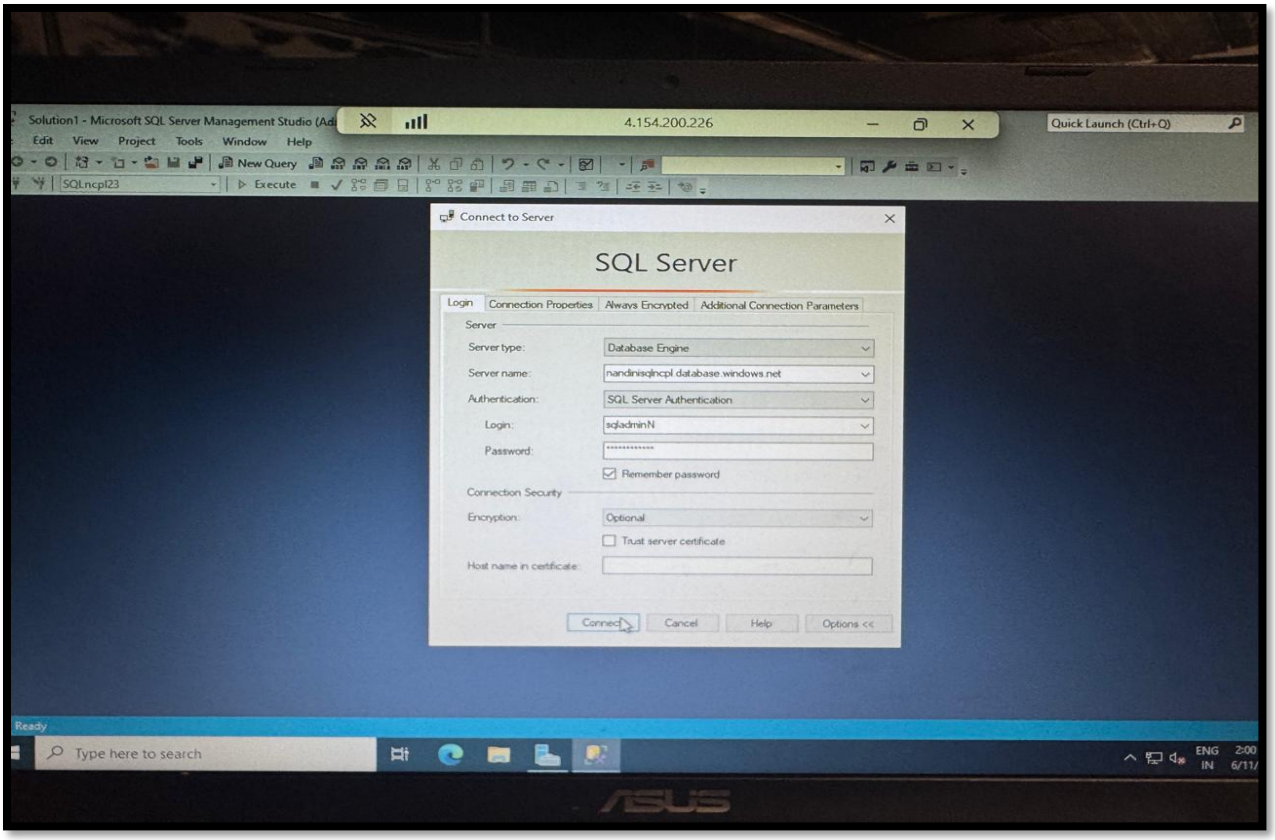


7.NOW SELECT ‘OFF’ FOR BOTH ADMINISTRATOR AND USERS.

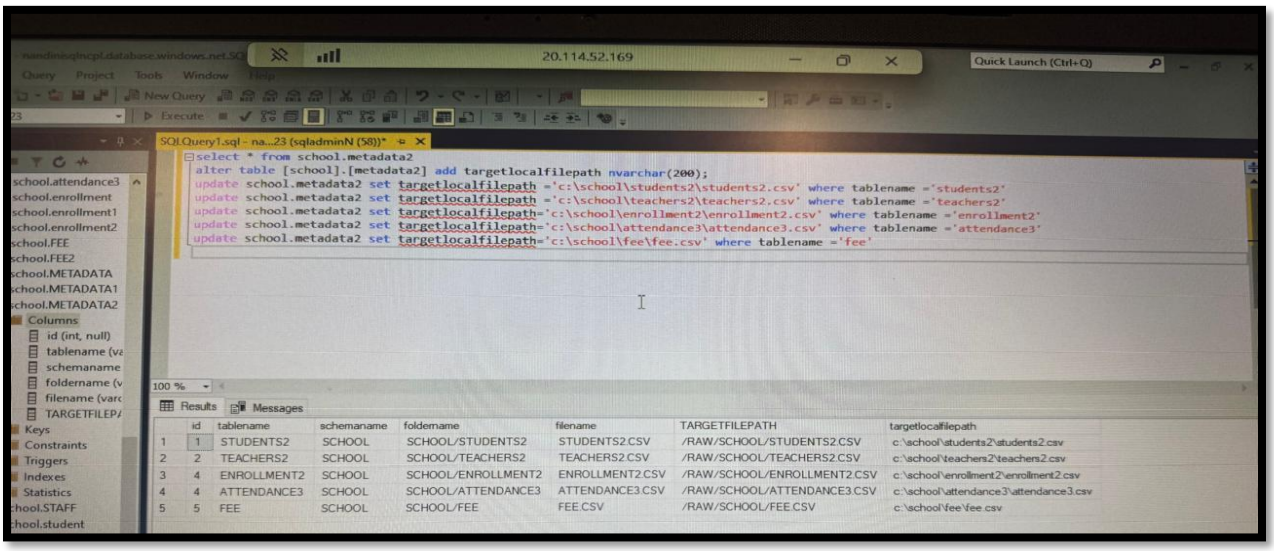




7.DOWNLOAD SELF-HOSTED IR.

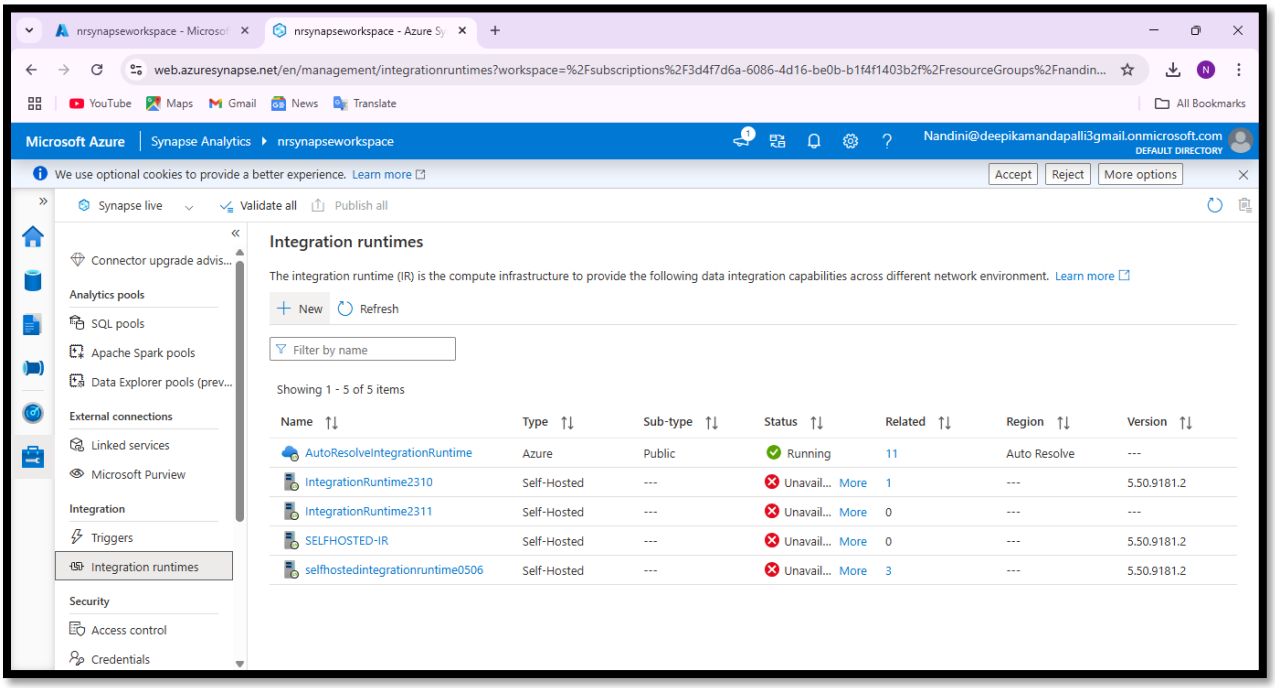


8. OPEN SSMS ,CONNECT IT WITH SQL SERVER.



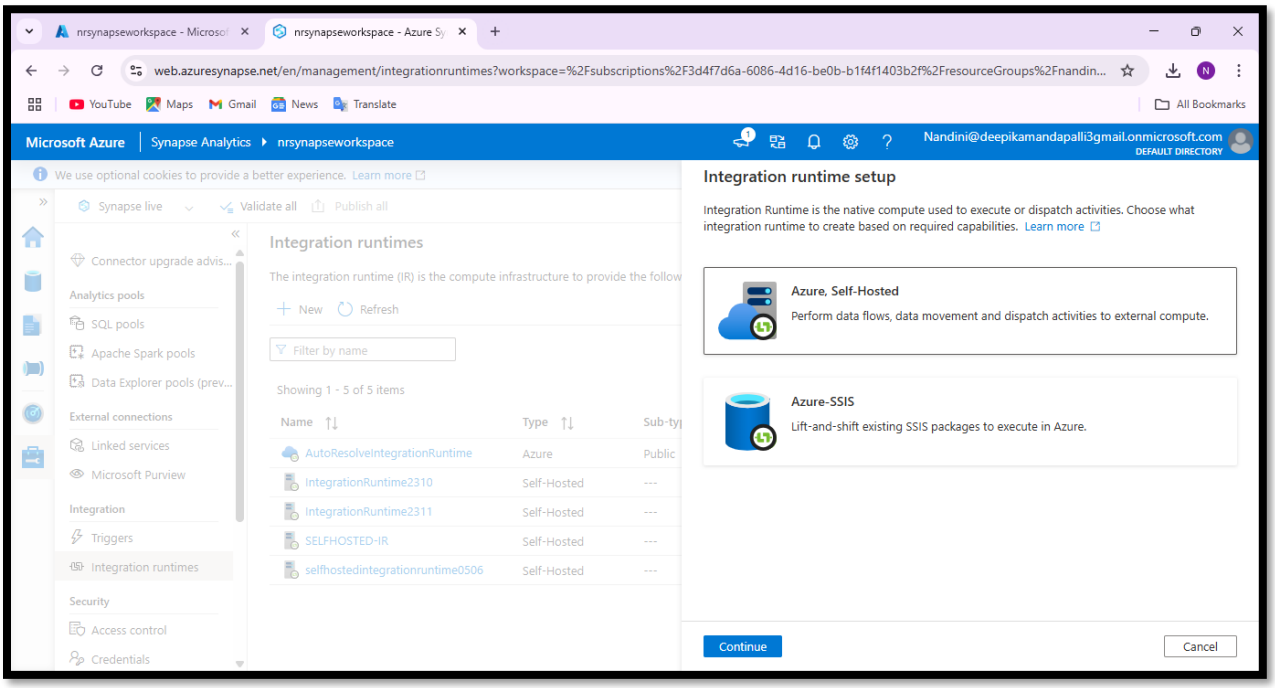
9. CREATE A METADATA TABLE AND ALSO ADD FILE PATH FOR BOTH CLOUD AND ON-PREMISE .

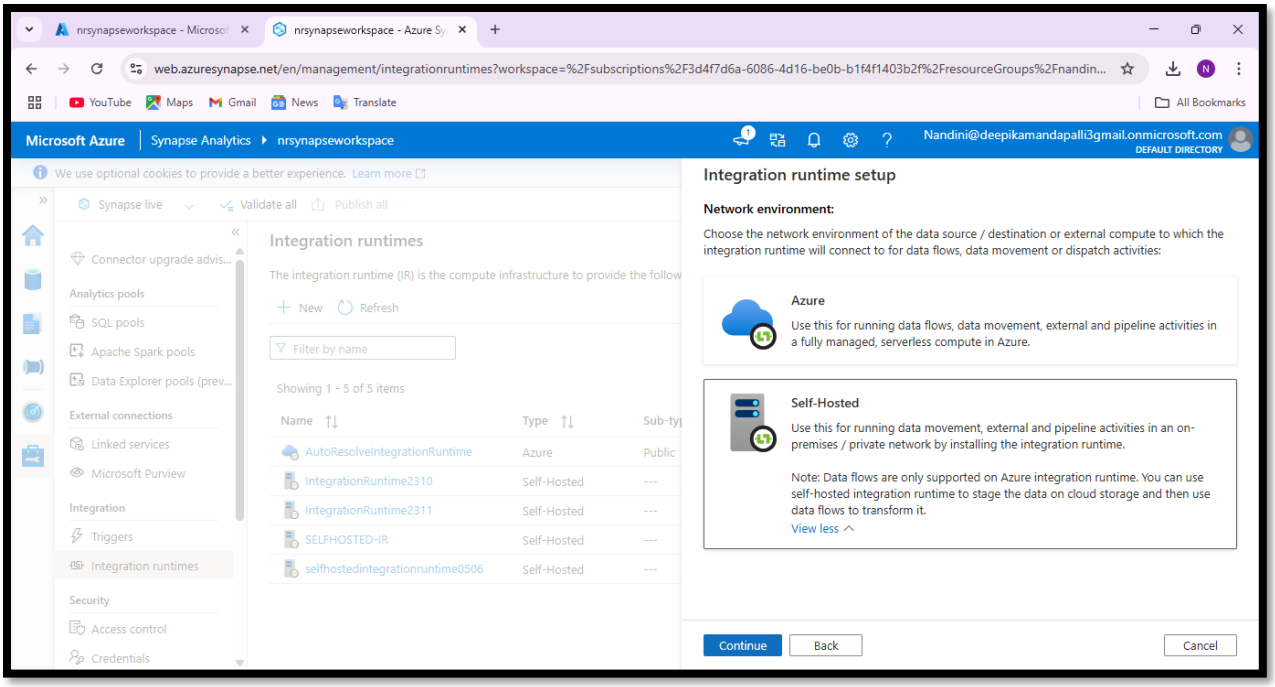
2. Load the extracted data into Azure Data Lake Storage Gen2 in a structured format.

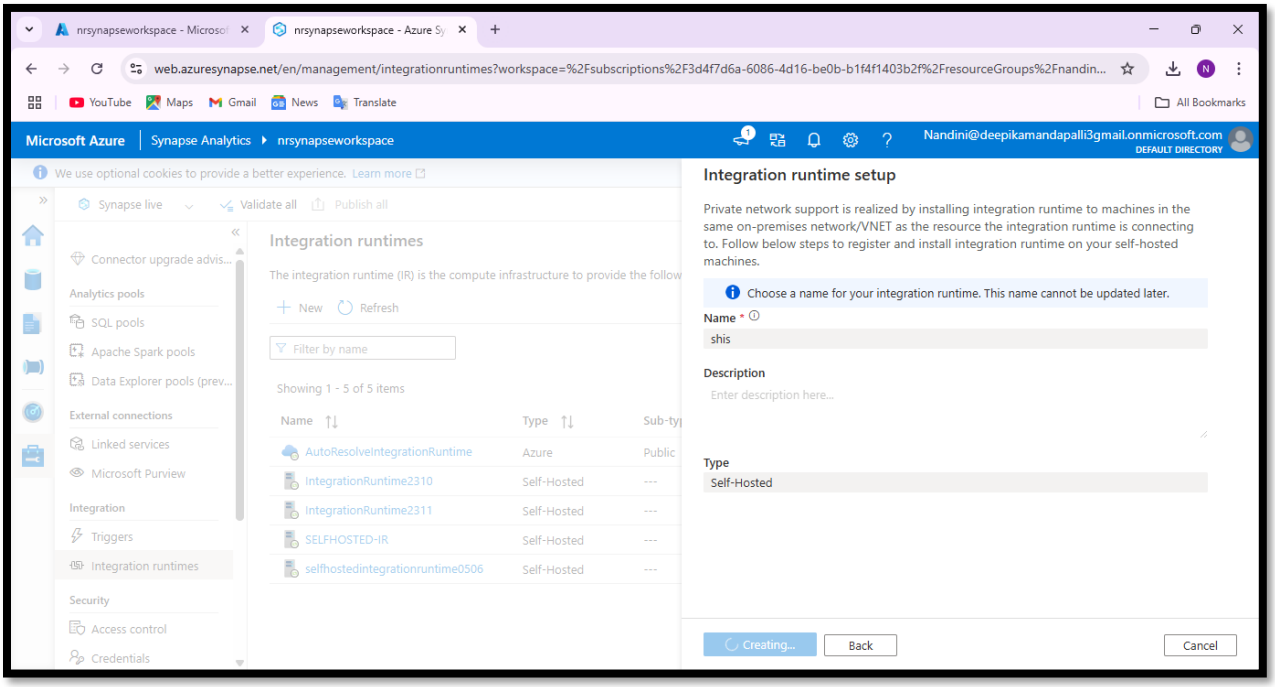


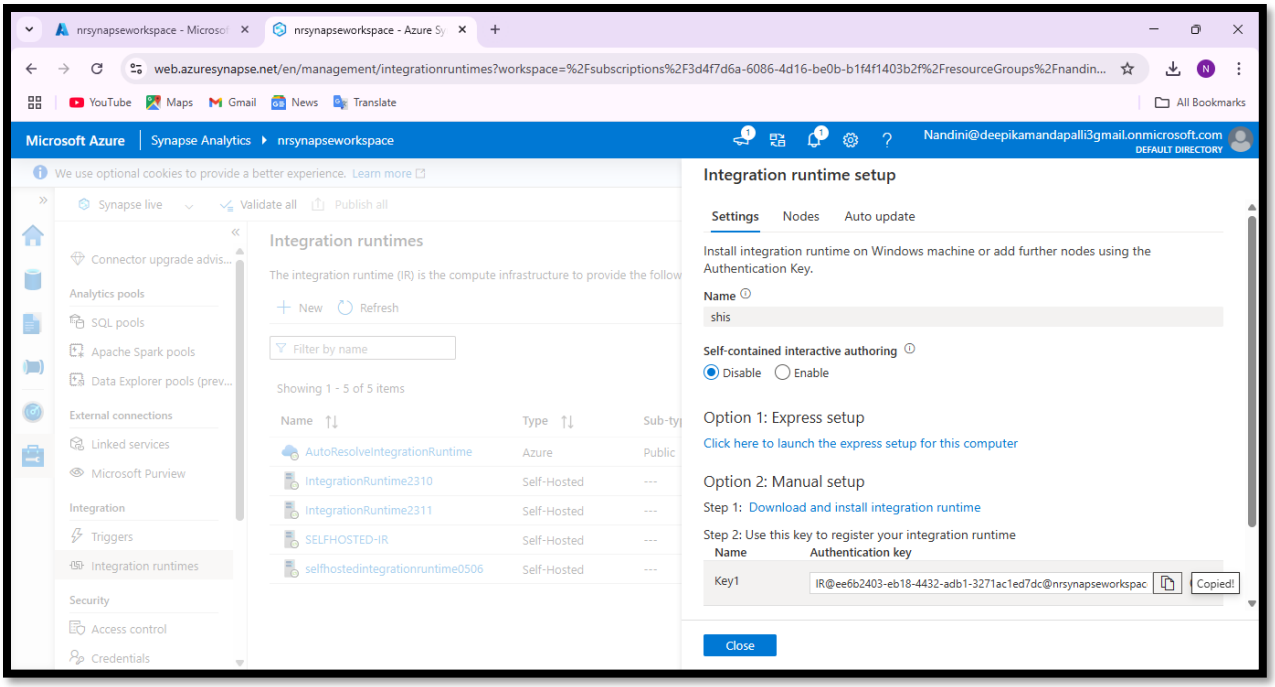
9. NOW CREATE INTEGRATION TUNTIME.

10.SELECT SELF HOSTED .

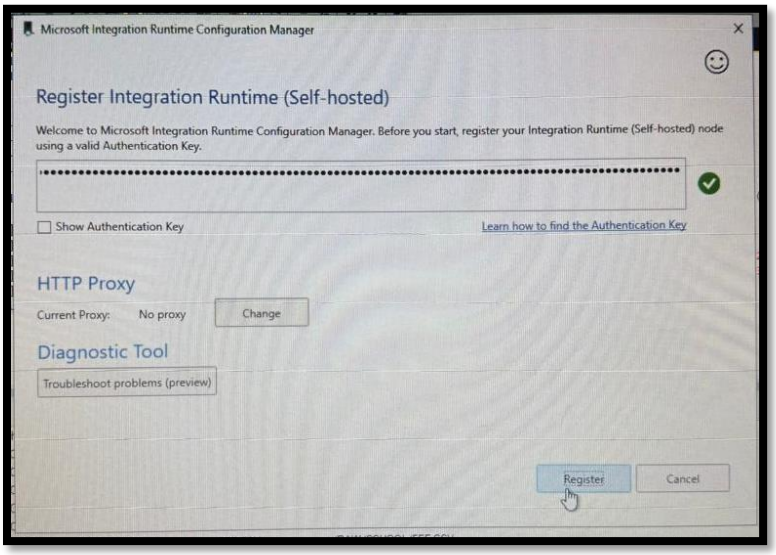


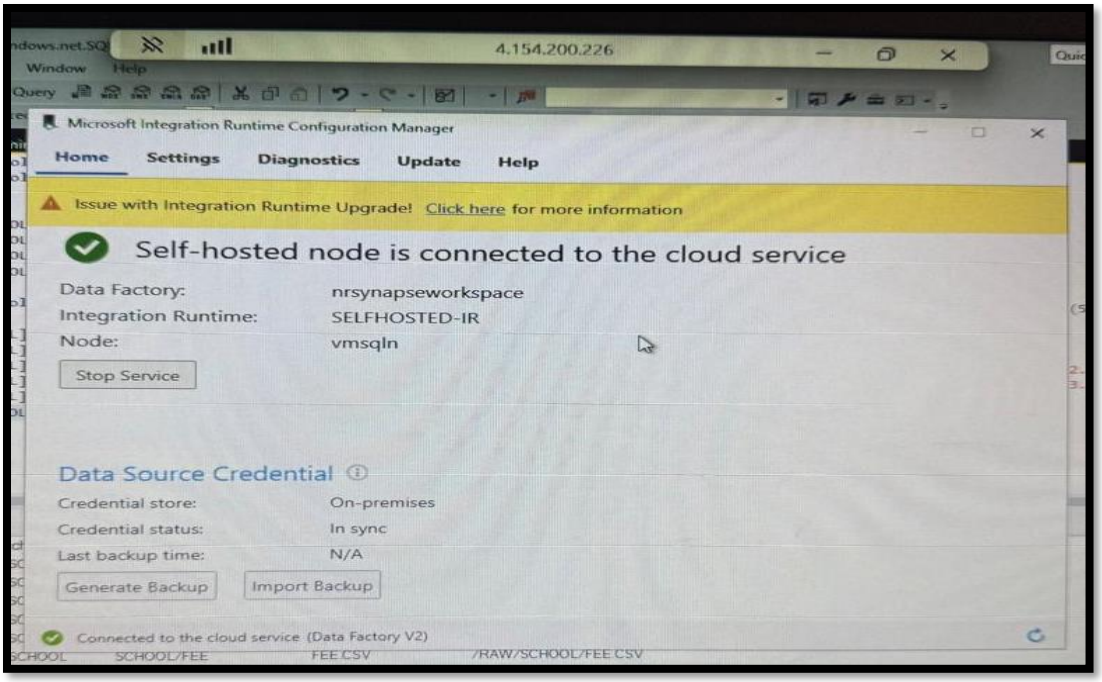

nrsynapseworkspace - Azure Sy
web.azuresynapse.net/en/management/integrationruntimes?workspace=%2Fsubscriptions%2F3d4f7d6a-6086-4d16-be0b-b1f4f1403b2f%2FresourceGroups%2Fnandin...
Microsoft Azure
Synapse Analytics
nrsynapseworkspace
Nandini@deepikamandapalli3gmail.onmicrosoft.com
DEFAULT DIRECTORY
We use optional cookies to provide a better experience. Learn more
Synapse live
Validate all
Publish all
Integration runtimes
The integration runtime (IR) is the compute infrastructure to provide the follow
New
Refresh
Filter by name
Showing 1 - 5 of 5 items
Name
Type
Sub-ty
AutoResolveIntegrationRuntime
Azure
Public
IntegrationRuntime2310
Self-Hosted
IntegrationRuntime2311
Self-Hosted
SELFHOSTED-IR
Self-Hosted
selfhostedintegrationruntime0506
Self-Hosted
Connector upgrade advis...
Analytics pools
SQL pools
Apache Spark pools
Data Explorer pools (prev...
External connections
Linked services
Microsoft Purview
Integration
Triggers
Integration runtimes
Security
Access control
Credentials
Integration runtime setup
Network environment:
Choose the network environment of the data source / destination or external compute to which the integration runtime will connect to for data flows, data movement or dispatch activities:
Azure
Use this for running data flows, data movement, external and pipeline activities in a fully managed, serverless compute in Azure.
Self-Hosted
Use this for running data movement, external and pipeline activities in an on-premises / private network by installing the integration runtime.
Note: Data flows are only supported on Azure integration runtime. You can use self-hosted integration runtime to stage the data on cloud storage and then use data flows to transform it.
View less
Continue
Back
Cancel

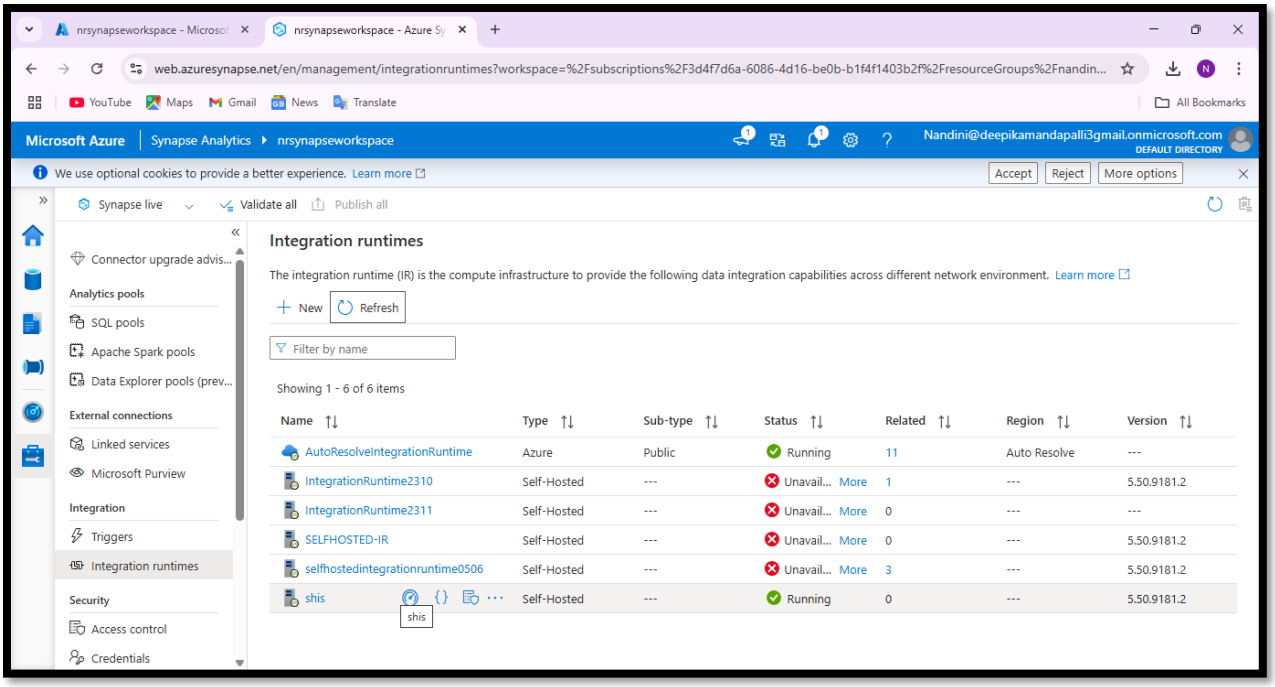

nrsynapseworkspace - Azure Sy
web.azuresynapse.net/en/management/integrationruntimes?workspace=%2Fsubscriptions%2F3d4f7d6a-6086-4d16-be0b-b1f4f1403b2f%2FresourceGroups%2Fnandin...
Microsoft Azure
Synapse Analytics
nrsynapseworkspace
Nandini@deepikamandapalli3gmail.onmicrosoft.com
DEFAULT DIRECTORY
Integration runtimes
Integration runtime setup
Private network support is realized by installing integration runtime to machines in the same on-premises network/VNET as the resource the integration runtime is connecting to. Follow below steps to register and install integration runtime on your self-hosted machines.
Choose a name for your integration runtime. This name cannot be updated later.
Name *
shis
Description
Enter description here...
Type
Self-Hosted
Creating...
Back
Cancel



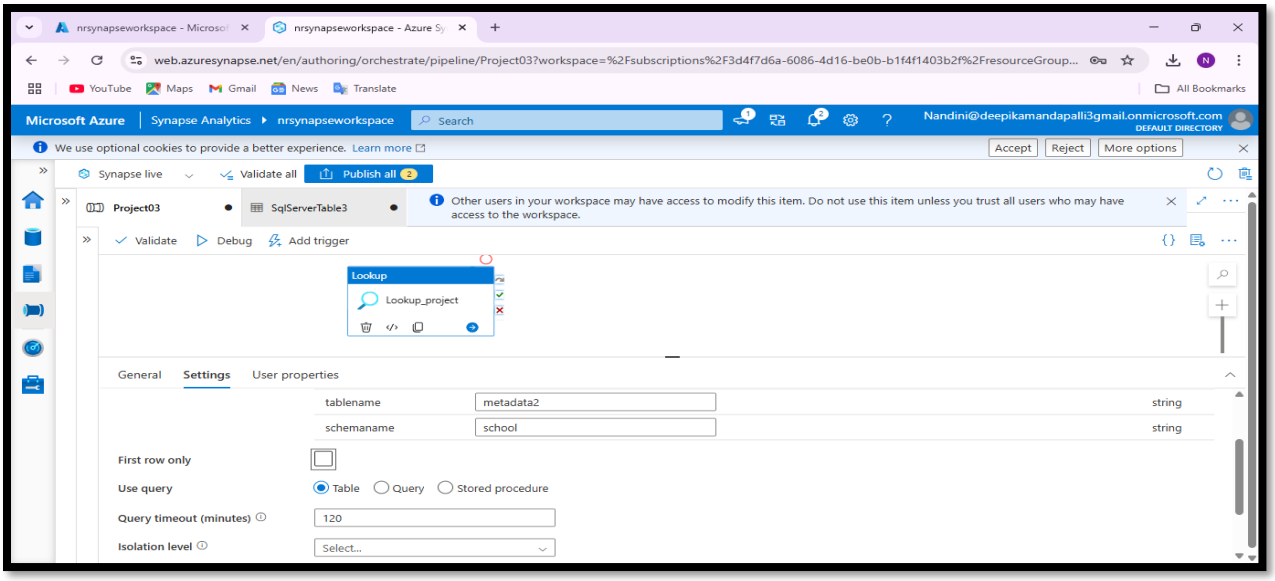
11.COPY THIS KEY1 URL AND PASTE TO ON PREMISE FOR CONNECTION OF SH-IR.



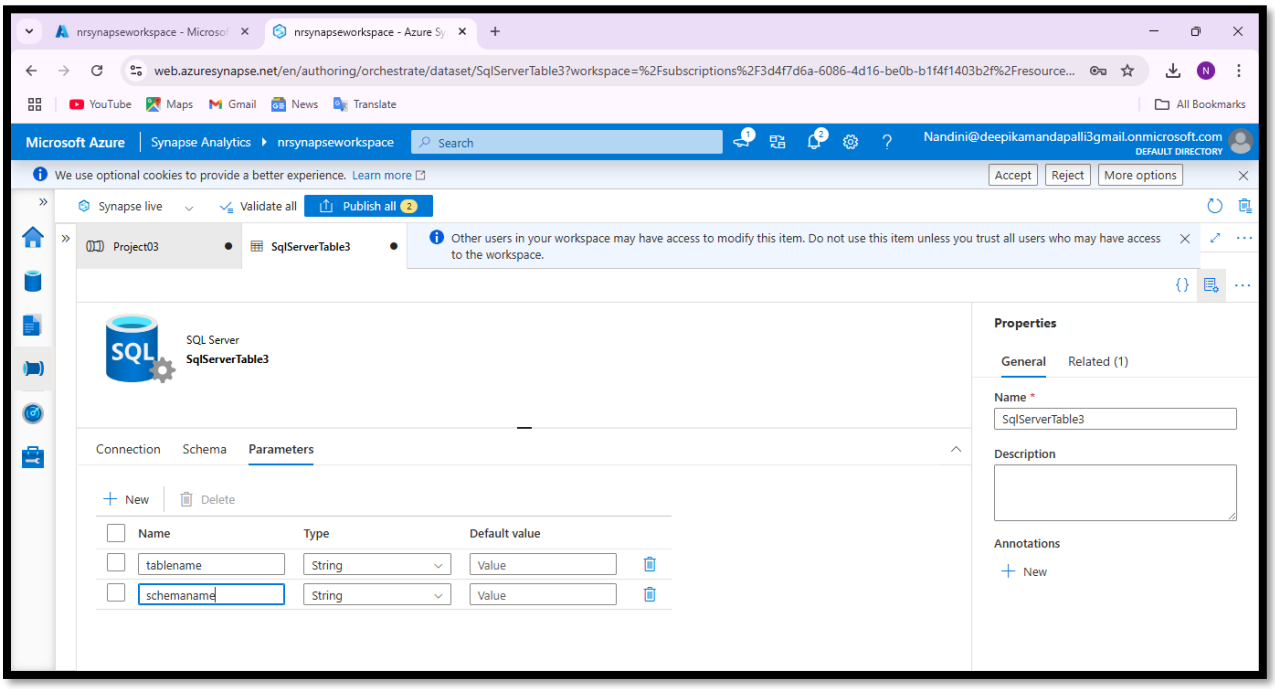




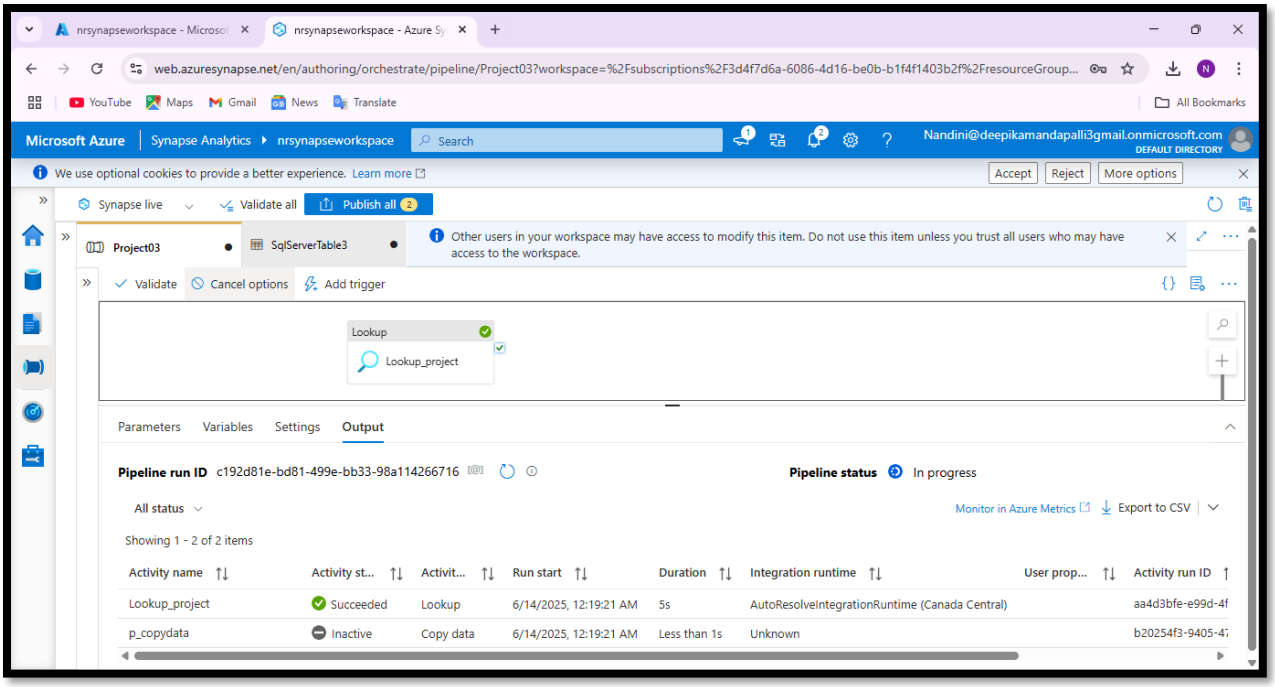
12. SELF HOSTED INTEGRATION RUNTIME IS RUNNING.



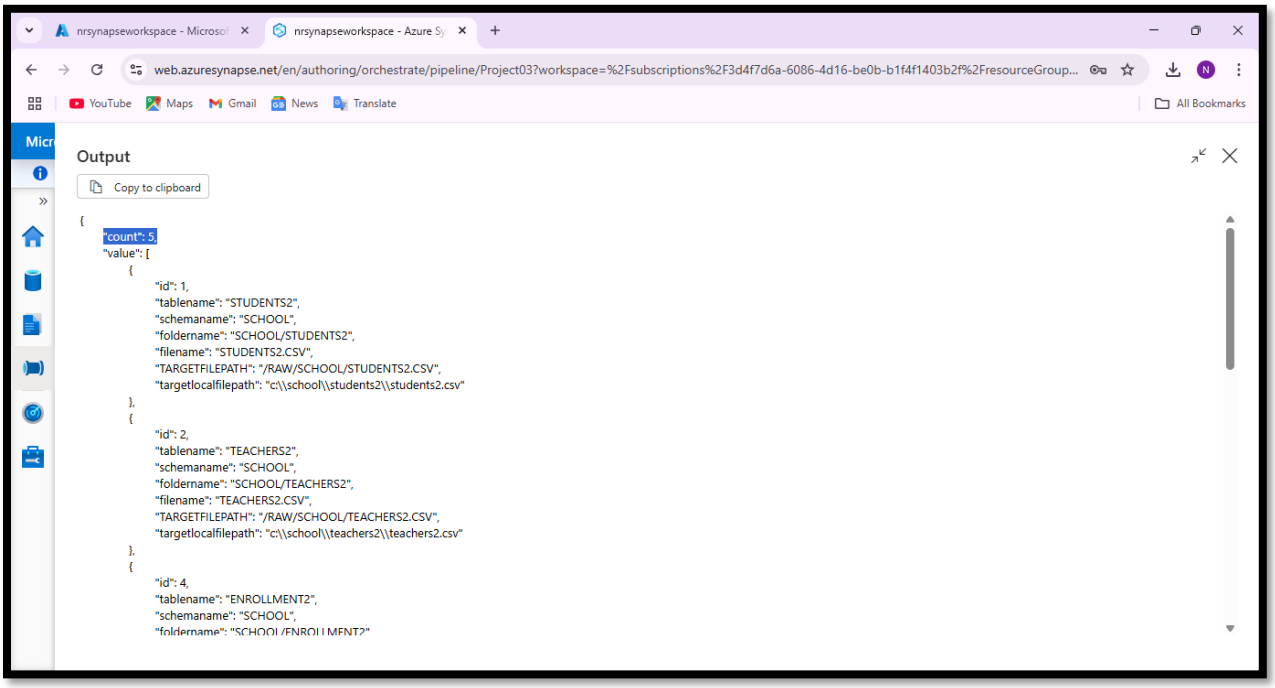
13. NOW GO TO DATA ON 'INTEGRATE ' ON LEFT SIDE OF PAGE ,CREATE A PIPELINE,NAME IT AND DRAG A LOOKUP ACTIVITY TO LOOKUP FOR TABLES PRESENT IN METADATA TABLE IN SQL SERVER.



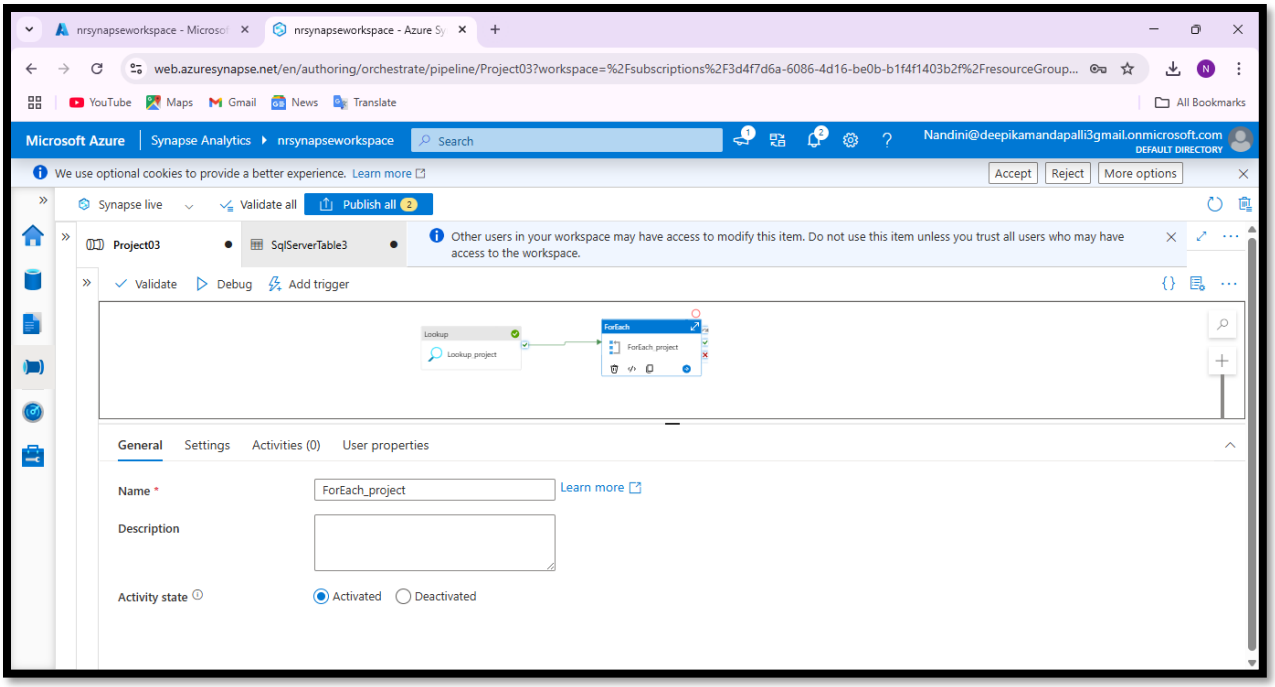
14. CREATE PARAMETERS.



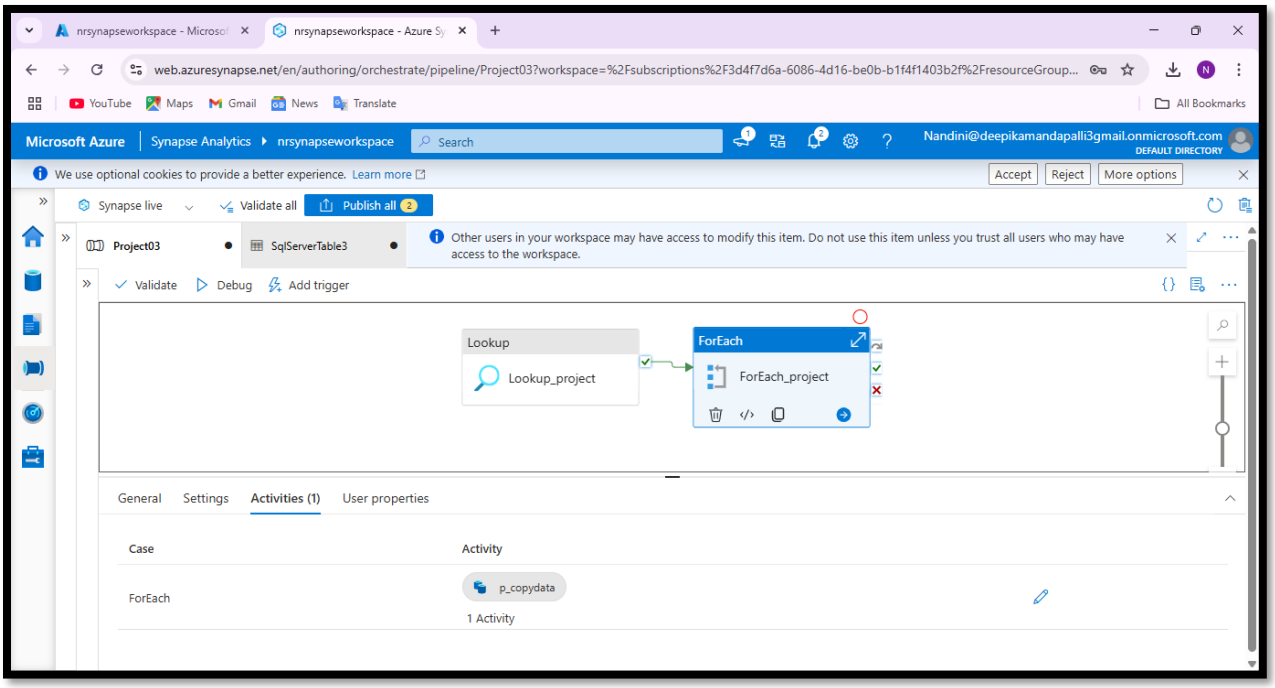
15. THIS ACTIVITY IS SUCCEDED.

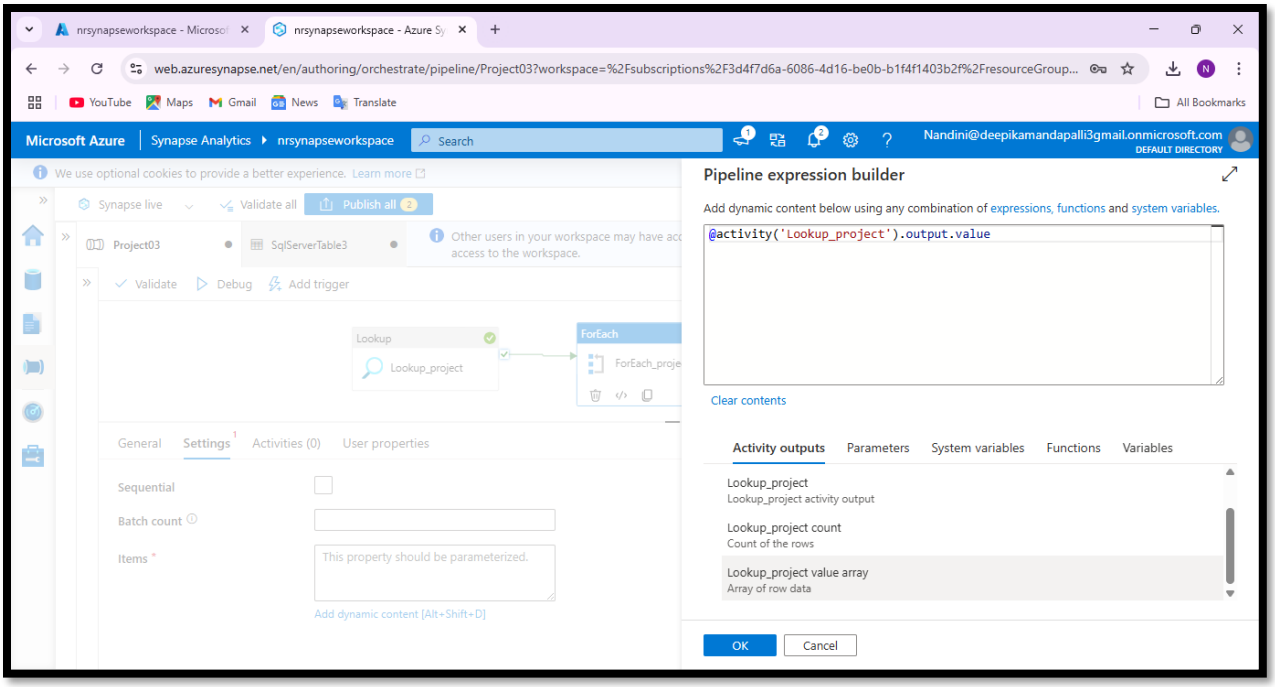


14.THIS SHOWS NO. OF TABLES IN METADATA TABLE,COUNT=5.

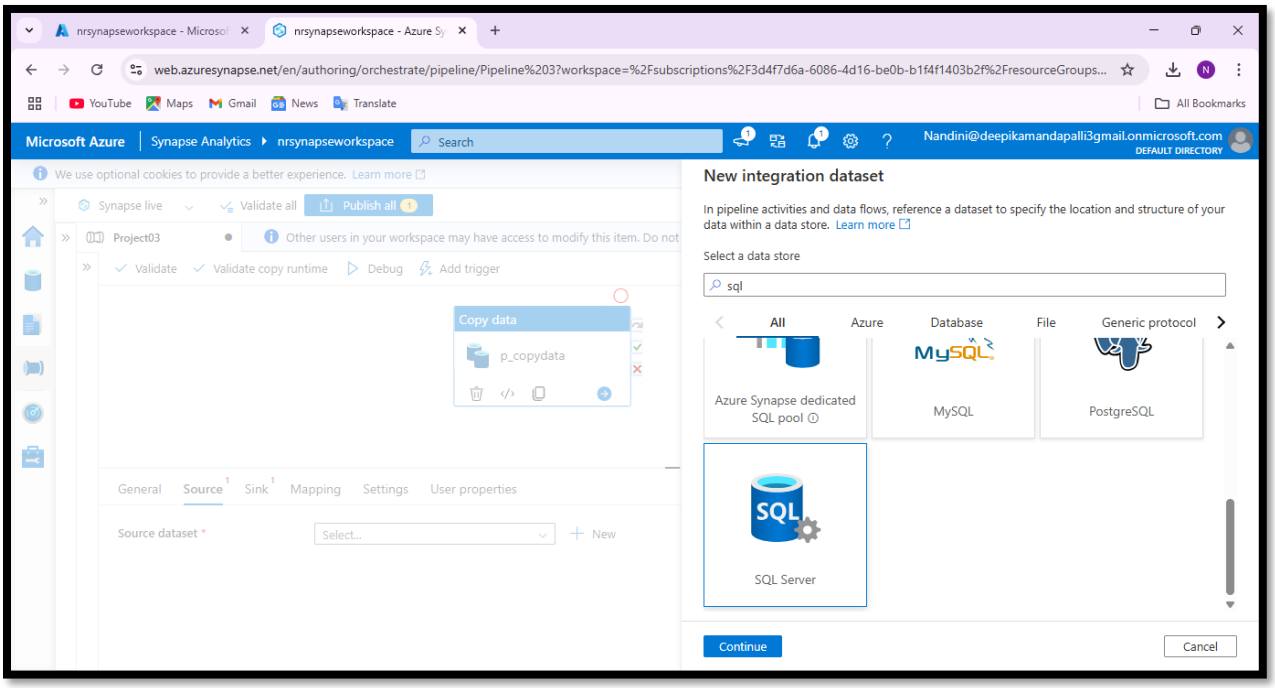


16.AFTER THAT CREATE FOR EACH LOOP ,NAME IT AND CONNECT IT WITH LOOKUP DATA SO THAT IT WILL ITERATE THE ARRAYS OF METADATA TABLES OR OUTPUT OF LOOKUP ACTIVITY.

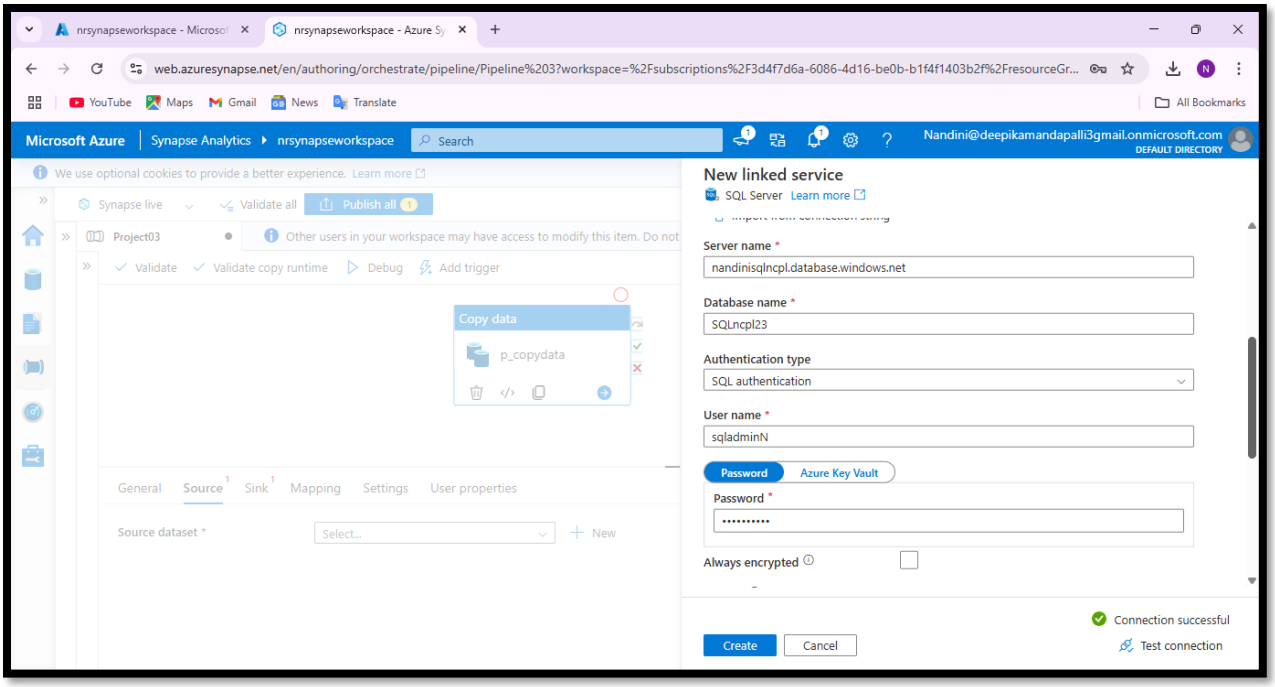




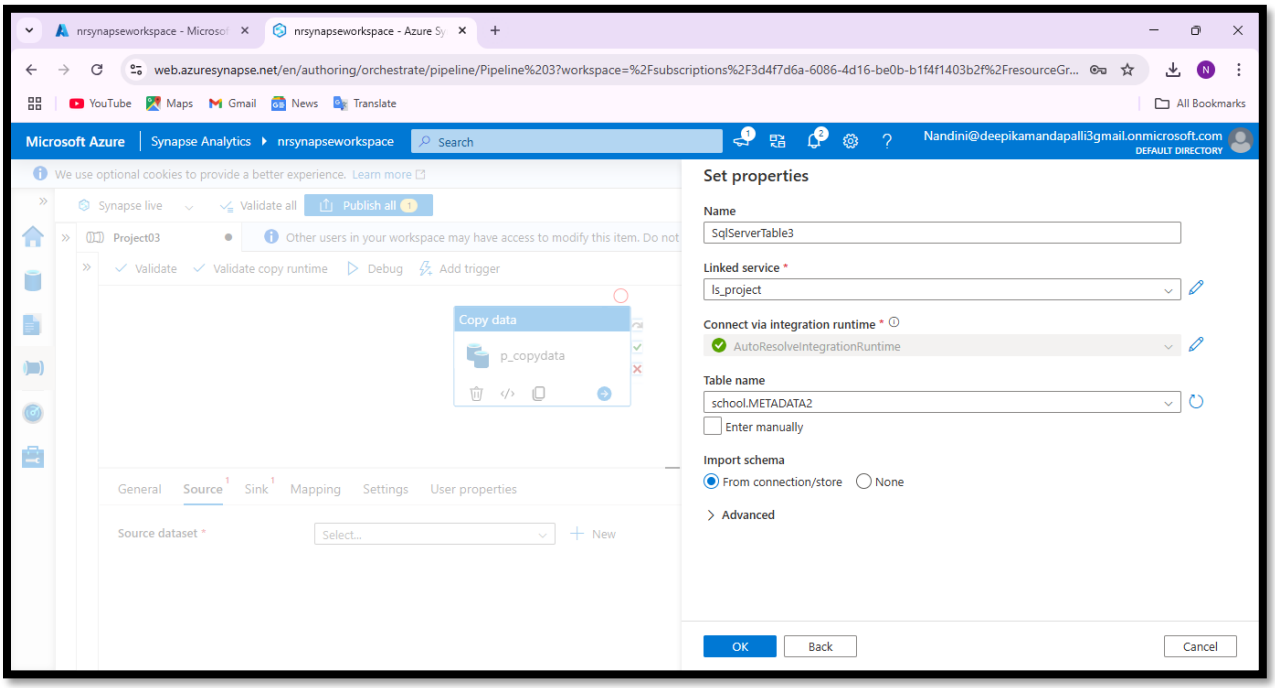
17. INSIDE FOREACH ACTIVITY CREATE COPY DATA ACTIVITY,HERE WE USE @ACTIVITY ,WHICH WILL COPY OUTPUT OF LOOKUP ACTIVITY.



18.SELECT 'SQL SERVER' AS SOURCE DATASET.



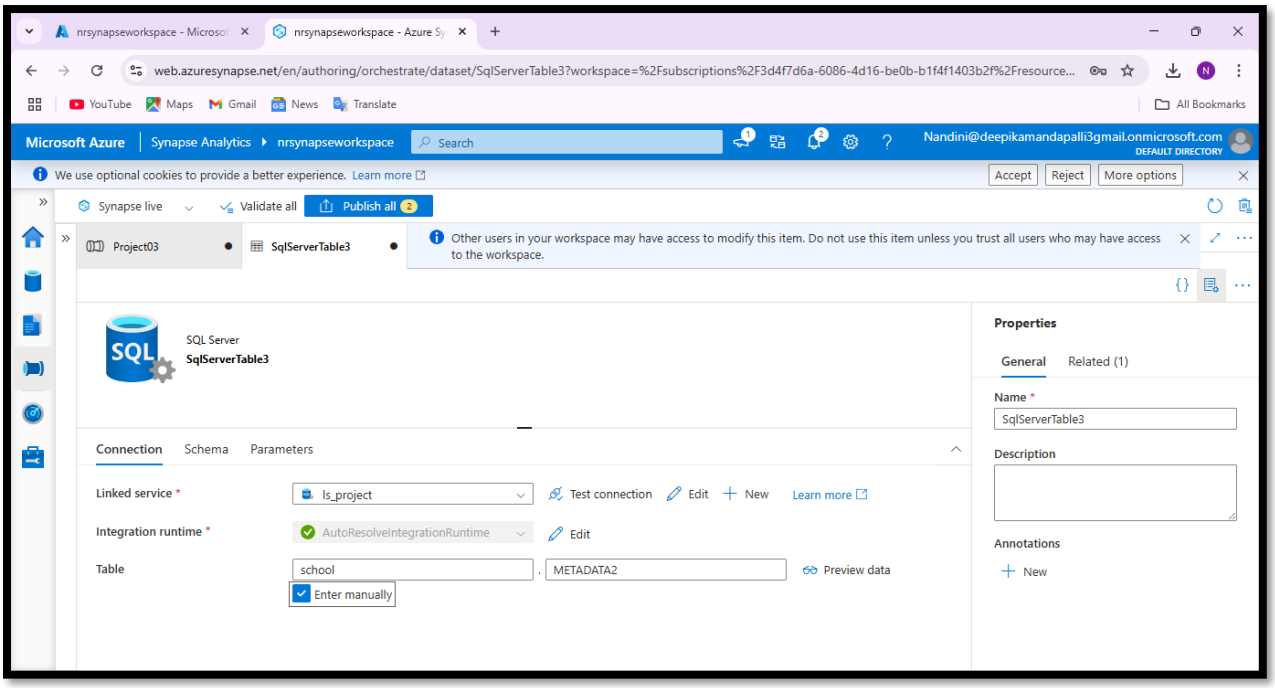
19. CREATE NEW LINKED SERVICE.



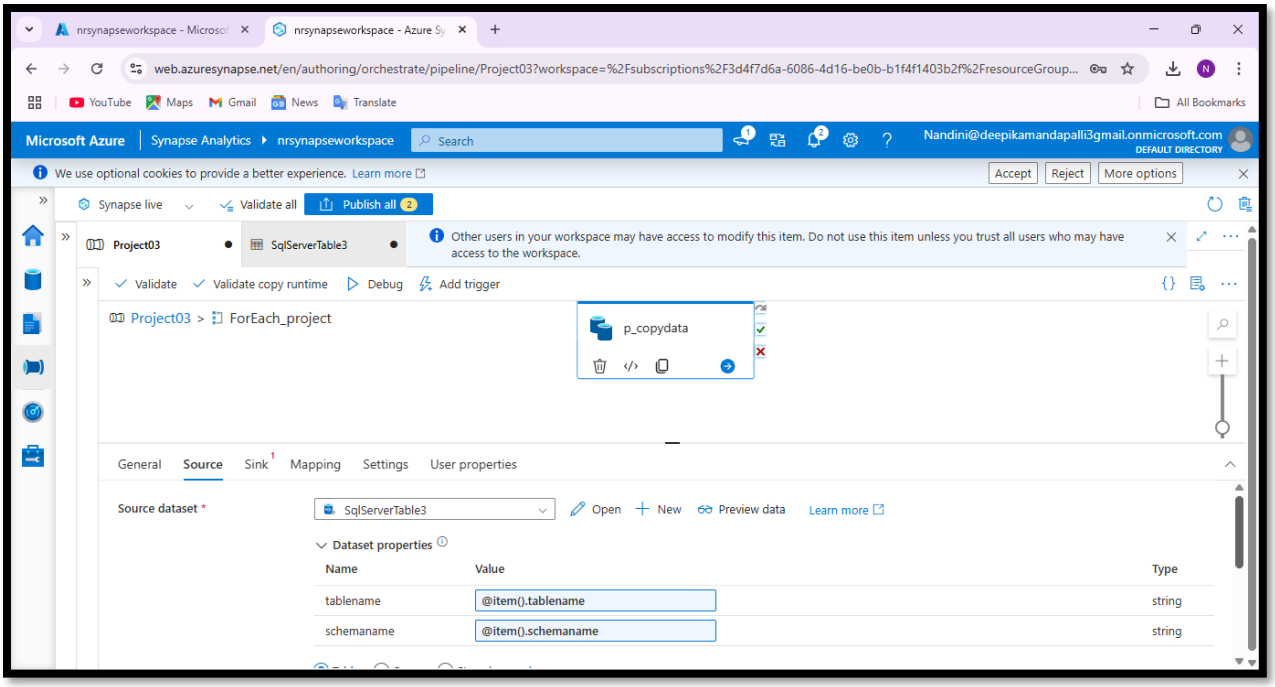
20.SET PROPERTIES AND SELECT TABLE NAME.'SCHOOL.METADATA2'

4. Implement a metadata-driven approach using a control table that stores details such as:

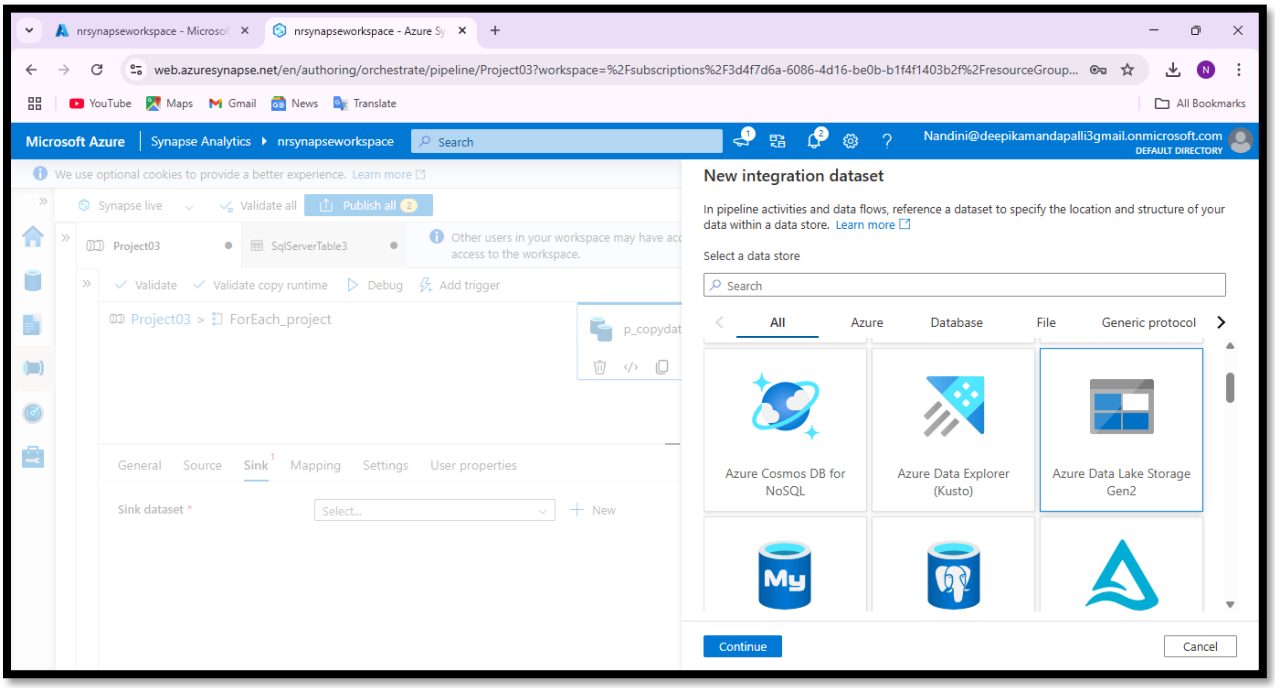
1. *Source table names*
2. *Target file paths*



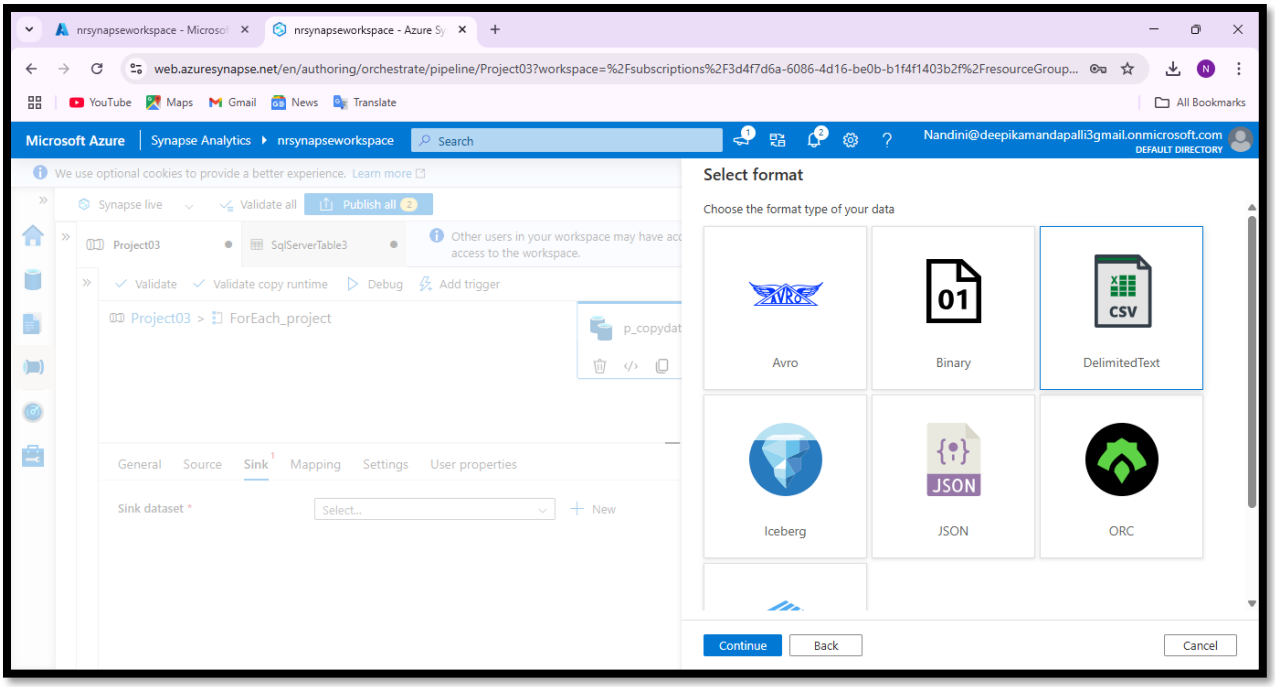
21. CREATE PARAMETERS SCHEMANAME AND TABLENAME.

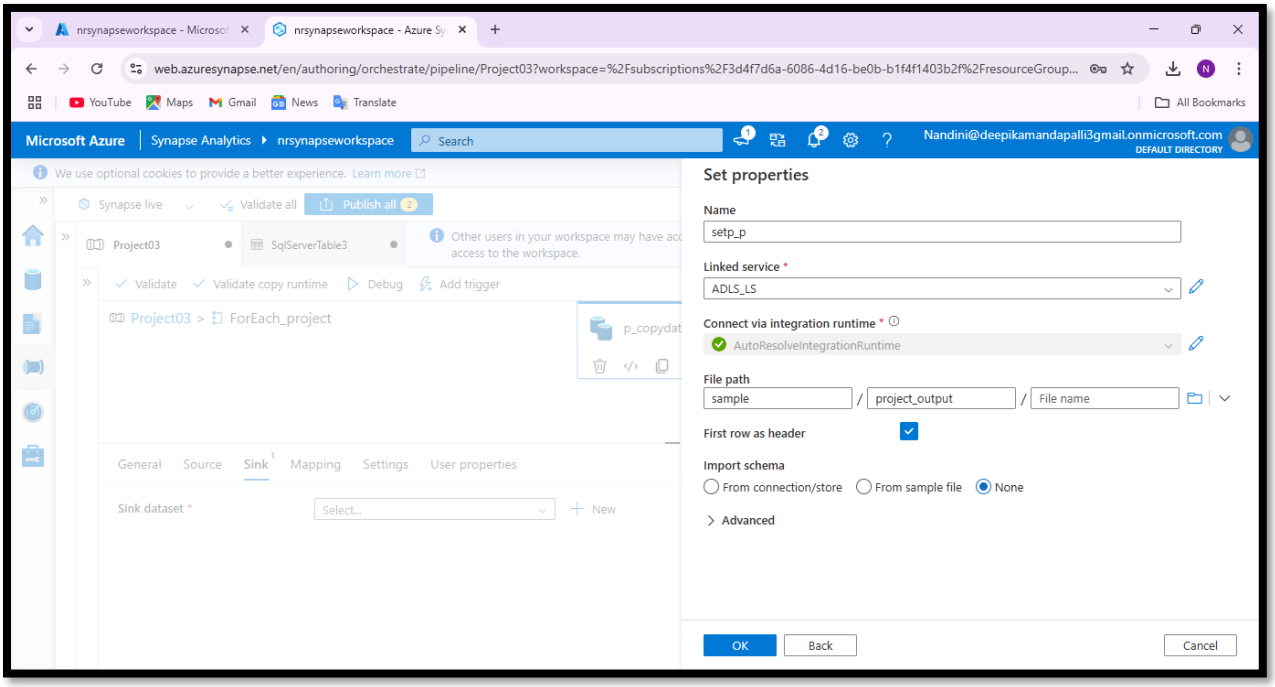


22. USE @ITEM(). FUNCTION ,THIS WILL ITERATE EVERY ITEM OF THE TABLE.

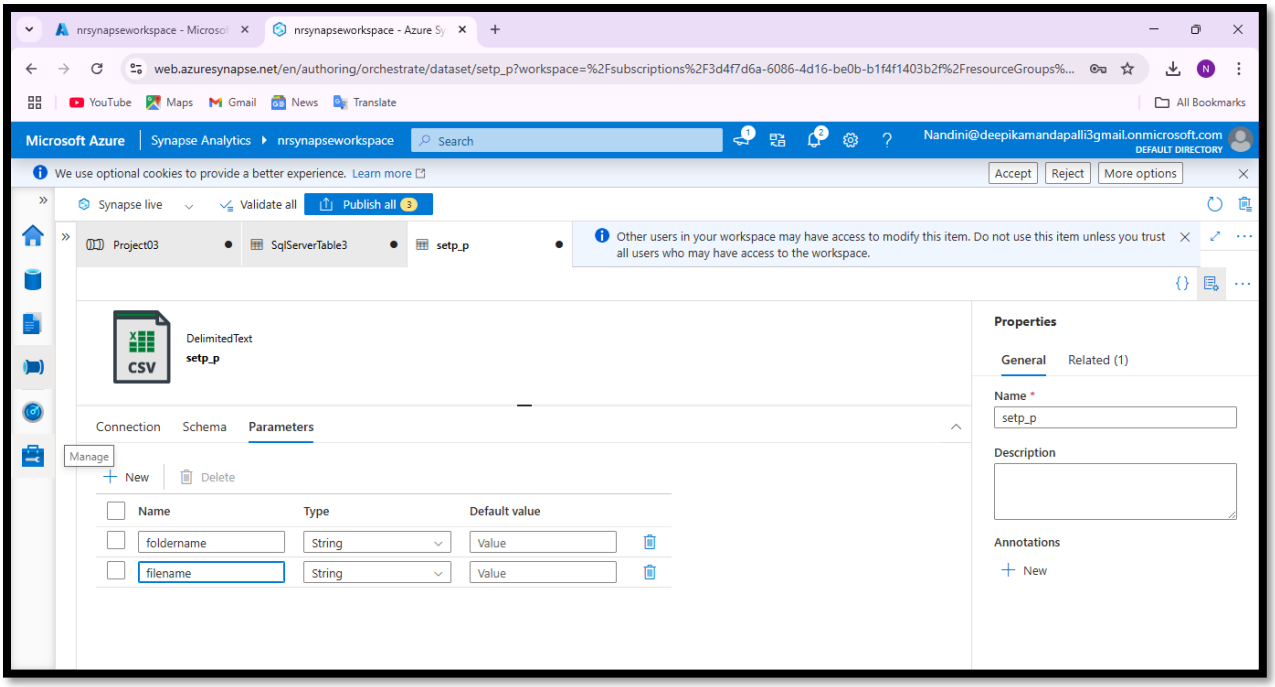


23. NOW FOR SINK SELECT ADLSGEN2,THEN CSV FORMAT.

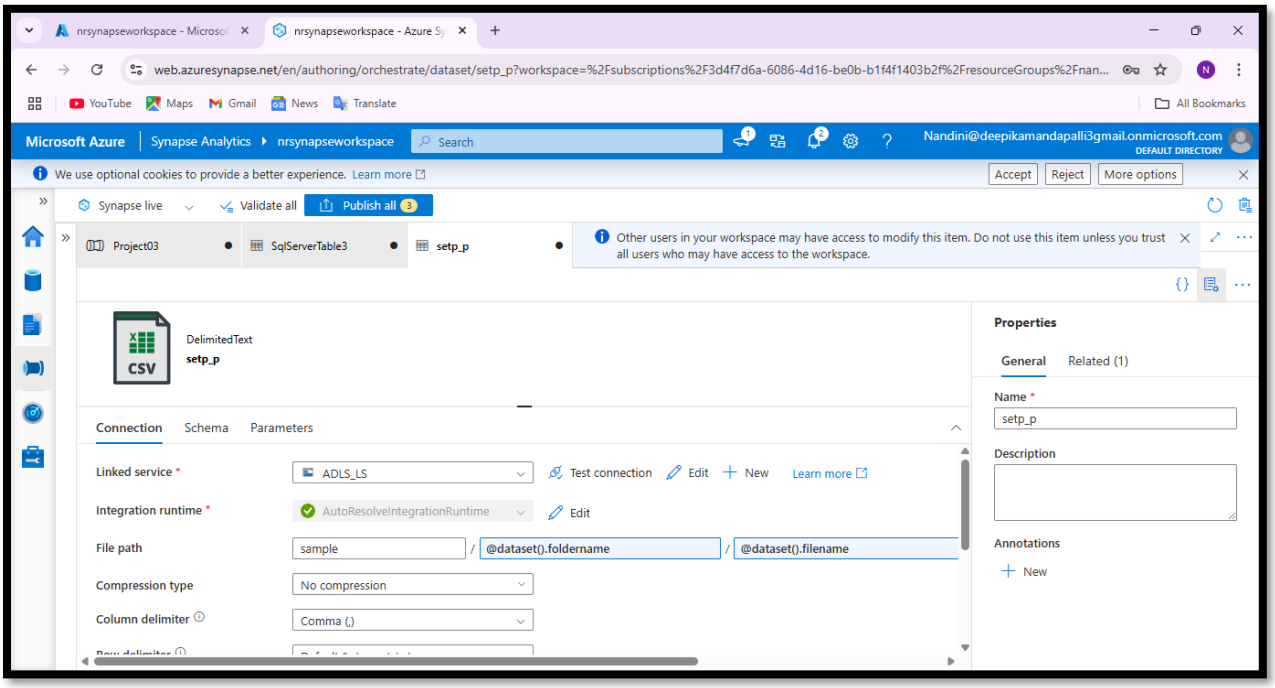


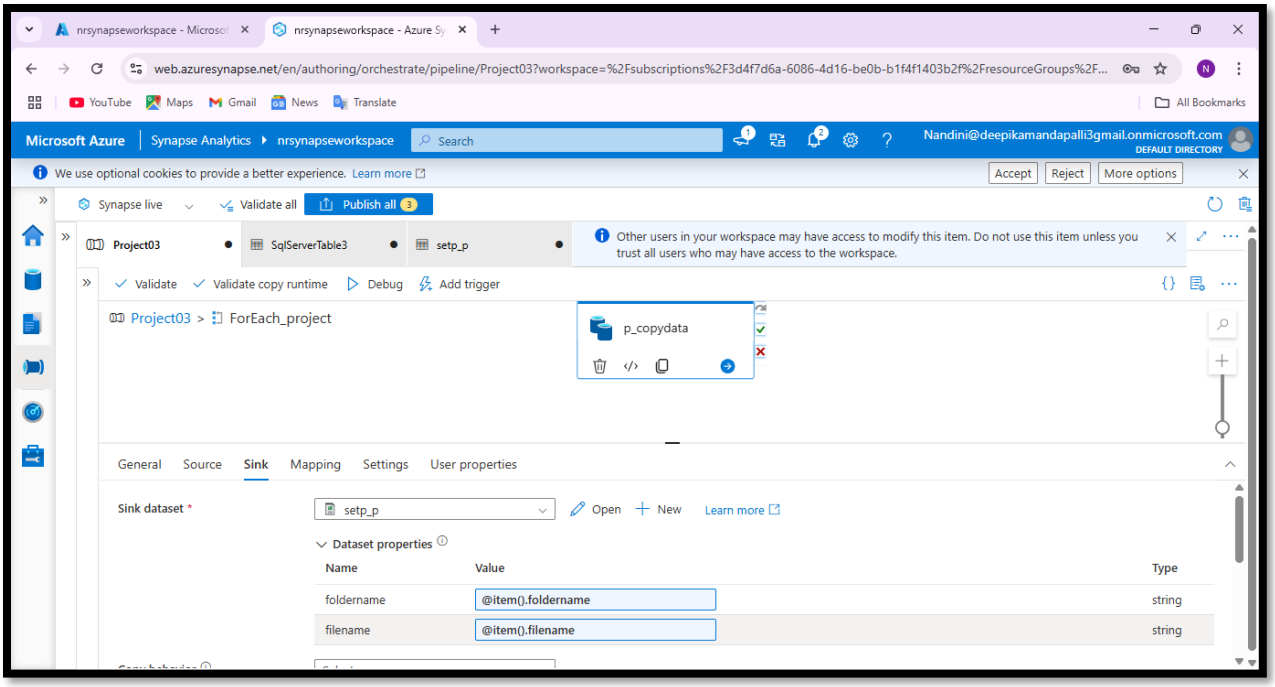


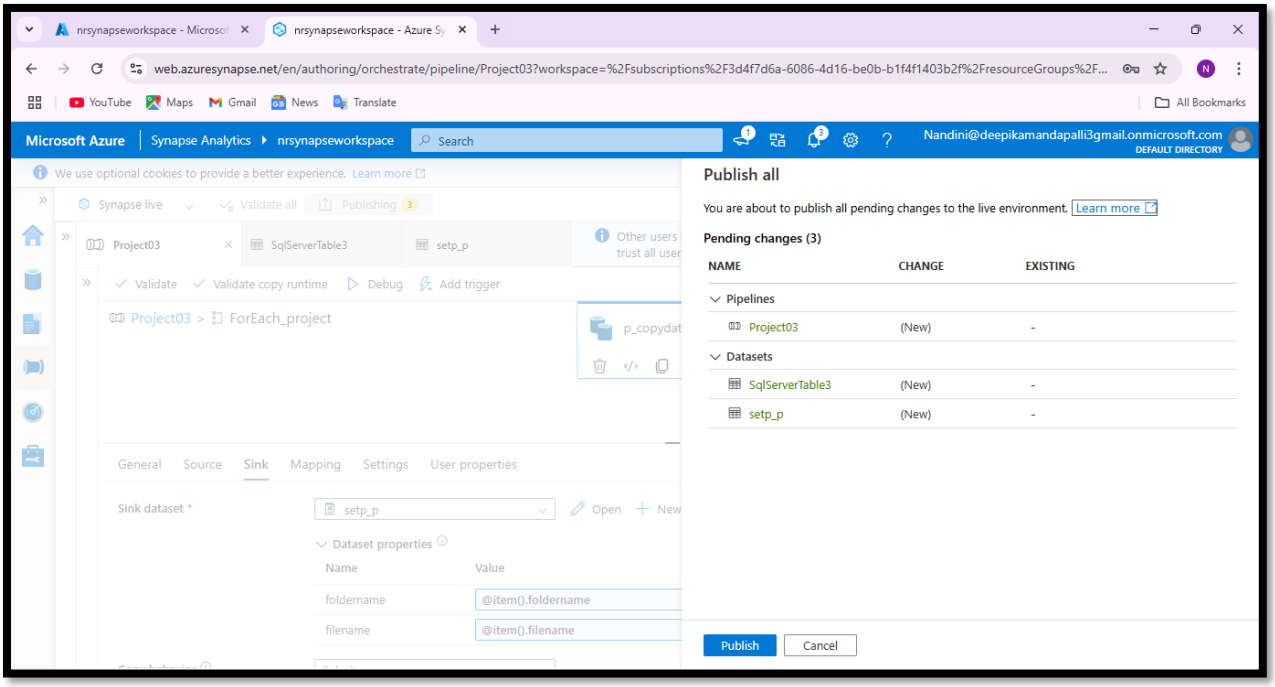
24. SET PROPERTIES AND SELECT FILE PATH WHERE WE WANT TO COPY DATA IN ADLSGEN2 ACCOUNT.



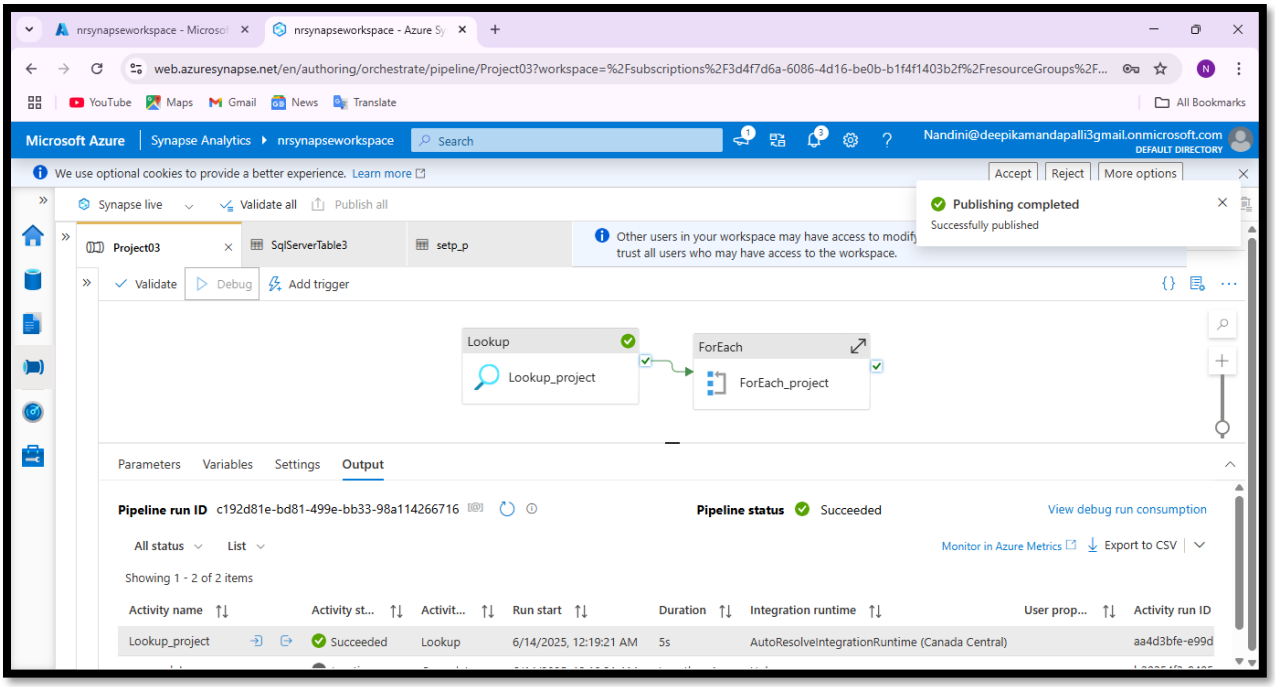
25.CREATE PARAMETERS FOR ADLSGEN2-→FOLDERNAME,FILENAME.



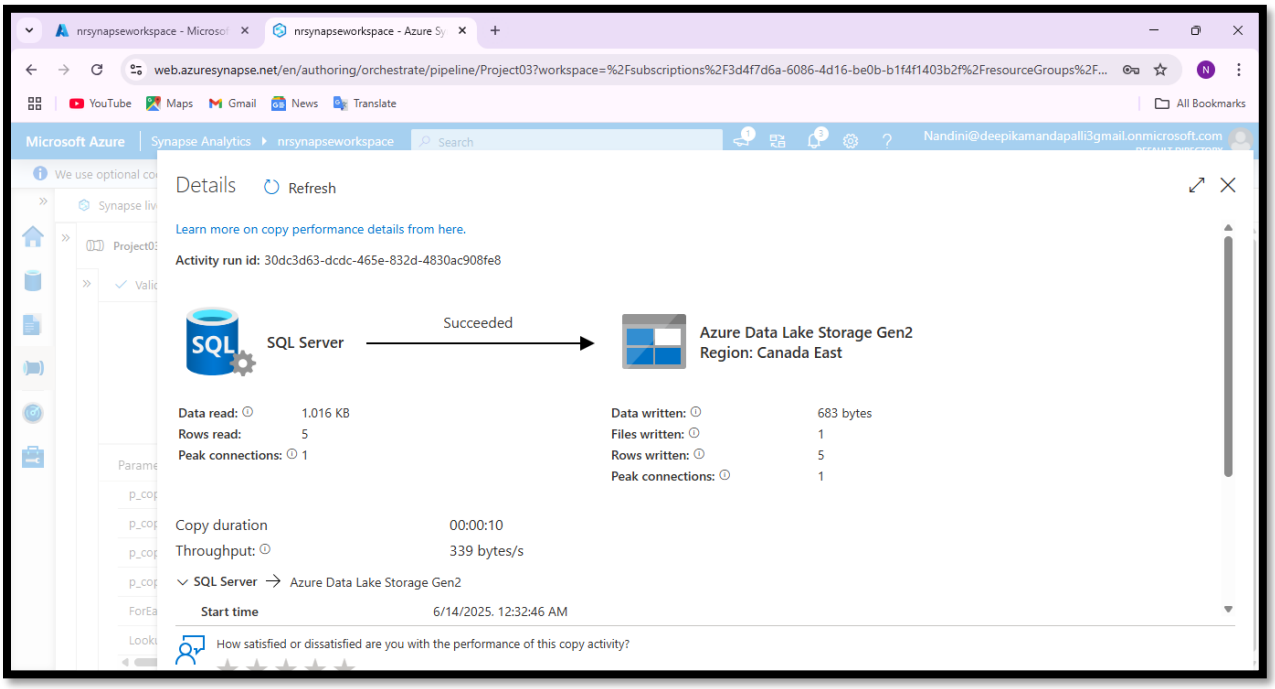




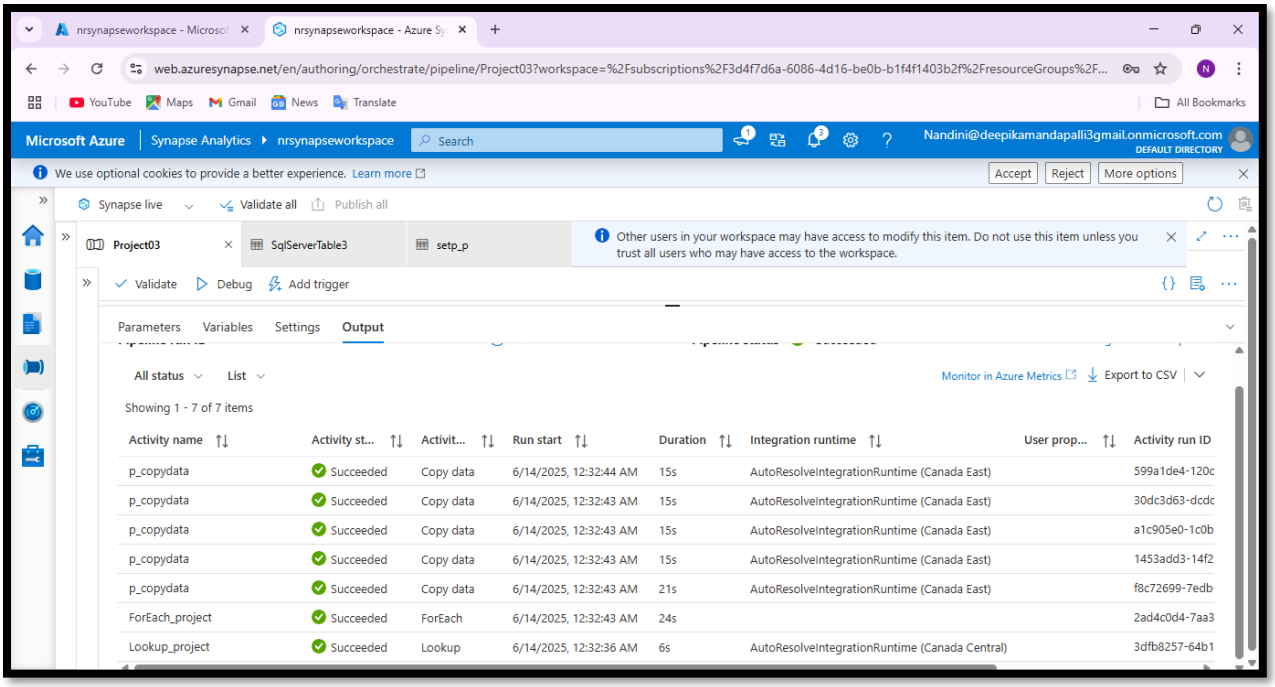
26.PUBLISH PIPELINE.

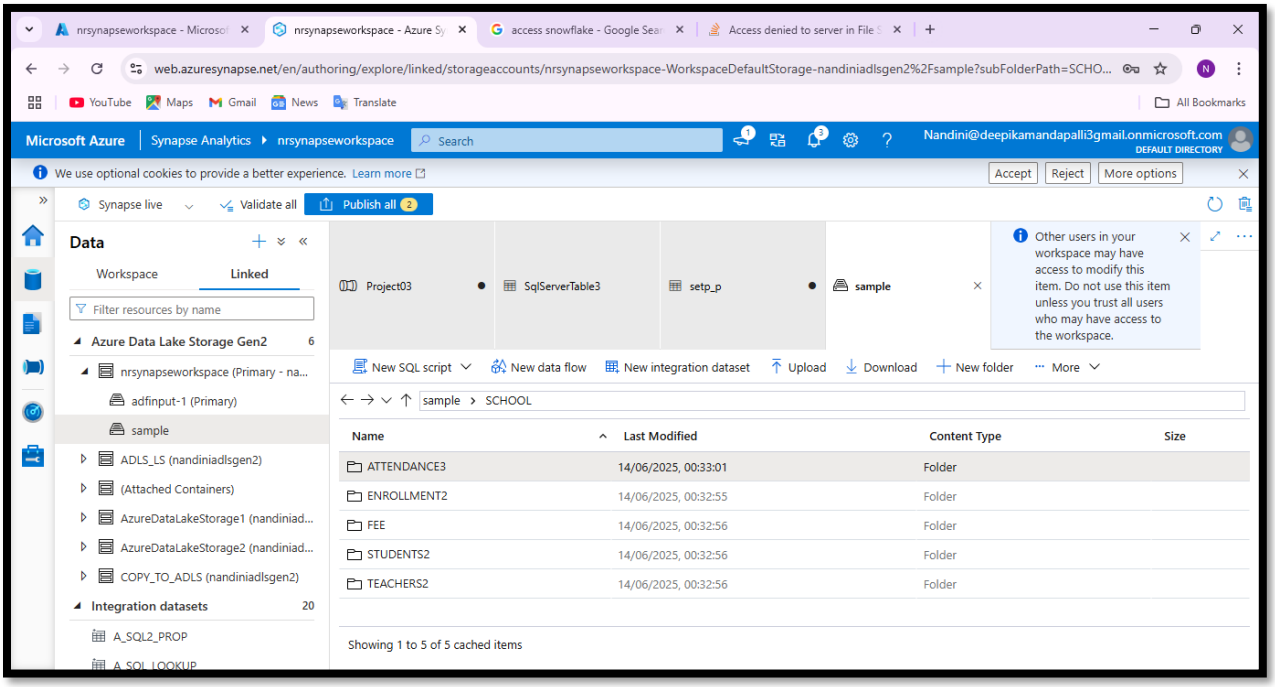


27.PIPELEINE SUCCEDED.



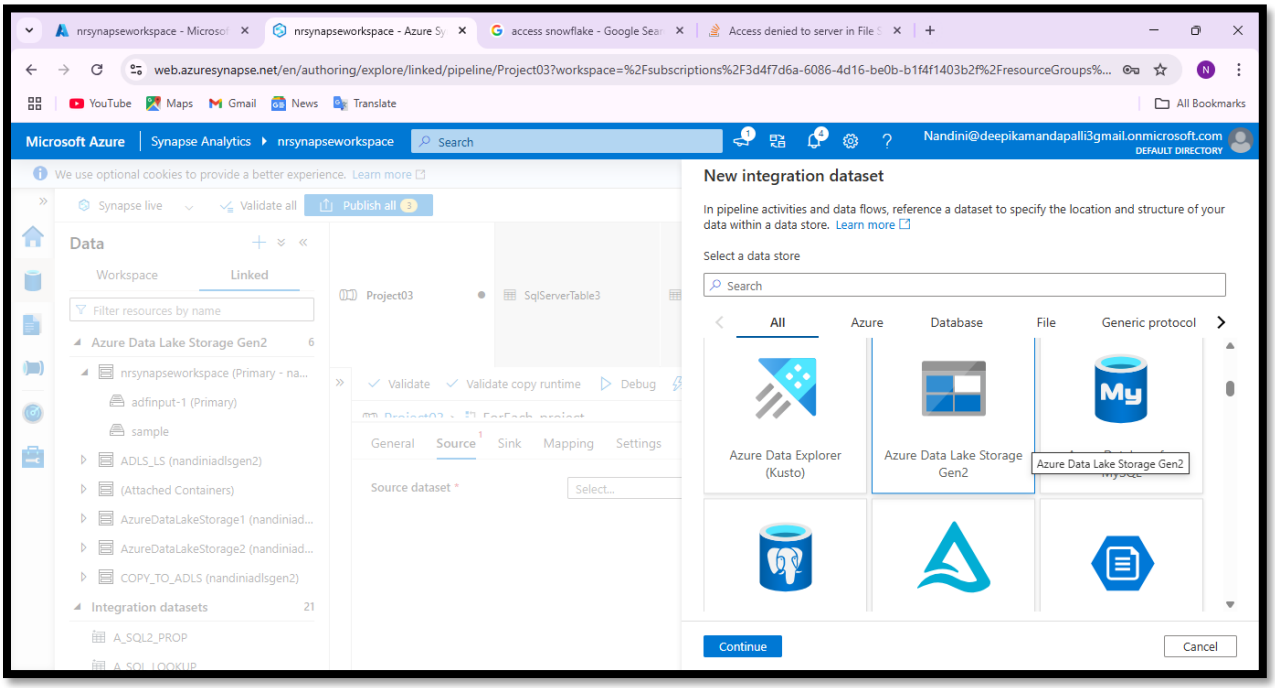
28. DATA SUCCESSFULLY LOADED FROM SQL SERVER TO ADLSGEN2.



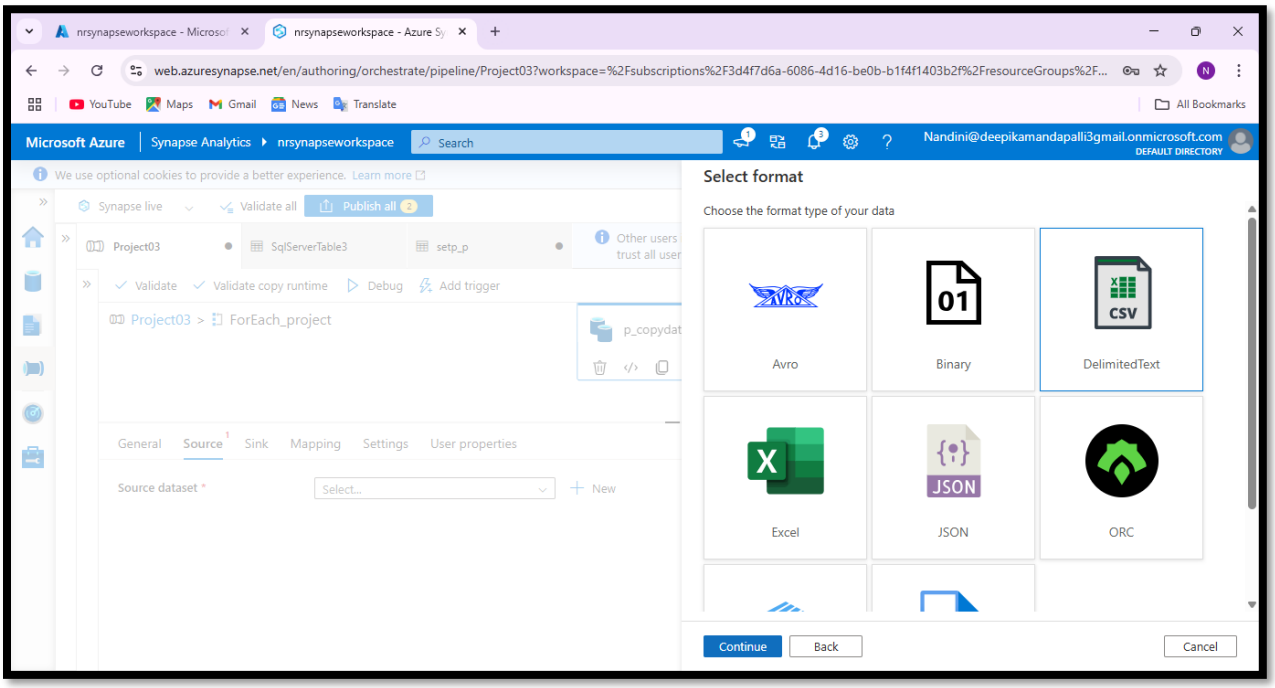


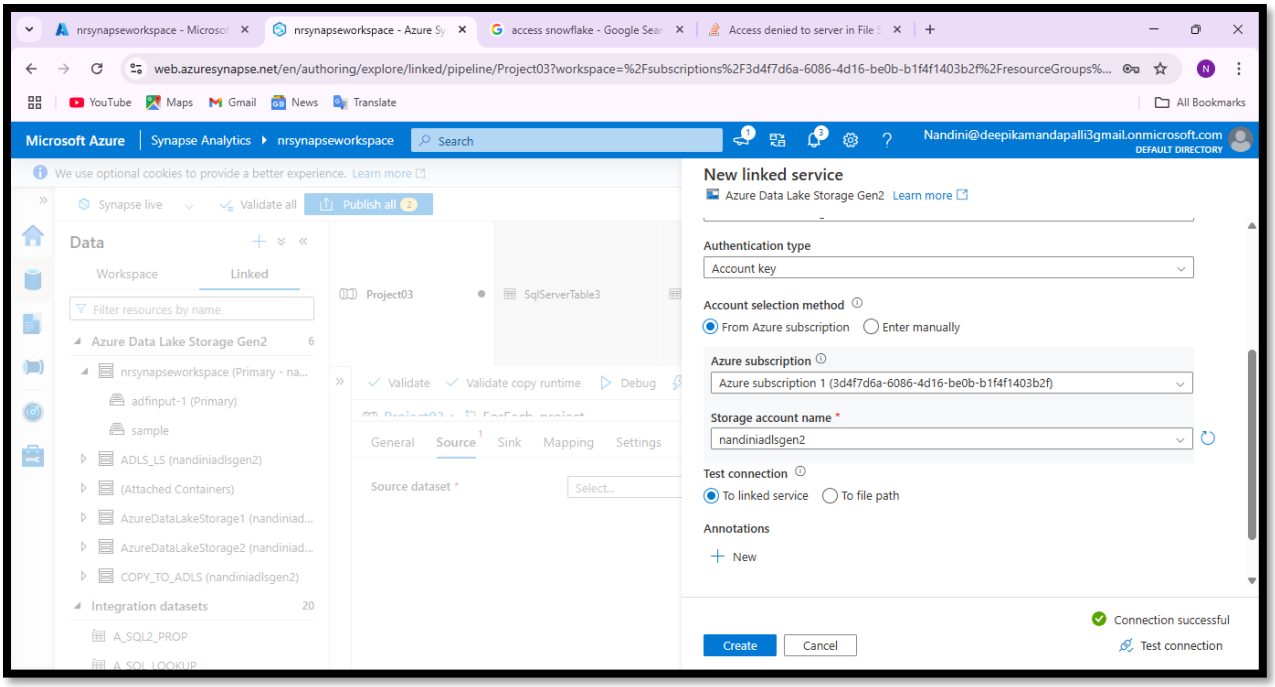
29. LOADED DATA PRESENT IN CLOUD.

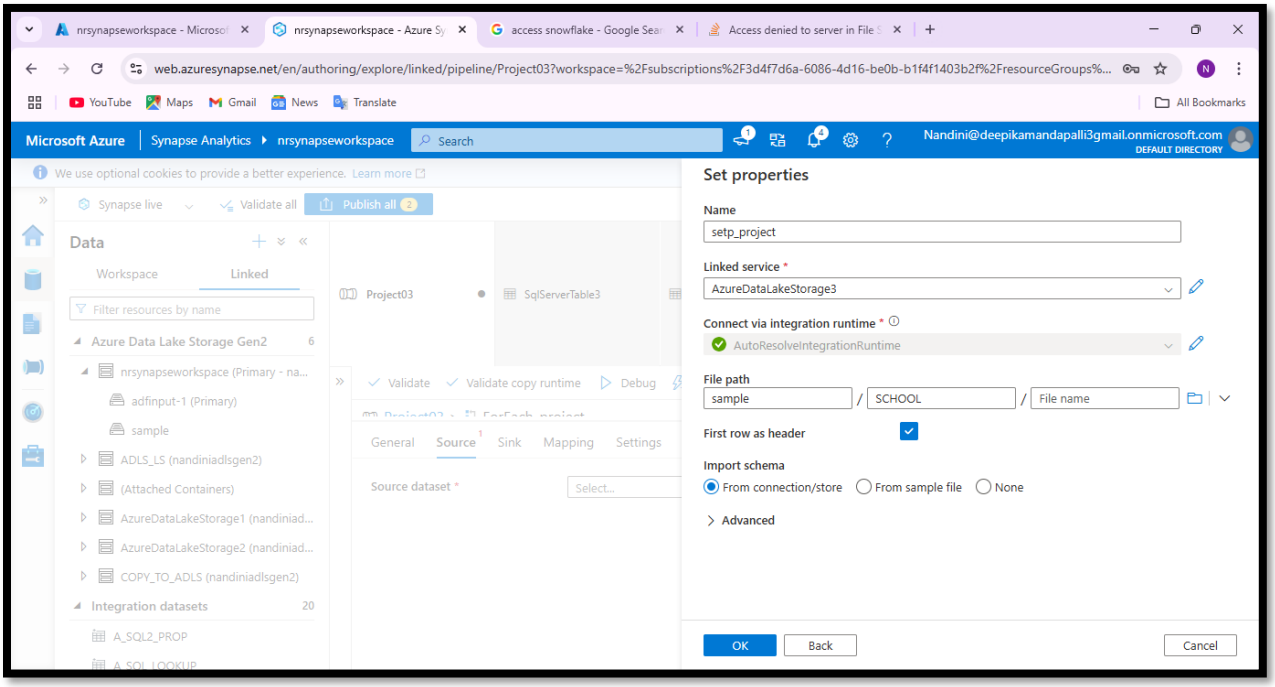
3. Copy the data from ADLS Gen2 back to a designated file system folder on the local C: drive.



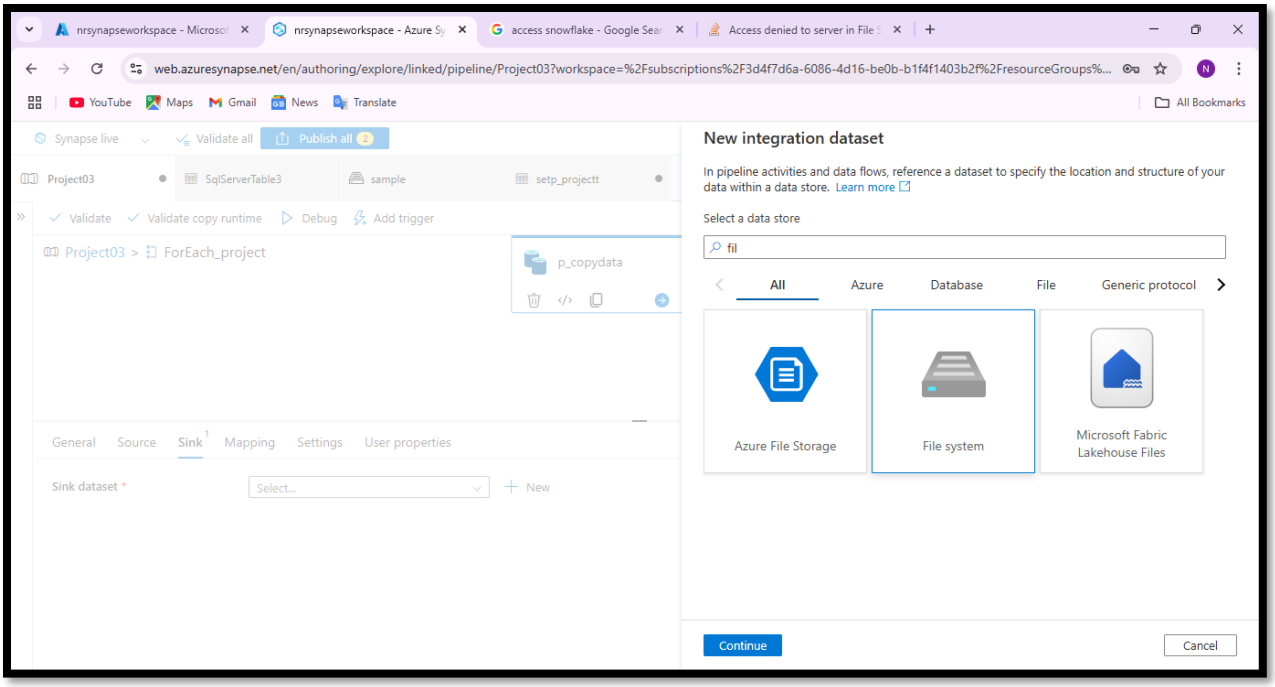
30. NOW FOR LOADING OF DATA FROM CLOUD TO SQL SERVER,USE COPY ACTIVITY IN THE SAME PIPELINE HERE FOR SOURCE DATASET→ADLSGEN2,SINK →FILE SERVER.



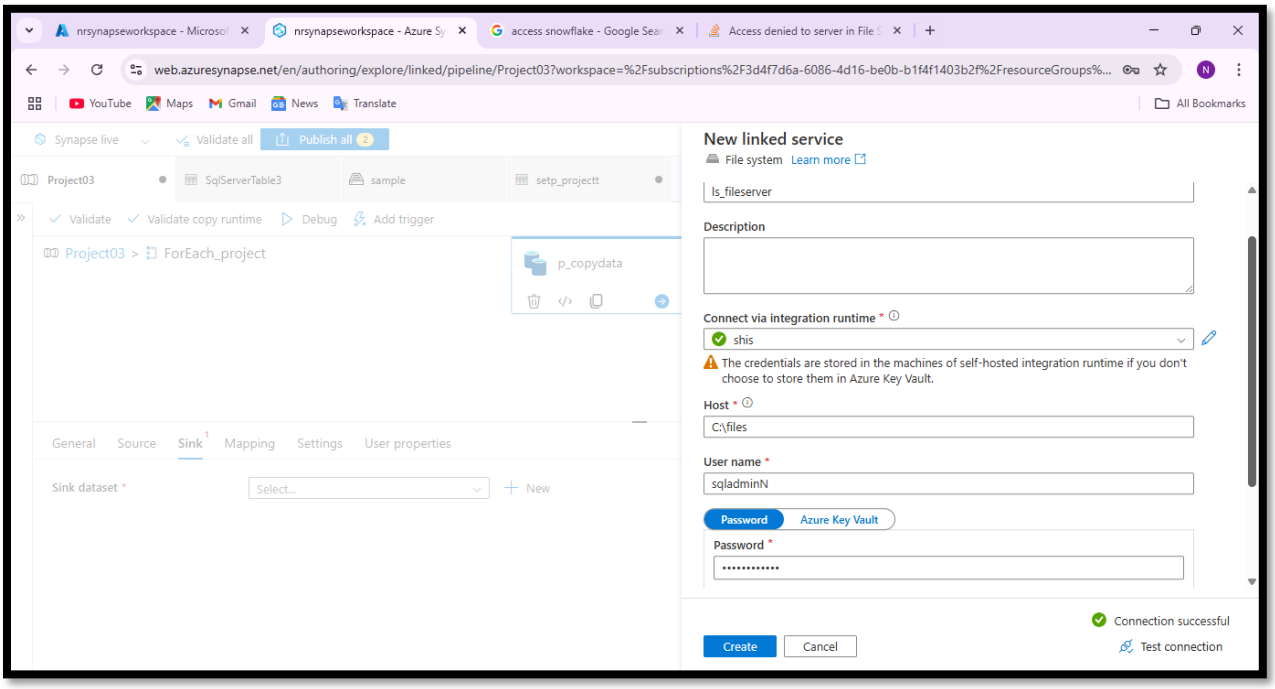




31.SELECT FOLDER WHICH YOU WANT TO LOAD ON-PREMISE.

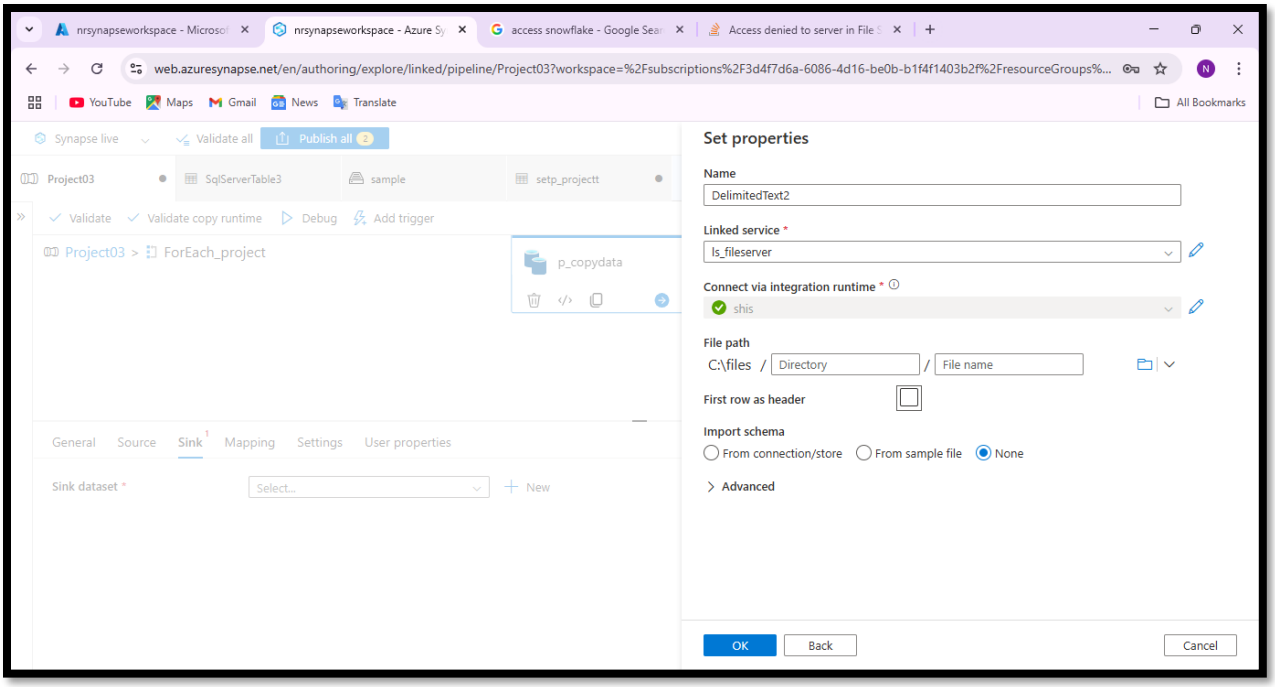


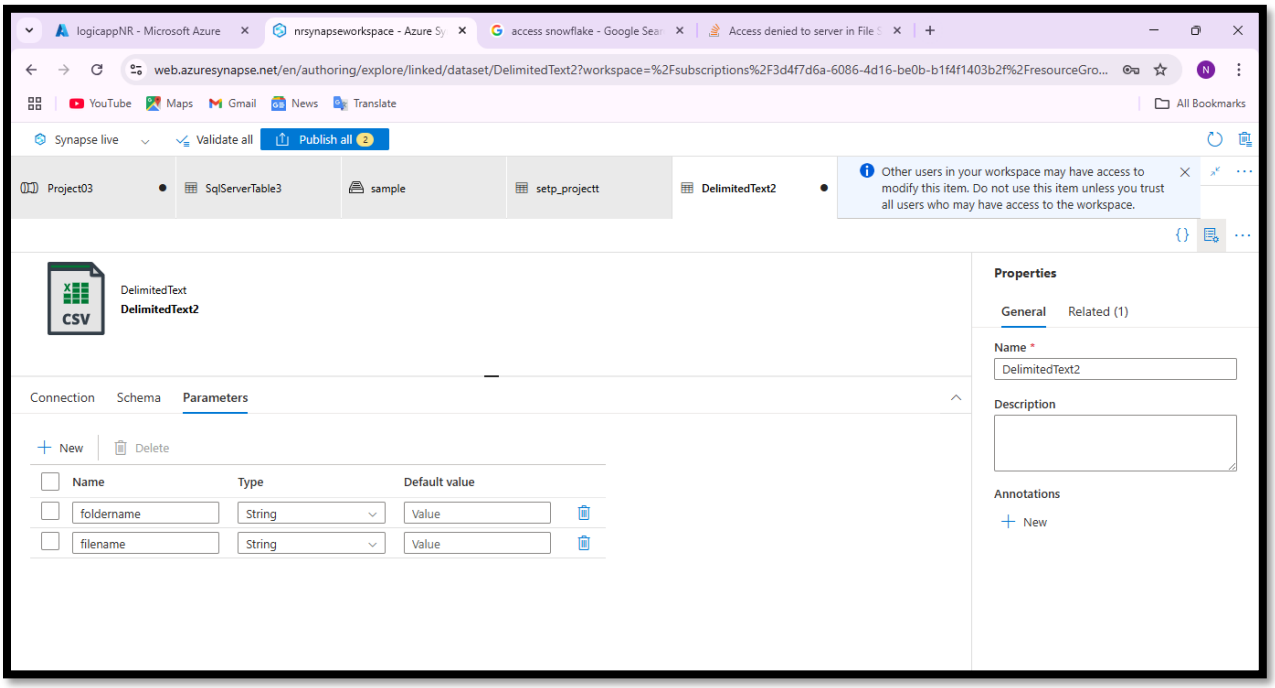
33.FOR SINK→FILE SYSTEM.



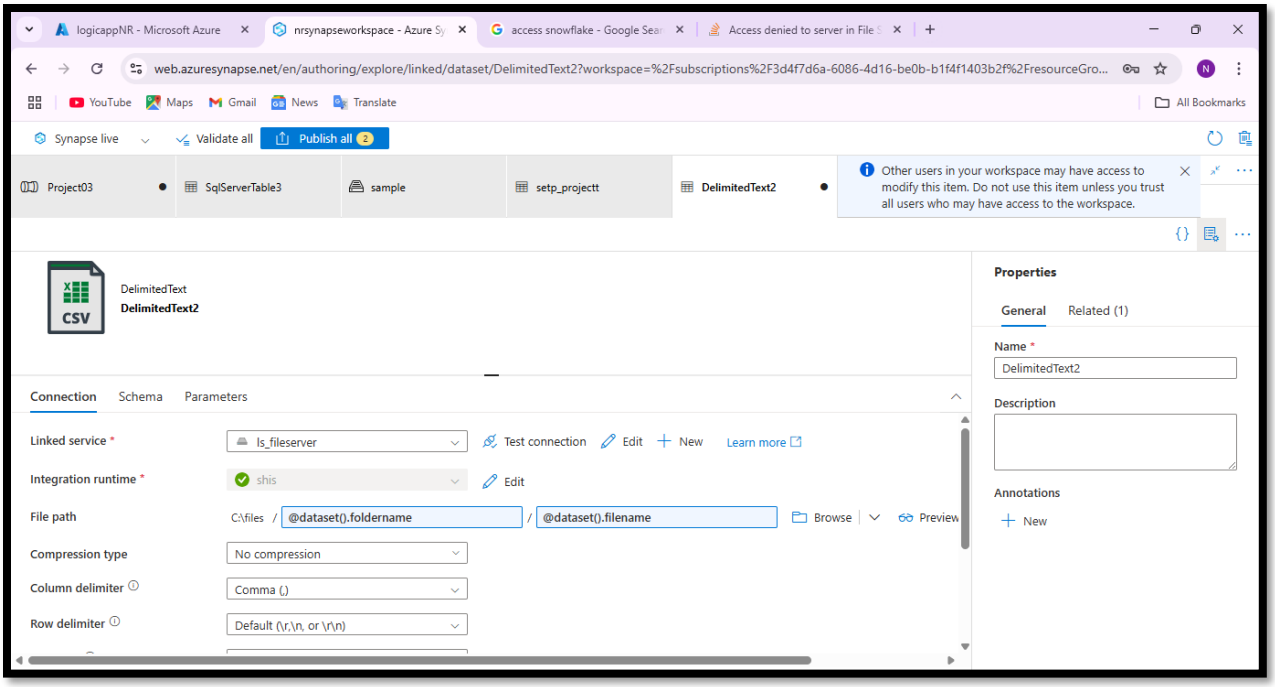
34.SELECT SHIR,HOST ,CREATE LINKED SERVICE.

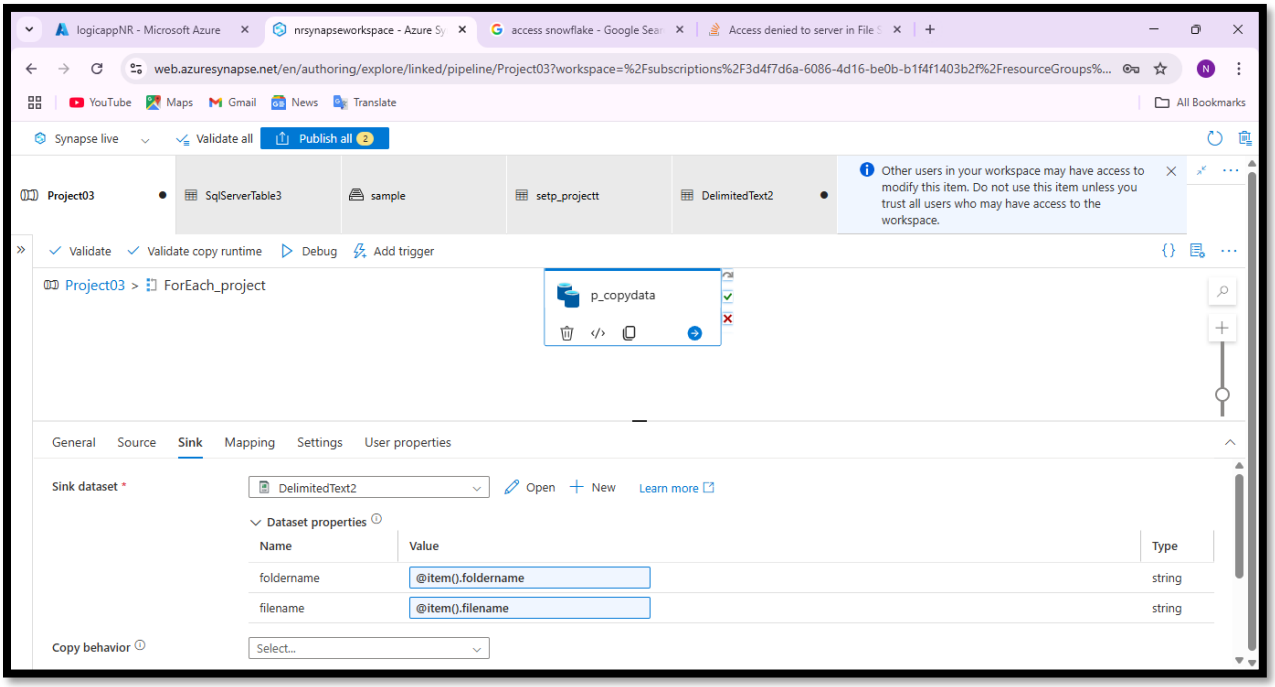
HERE I WANT TO LOAD FROM CLOUD TO ON-PREMISE THAT'S WHY I USE "SHIR". THAT I HAVE CREATED IN VM.

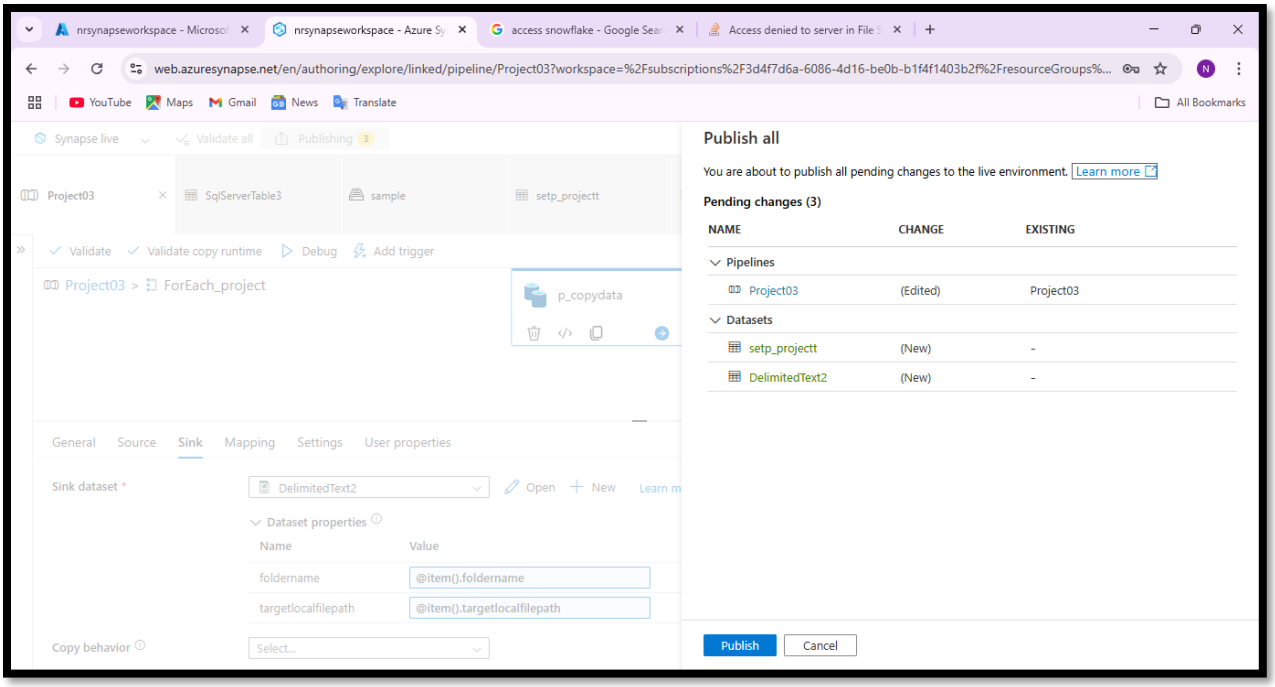




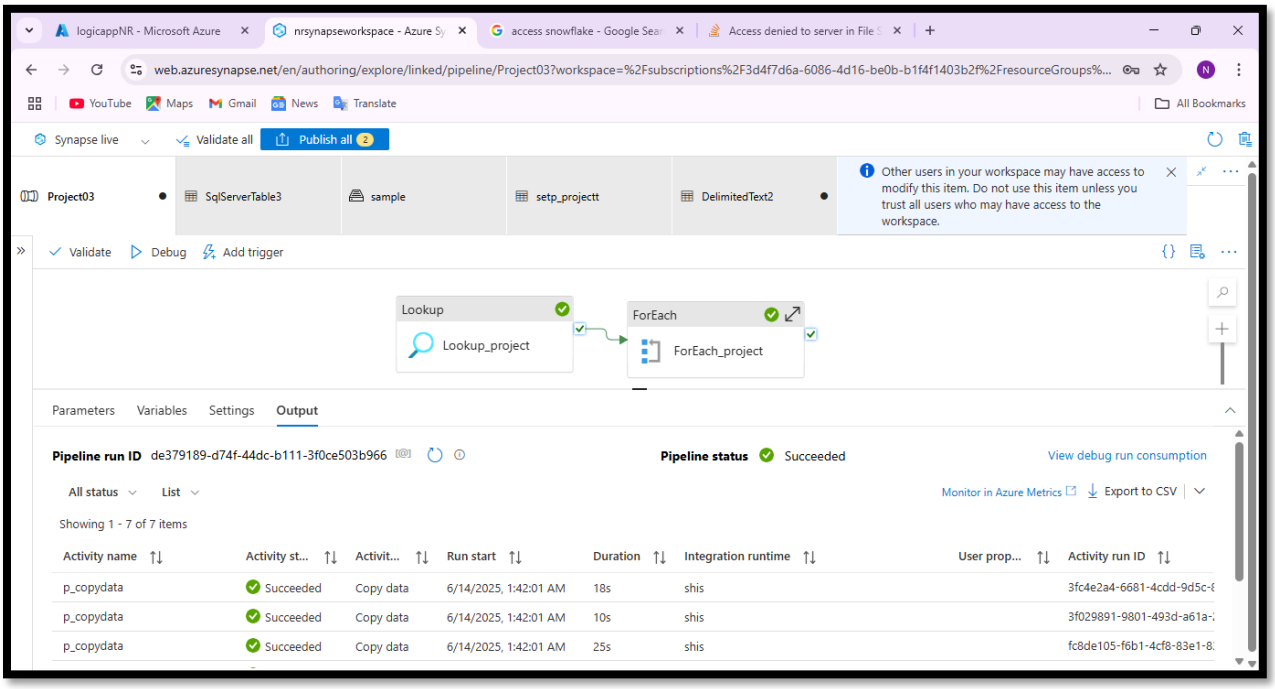
.CREATE PARAMETERS FOR FOLDERNAME AND FILENAME.


Project03
SqlServerTable3
sample
setp_projectt
DelimitedText2
Other users in your workspace may have access to modify this item. Do not use this item unless you trust all users who may have access to the workspace.
DelimitedText
DelimitedText2
Properties
General
Related (1)
Name *
DelimitedText2
Description
Annotations
New
Connection
Schema
Parameters
Linked service *
ls_fileserver
Test connection
Edit
New
Learn more
Integration runtime *
shis
Edit
File path
C:\files
@dataset().foldername
@dataset().filename
Browse
Preview
Compression type
No compression
Column delimiter
Comma (,)
Row delimiter
Default (\r,\n, or \r\n)

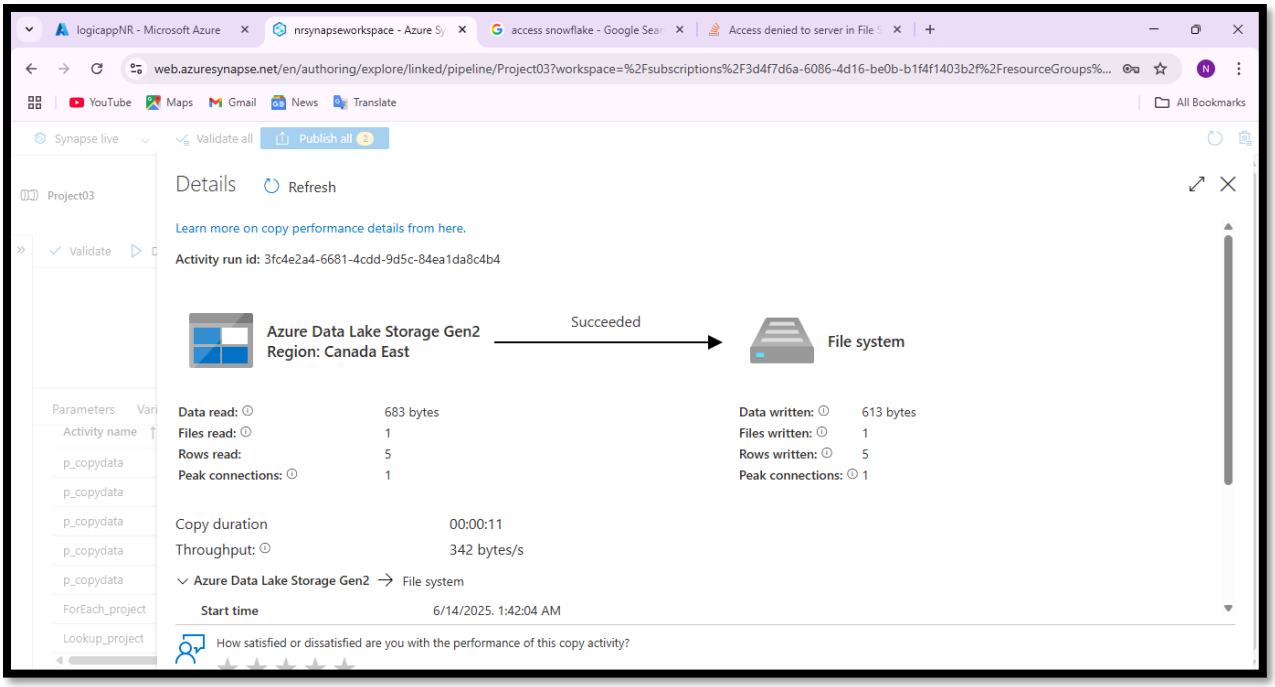

Project03
SqlServerTable3
sample
setp_projectt
DelimitedText2
Other users in your workspace may have access to modify this item. Do not use this item unless you trust all users who may have access to the workspace.
Validate
Validate copy runtime
Debug
Add trigger
Project03 > ForEach_project
p_copydata
General
Source
Sink
Mapping
Settings
User properties
Sink dataset *
DelimitedText2
Open
New
Learn more
Dataset properties
Name
Value
Type
foldername
@item().foldername
string
filename
@item().filename
string
Copy behavior
Select...



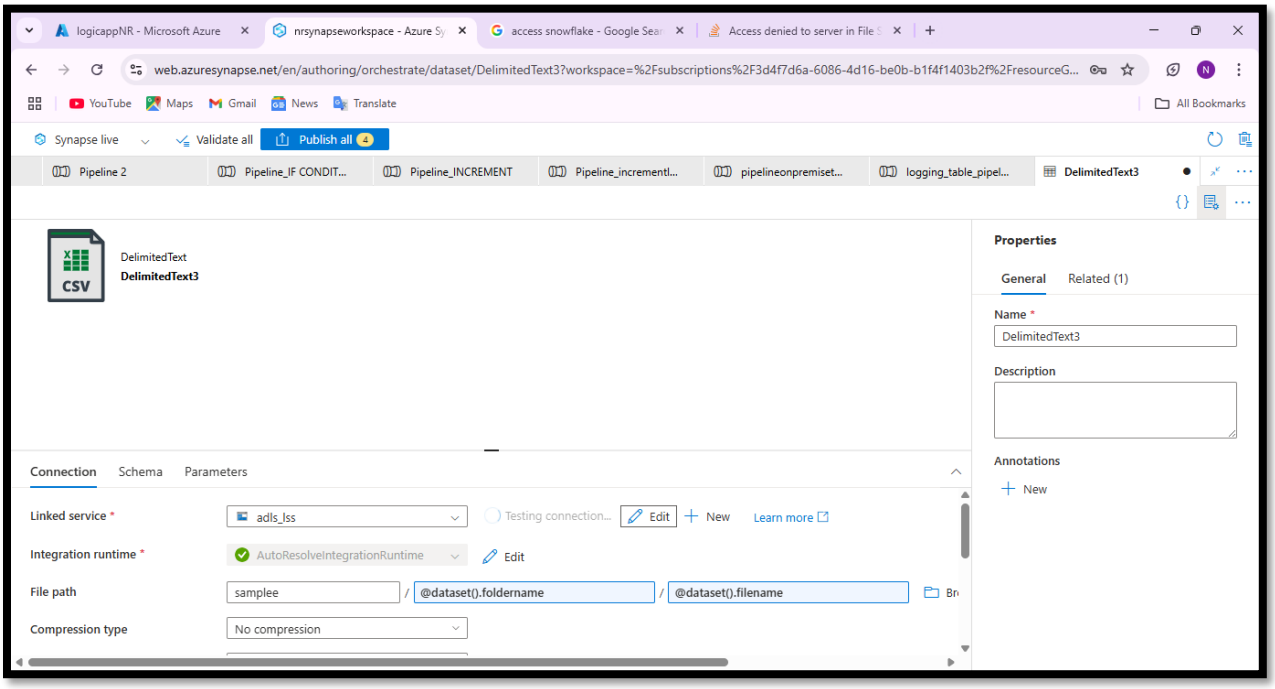
34.PUBLISH PIPELINE.

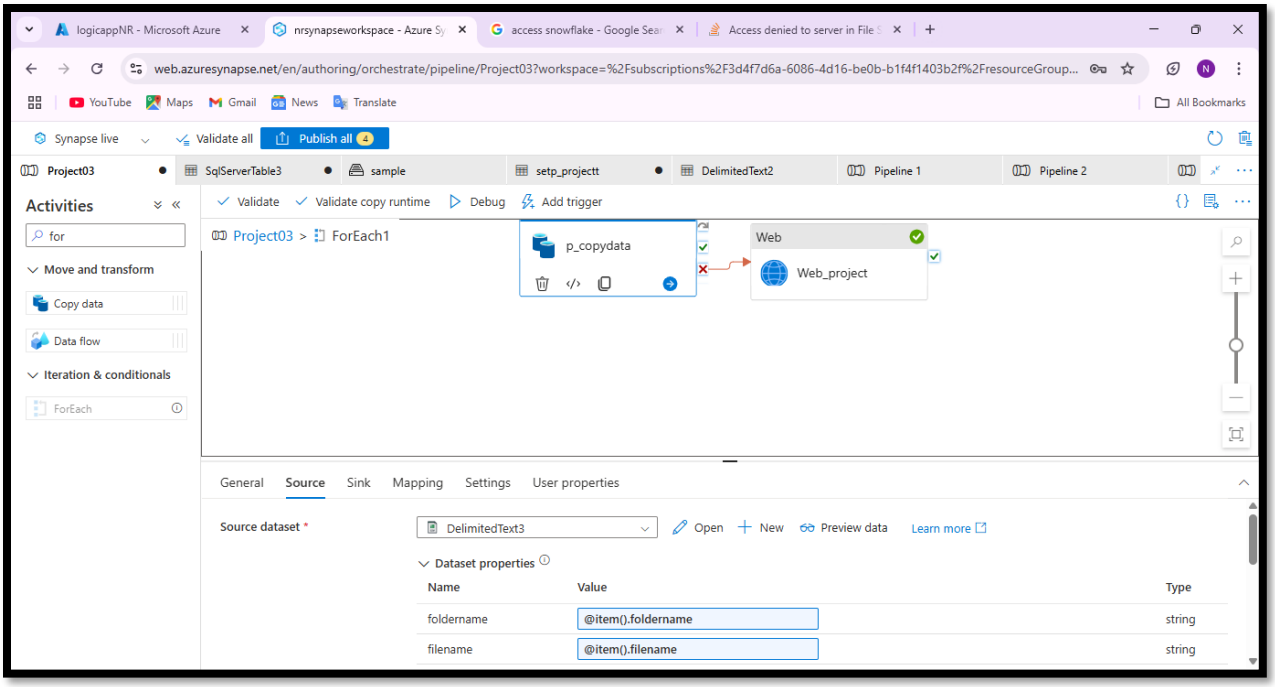


34.PIPELINE STATUS “SUCCEDED”.

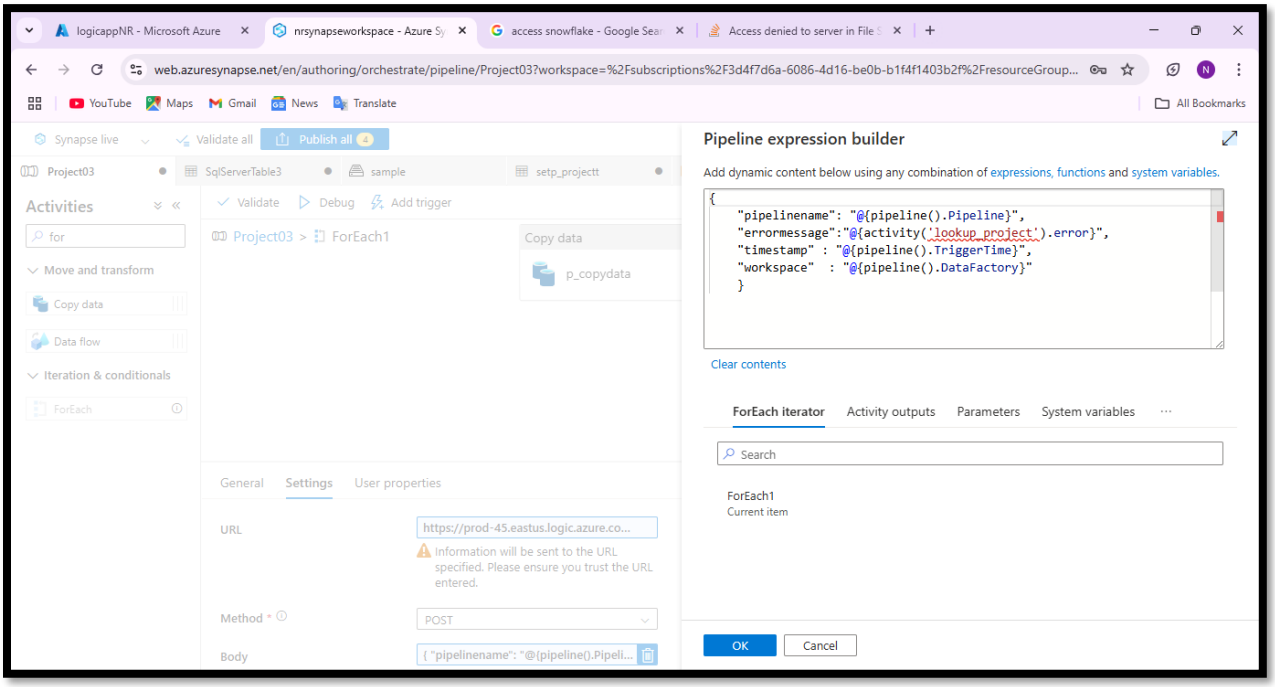


35. DATA LOADED FROM CLOUD TO ON –PREMISE.

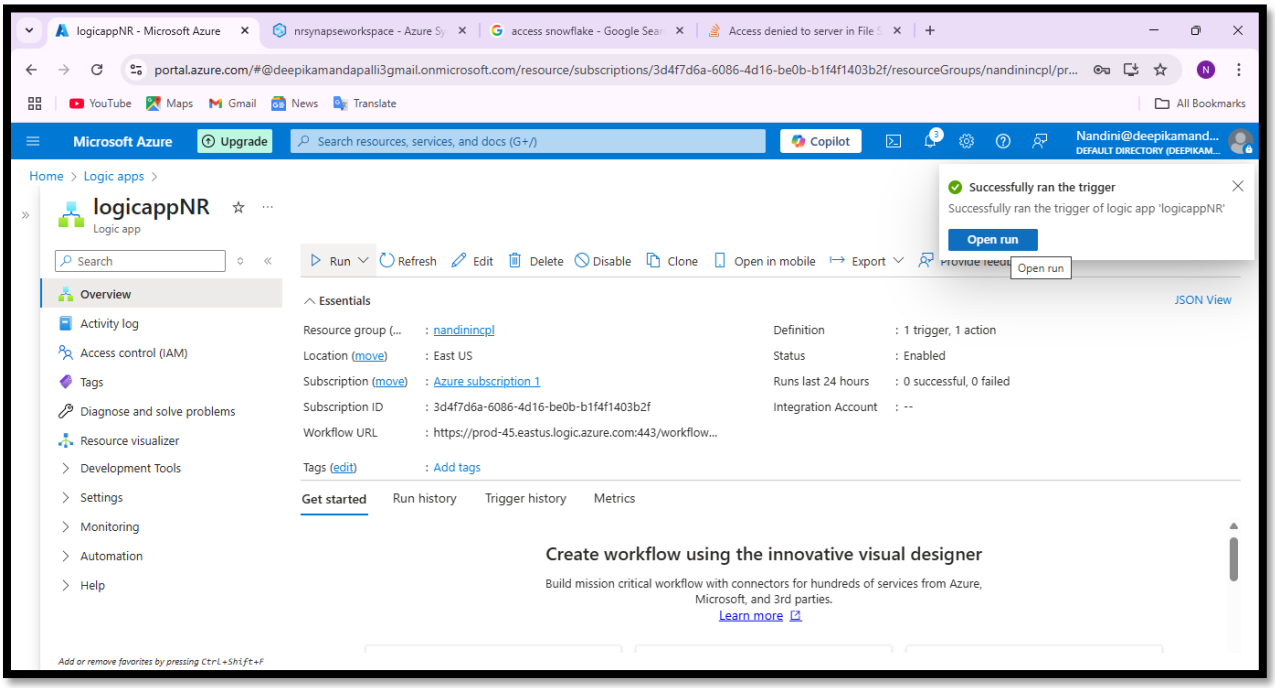




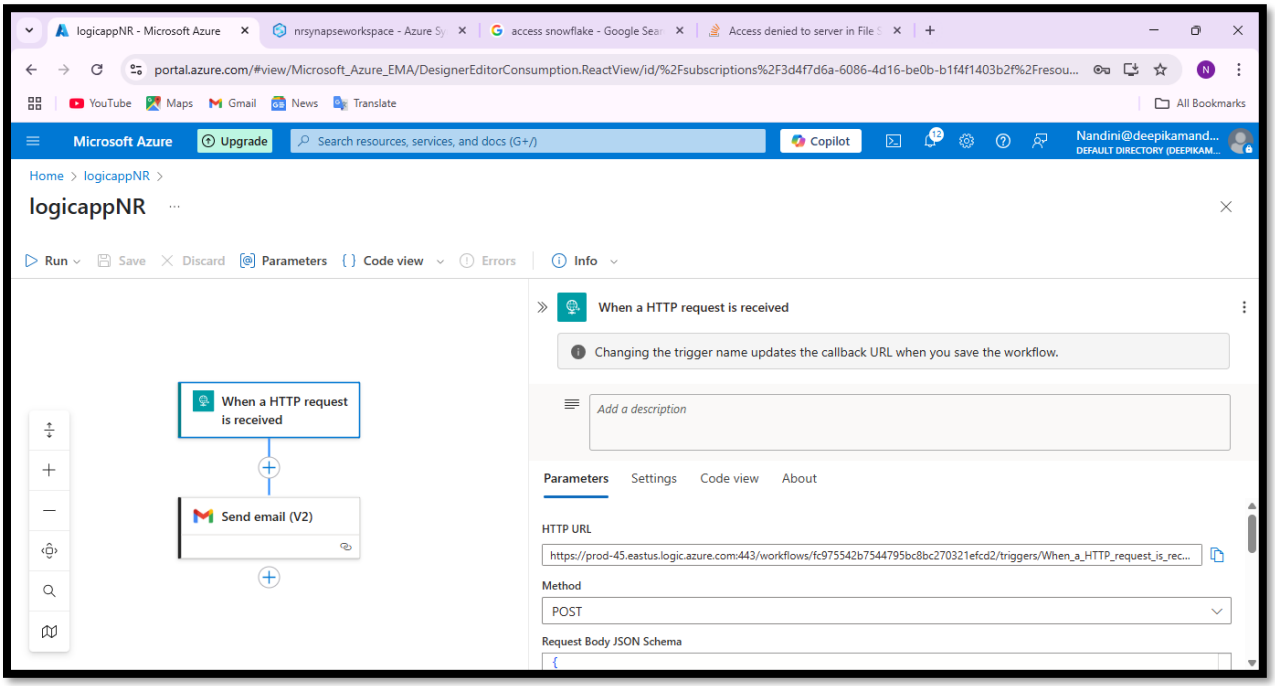
36.NOW CONNECT WEB ACTIVITY WITH COPY DATAIN FOREACH ACTIVITY. WE CONNECTED WEB ACTIVITY BECAUSE IF COPY DATA FAILS IT WILL SEND MAIL ABOUT PIPELINE STATUS BY CONNECTING SYNAPSE PIPELINE WITH LOGIC APPS.



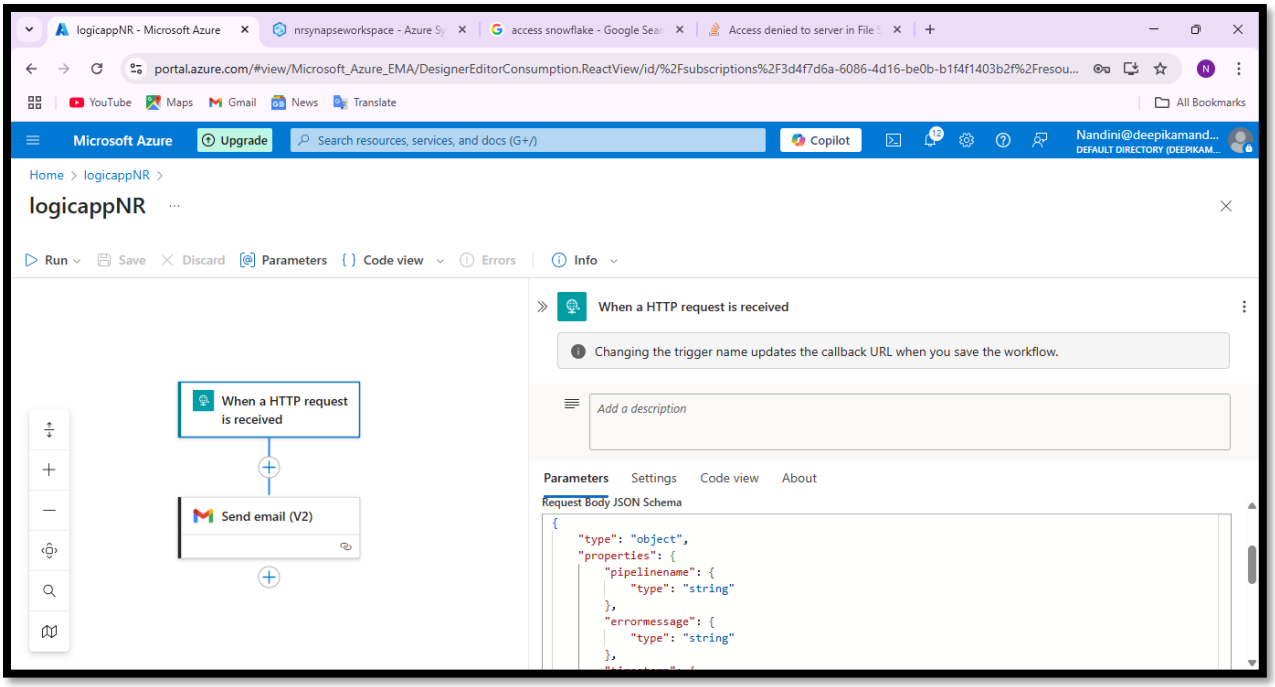
5. Implement the email configuration task by using logic apps and send an email for any failure.

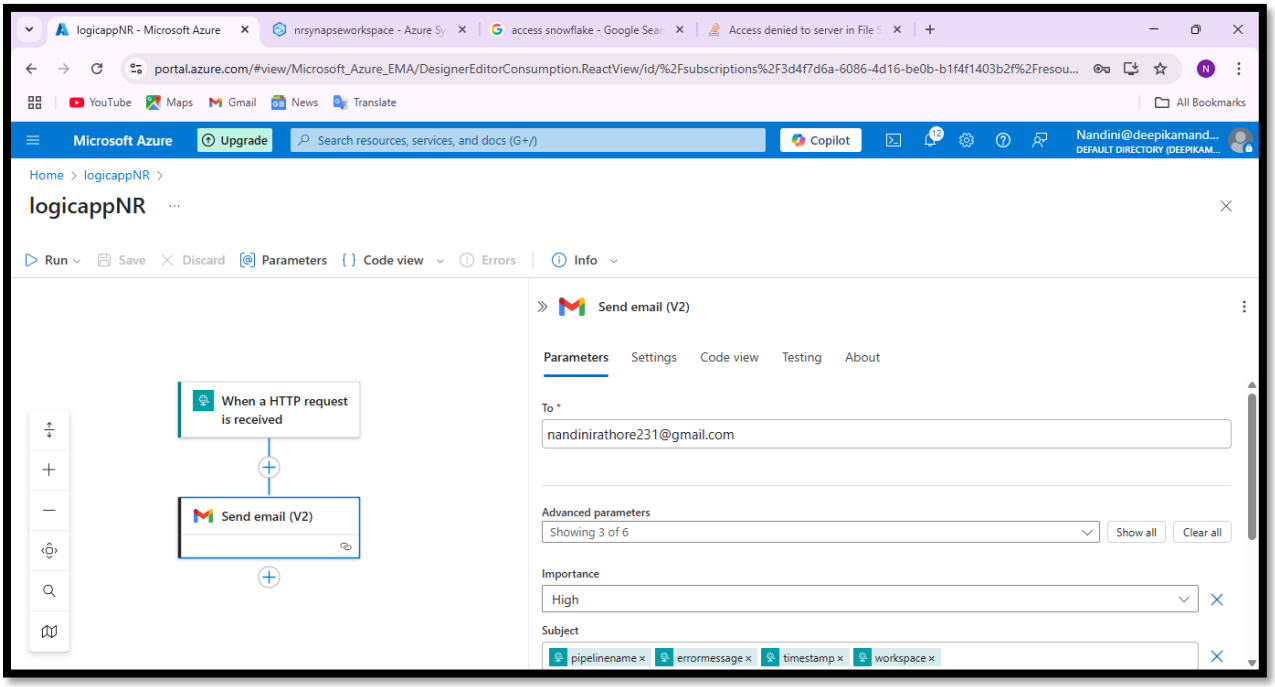


37.OPEN LOGIC APP,RUN IT.

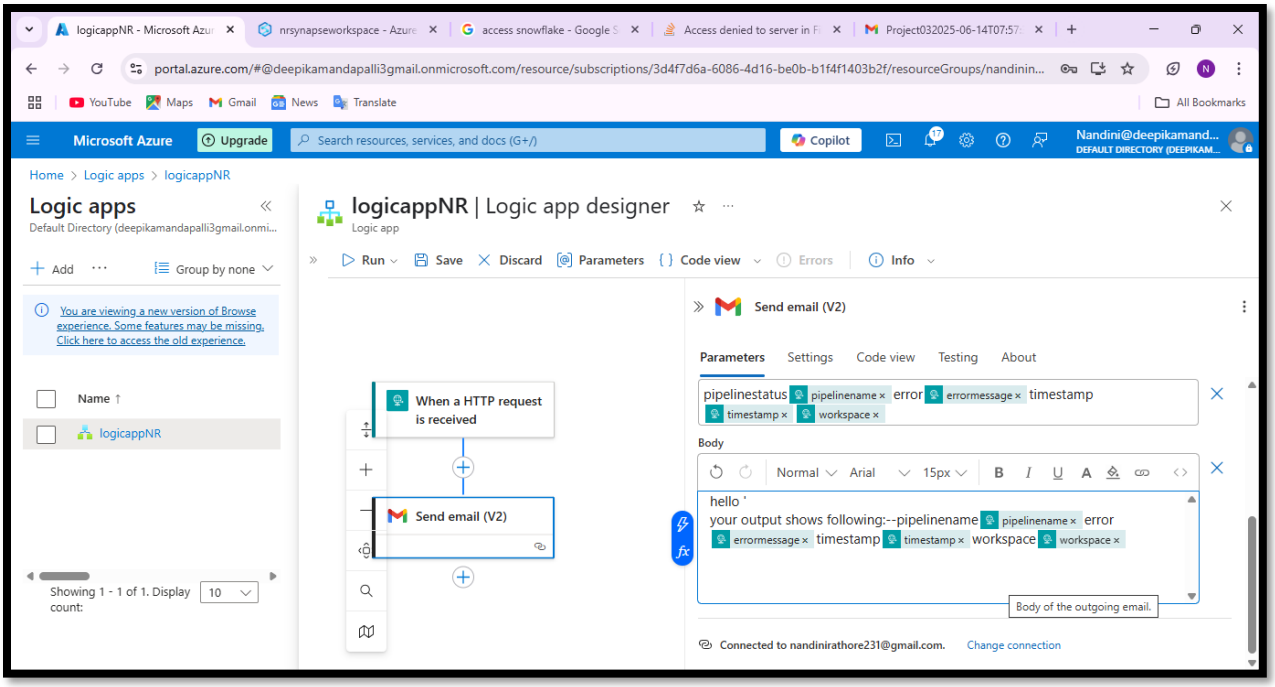


37.IN HTTP, ADD POST METHOD ,IN REQUEST BODY JSON SCHEMA→WRITE PIPELINENAME,ERRORMESSAGE,TIMESTAMP,WORKSPACE IN JSON FORMAT THAT YOU WANT TO SEE IN MESSAGE.

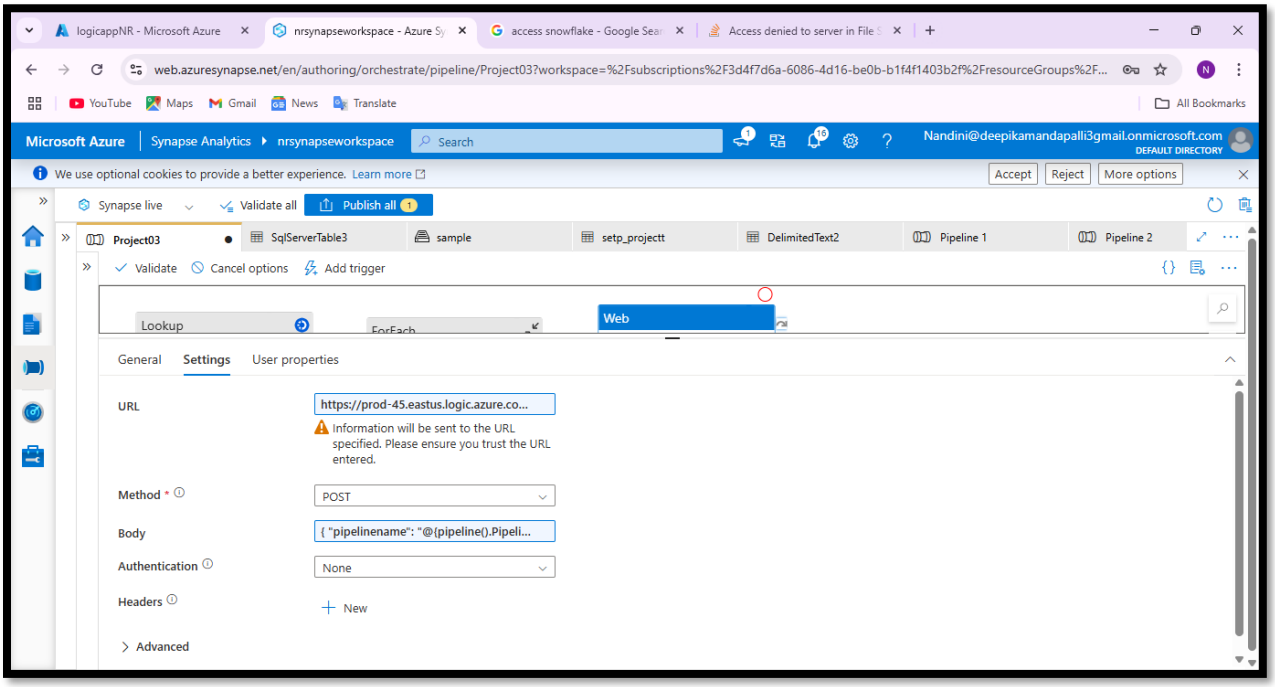




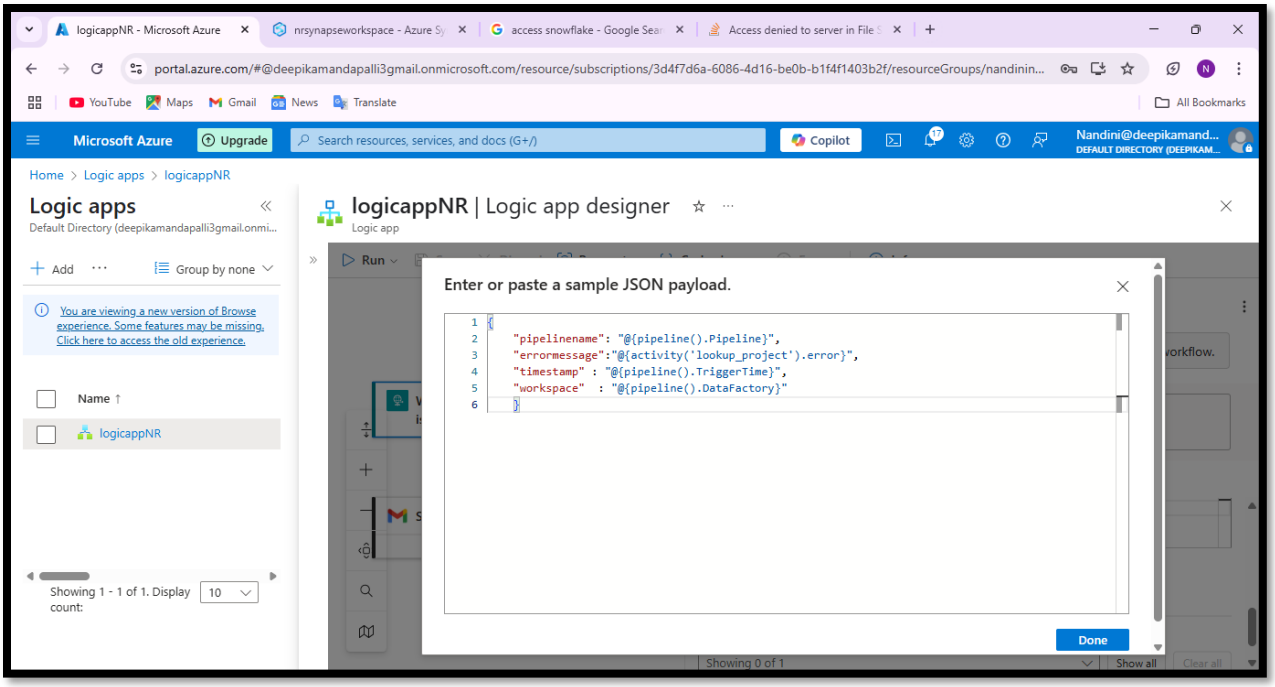
WRITE EMAIL ADDRESS TO WHOM YOU WANT WANT TO SEND A MESSAGE.SELECT PARAMETERS;IMPORTANCE,SUBJECT AND BODY.

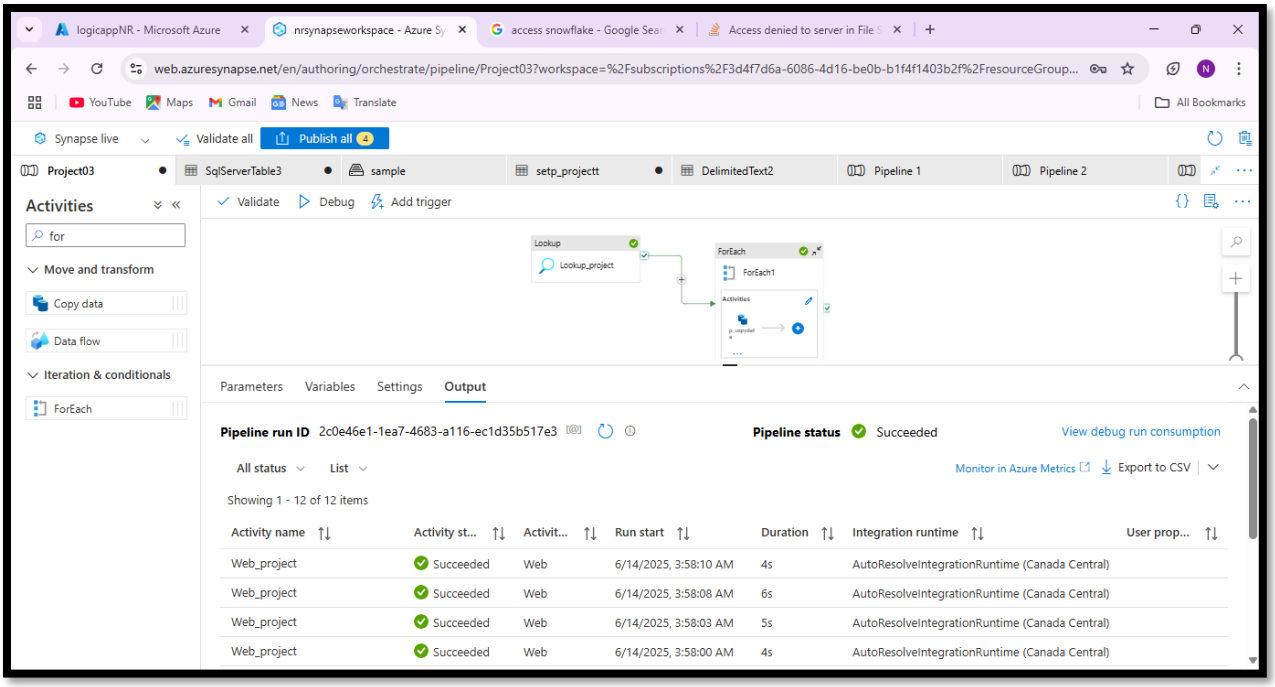


WRITE WHAT YOU WANT IN YOUR MESSAGE IN BODY. NOW SAVE THIS WORKFLOW. GO TO AZURE SYNAPSE.

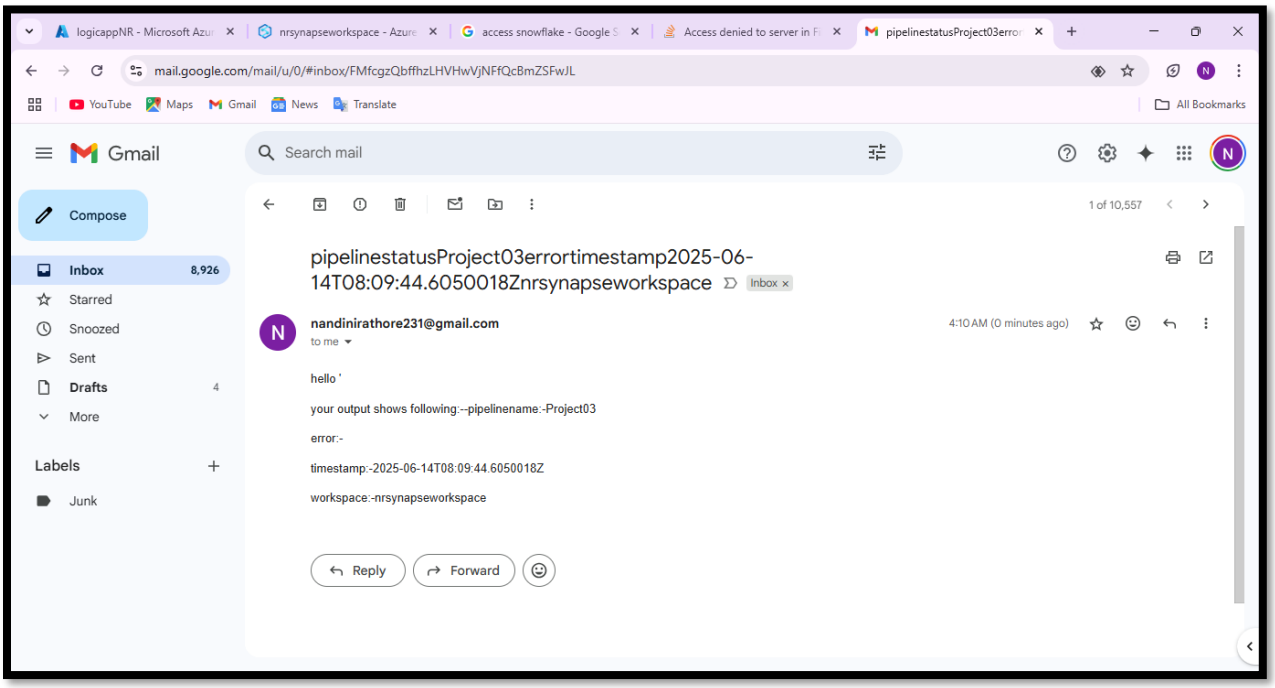


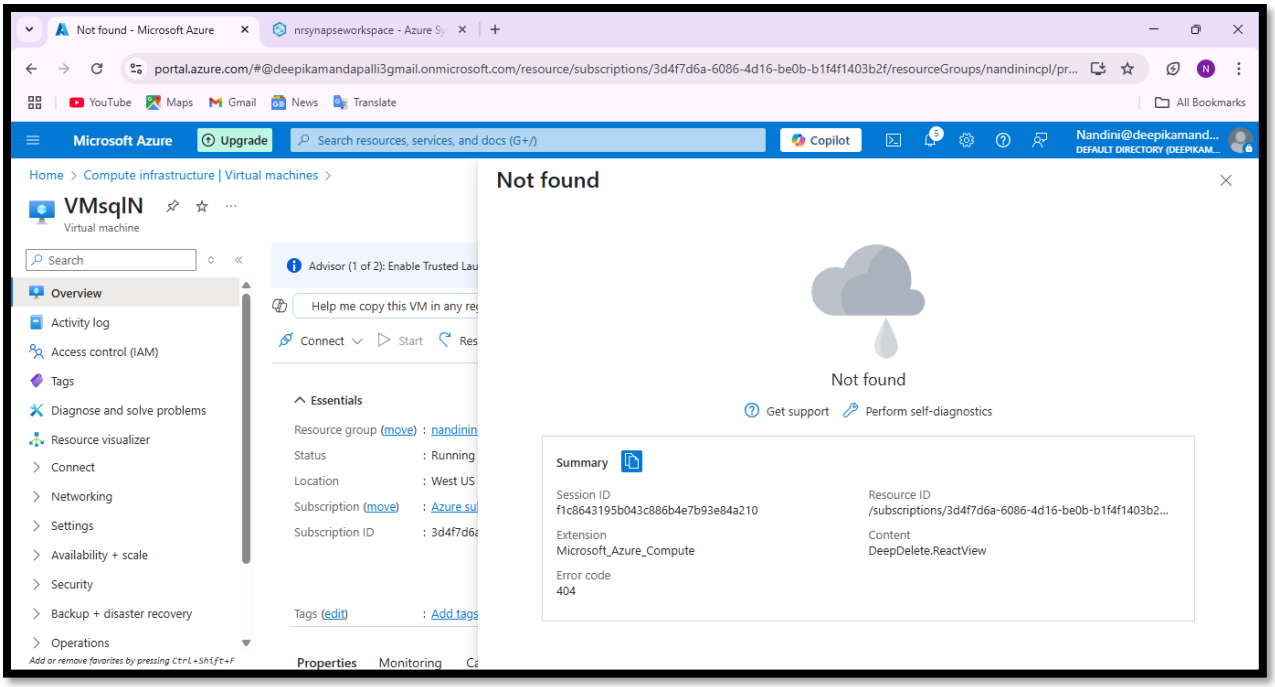
PASTE IN HTTP REQUEST WHERE JSON SCHEMA IS WRITTEN AND FROM THERE COPY URL AND PASTE THAT URL INTO URL OPTION OF WEB ACTIVITY.


logicappNR - Microsoft Azure
portal.azure.com/#@deepikamandapalli3gmail.onmicrosoft.com/resource/subscriptions/3d4f7d6a-6086-4d16-be0b-b1f4f1403b2f/resourceGroups/nandinin...
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
Home > Logic apps > logicappNR
Logic apps
Default Directory (deepikamandapalli3gmail.onmi...
Add
Group by none
You are viewing a new version of Browse experience. Some features may be missing. Click here to access the old experience.
Name
logicappNR
Showing 1 - 1 of 1. Display count: 10
logicappNR | Logic app designer
Logic app
Run
Enter or paste a sample JSON payload.
{
"pipelinename": "@{pipeline().Pipeline}",
"errormessage":"@{activity('lookup_project').error}",
"timestamp" : "@{pipeline().TriggerTime}",
"workspace" : "@{pipeline().DataFactory}"
}
Done
Showing 0 of 1
Show all
Clear all



I DID SOME MISTAKE MANUALLY SO THAT COPY ACTIVTY FAILS AND IT WILL SEND ME MAILBY USING WEB ACTIVITY.SO HERE WEB ACTIVITY IS SUCCESSFUL AND SEND ME AN EMAIL OF PIPELINE FAILURE SHOWING PIPELINENAME,ERRORMESSAGE,TIMESTAMP ,WORKSPACE.





AFTER DOING ALL THE WORK DELETE VM.