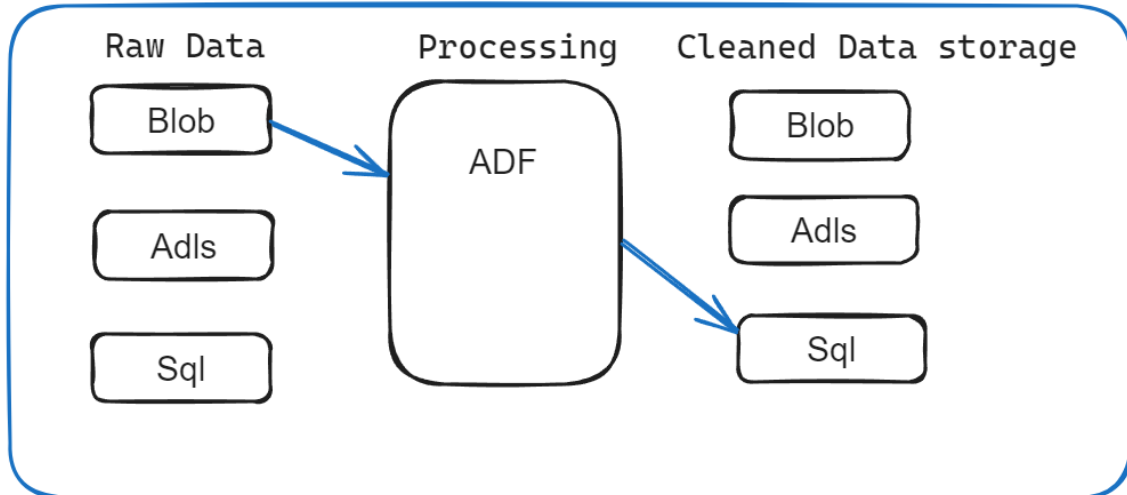


Azure Data Factory pipeline1

Architecture of pipeline1:

Blob to Azure Sql Database



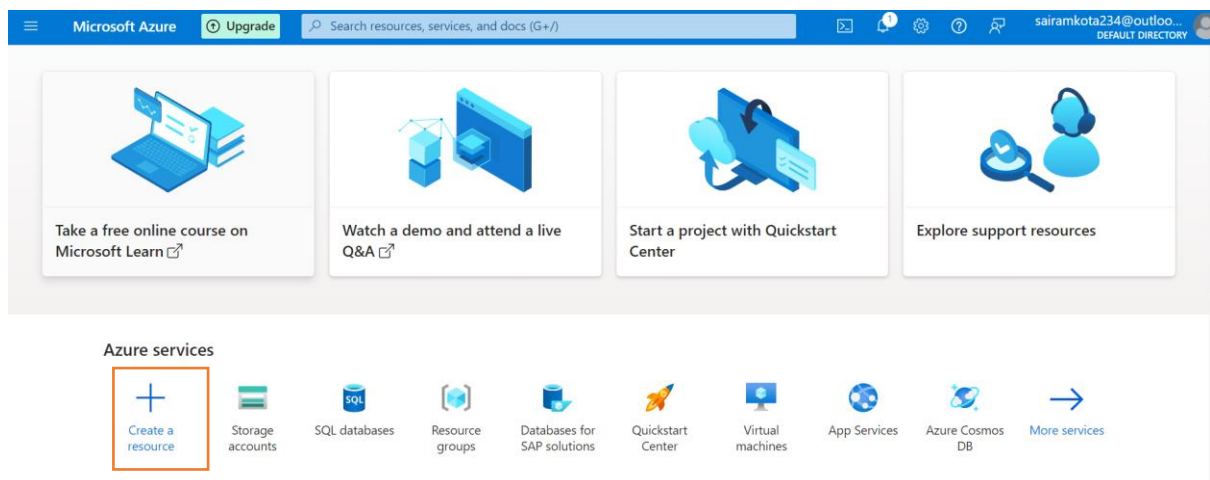
Description:

Etl process to transfer data from Blob storage to Sql Data Bases Using Azure Data Factory (ADF).

Azure Services Used:

- Azure Blob Storage
- Azure Sql Database
- Azure Data Factory

Creating Azure Bob Storage:



Click on Create Resource and click on storage and create Storage account name should be unique.

Create a resource

Developer tools

DevOps

Identity

Integration

Internet of Things

IT & Management Tools

Media

Migration

Mixed Reality


Monitoring & Diagnostics


Networking

Security

Storage

Web

 Search services and marketplace

 Getting Started? Try our Quickstart center

Popular Azure services [See more in All services](#)



Azure Cosmos DB
[Create](#) | [Docs](#) | [MS Learn](#)



Storage account
[Create](#) | [Learn more](#)



Azure File Sync
[Create](#) | [Docs](#) | [MS Learn](#)



Data Lake Storage Gen1
[Create](#) | [Docs](#) | [MS Learn](#)

Popular Marketplace products [See more in Marketplace](#)



Azure Blob Storage on IoT Edge
[Create](#) | [Learn more](#)



Azure Cost Management plan
[Create](#) | [Learn more](#)



Cloud Manager (by Cap PYGO by Hour, WORM and data services)
[Set up + subscribe](#) | [Learn more](#)




Dionar Managed Azure - CSP
[Create](#) | [Learn more](#)

Click on Storage Account and fill all the mandatory details.

- Click on the type of Subscription.
- Create a resource group if already exists select one.
- Give Storage account name.
- Choose the Region and Performance.
- Select type of Redundancy
- Need to create a type of File systems then click on Enable hierarchical namespace.
- Choose type of Access tier
- If want to change the type of delete data protection of days for **soft delete blobs or soft delete containers gives the required days.**

Create a storage account ...




Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#) 

Project details

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.



Subscription *	Free Trial 
Resource group *	(New) bikerg 
	Create new

Instance details

Storage account name * 	bikestorageaccount
Region * 	(US) East US 
	Deploy to an Azure Extended Zone


Performance *

- ☒ **Standard:** Recommended for most scenarios (general-purpose v2 account)
- ☐ **Premium:** Recommended for scenarios that require low latency.


Redundancy * 	Locally-redundant storage (LRS) 
--	---





[Previous](#)[Next](#)[Review + create](#)

If you choose Enable hierarchical namespace it will create Azure Data Lake Storage.



Enable hierarchical namespace 	<input type="checkbox"/>
---	--------------------------

Access protocols

Blob and Data Lake Gen2 endpoints are provisioned by default [Learn more](#) 

- Enable SFTP  ☐  SFTP can only be enabled for hierarchical namespace accounts
- Enable network file system v3  ☐  To enable NFS v3 'hierarchical namespace' must be enabled. [Learn more about NFS v3](#)

Blob storage

- Allow cross-tenant replication  ☐
- Access tier  ☐ **Hot:** Optimized for frequently accessed data and everyday usage scenarios
- ☒ **Cool:** Optimized for infrequently accessed data and backup scenarios

Azure Files

- Enable large file shares  ☐

[Previous](#)[Next](#)[Review + create](#)

Recovery

Protect your data from accidental or erroneous deletion or modification.

☐ Enable point-in-time restore for containers
Use point-in-time restore to restore one or more containers to an earlier state. If point-in-time restore is enabled, then versioning, change feed, and blob soft delete must also be enabled. [Learn more](#)

☒ Enable soft delete for blobs
Soft delete enables you to recover blobs that were previously marked for deletion, including blobs that were overwritten. [Learn more](#)

Days to retain deleted blobs 7

☒ Enable soft delete for containers
Soft delete enables you to recover containers that were previously marked for deletion. [Learn more](#)

Days to retain deleted containers 7

☒ Enable soft delete for file shares
Soft delete enables you to recover file shares that were previously marked for deletion. [Learn more](#)

Days to retain deleted file shares 7

Tracking

Previous

Next

Review + create

If we have tags, please add it, and create it.

Once completed Azure blob storage click on containers and container and drops the files.

The screenshot shows the Azure portal interface for a storage account. The breadcrumb navigation indicates the path: Home > bikestorageaccount_1713102627477 > Overview > bikestorageaccount. The main heading is 'bikestorageaccount | Containers'. Below this, there's a search bar for containers and a table listing the containers. The table has columns for Name, Last modified, Anonymous access level, and Lease state. One container named 'Slogs' is listed with a last modified date of 4/14/2024, 7:21:19 PM, Private access level, and Available lease state. In the left-hand navigation pane, the 'Storage Mover' option is highlighted with a red box.

Name	Last modified	Anonymous access level	Lease state
Slogs	4/14/2024, 7:21:19 PM	Private	Available

Give the name of the container and create. Once created dataset add files to the dataset using upload option.

unt | Containers

« + Container Change access level Restore containers Refresh Delete

Search containers by prefix

Name	Last modified
<input type="checkbox"/> \$logs	4/14/2024, 7:21:19 PM

New container

Name *
dataset ✓

Anonymous access level ⓘ
Private (no anonymous access) ▼

i The access level is set to private because anonymous access is disabled on this storage account.

Advanced

Create

Give feedback

dataset
Container

Search

Upload Change access level Refresh Delete

Authentication method: Access key (Switch to Microsoft Entra user account)
Location: dataset

Search blobs by prefix (case-sensitive)

Add filter

Name	Modified
No results	

Upload blob

Drag and drop files here
or
Browse for files

☐ Overwrite if files already exist

Advanced

Upload

Give feedback

dataset
Container

Search

Upload Change access level Refresh Delete Change tier Acquire lease Break lease View snapshots

Authentication method: Access key (Switch to Microsoft Entra user account)
Location: dataset

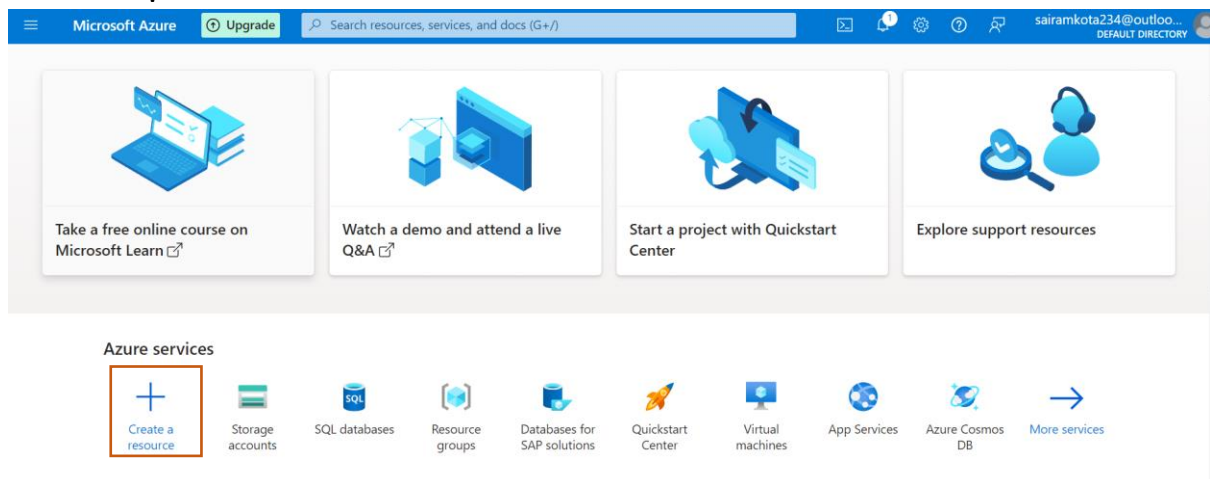
Search blobs by prefix (case-sensitive) Show deleted blobs

Add filter

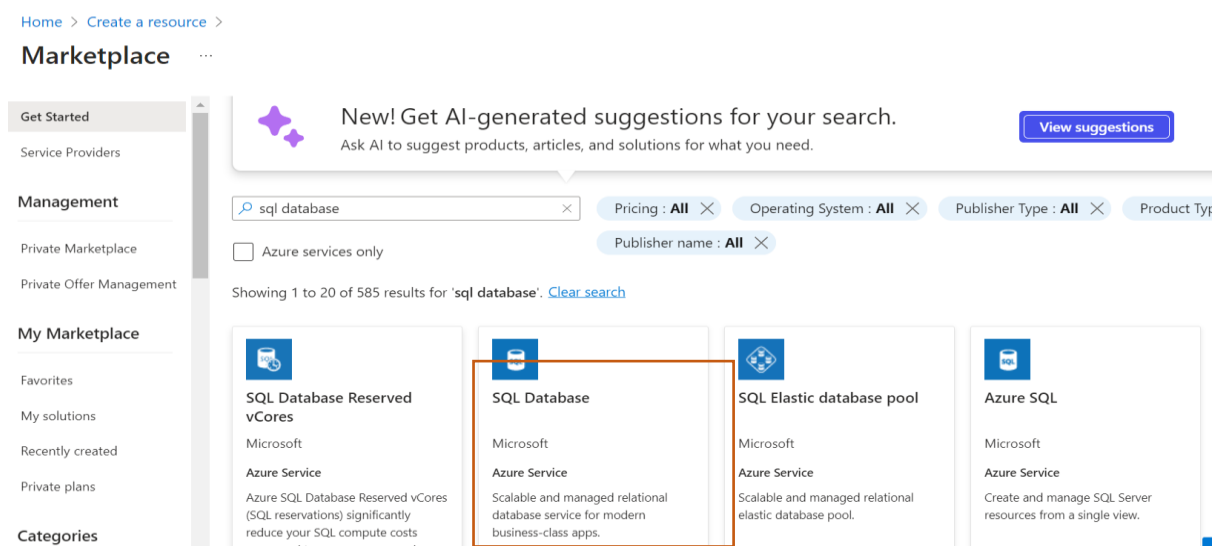
Name	Modified	Access tier	Archive status	Blob type	Size
<input type="checkbox"/> Bike_Data.xlsx	4/14/2024, 7:33:48 PM	Cool (Inferred)		Block blob	3.23

Bike Data successfully added into blob.

Azure Sql Database:



Search for Sql Database → Select Azure Sql Database




Create Sql Database, and fill required details.

- Select Subscription
- Select resource if not exists create a resource group.
- Give Database Name
- If we have server select server or click on create a server
 - Create new server.
 - Give server name.
 - Choose location.
 - Use Sql Authentication
 - Give Server admin login.
 - Give password and Confirm Password should match and click on ok.
- Choose Compute Storage type.
 - Choose Dtu – based purchasing model.
 - Choose Basic (For less demanding workloads) and click on ok.
- Choose the Back storage and redundancy based on the requirement.

[Home](#) > [Create a resource](#) > [Marketplace](#) > [SQL Database](#) >

Create SQL Database ...

Microsoft

 SQL Database Hyperscale: Low price, high scalability, and best feature set. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ	Free Trial
Resource group * ⓘ	bikerg

[Create new](#)

Database details

Enter required settings for this database, including picking a logical server and configuring the compute and storage resources

Database name *	lakshmandb
Server * ⓘ	Select a server

[Create new](#)

✖ The value must not be empty.


Want to use SQL elastic pool? ⓘ ☐ Yes ☒ No

Server details

Enter required settings for this server, including providing a name and location. This server will be created in the same subscription and resource group as your database.

Server name *	lakshmanserver
Location *	(US) East US

Authentication

 Azure Active Directory (Azure AD) is now Microsoft Entra ID. [Learn more](#)

Select your preferred authentication methods for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Microsoft Entra authentication [Learn more](#) using an existing Microsoft Entra user, group, or application as Microsoft Entra admin [Learn more](#), or select both SQL and Microsoft Entra authentication.

Authentication method

☐ Use Microsoft Entra-only authentication

☐ Use both SQL and Microsoft Entra authentication

☒ Use SQL authentication

Next:

Basics **Networking** Security Additional settings Tags Review + create

Configure network access and connectivity for your server. The configuration selected below will apply to the selected server 'lakshmanserver' and all databases it manages. [Learn more](#)

Network connectivity

Choose an option for configuring connectivity to your server via public endpoint or private endpoint. Choosing no access creates with defaults and you can configure connection method after server creation. [Learn more](#)

Connectivity method * ⓘ

☐ No access

☒ Public endpoint

☐ Private endpoint

Firewall rules

Setting 'Allow Azure services and resources to access this server' to Yes allows communications from all resources inside the Azure boundary, that may or may not be part of your subscription. [Learn more](#)

Setting 'Add current client IP address' to Yes will add an entry for your client IP address to the server firewall.

Allow Azure services and resources to access this server *

No Yes

Add current client IP address *

No Yes

Connection policy

Configure how clients communicate with your SQL database server. [Learn more](#)

Cost summary

Basic (Basic)	
Cost per DTU (in INR)	81.49
DTUs selected	x 5
ESTIMATED COST / MONTH	407.46 INR

[Review + create](#) < Previous Next: Security >

Choose Public end point and give firewalls to Yes for both.

1. Allow Azure services and resources to access this server.
2. Add current client IP address.

Remaining tabs all are default and create it will deploy.

Once completed deployment using power Query editor connect to the server giving server name & password and click on ok. After Successful login will see the Azure Sql.

Home > Microsoft.SqlDatabase.newDatabaseNewServer_09668a6196224cbdb8f65 | Overview > lakshmandb (lakshmanserv

lakshmandb (lakshmanserver/lakshmandb) | Query editor (preview)

SQL database

Search << Login + New Query ↑ Open query Feedback Getting started

Overview

Activity log

Tags

Diagnose and solve problems

Query editor (preview)

Settings

Compute + storage

Connection strings

Properties

Locks

Data management

Replicas

Query editor (preview) is a tool to run SQL queries against Azure S lightweight querying and object exploration in your database. For

Welcome to SQL Databa

SQL server authentication

Login *

lakshman

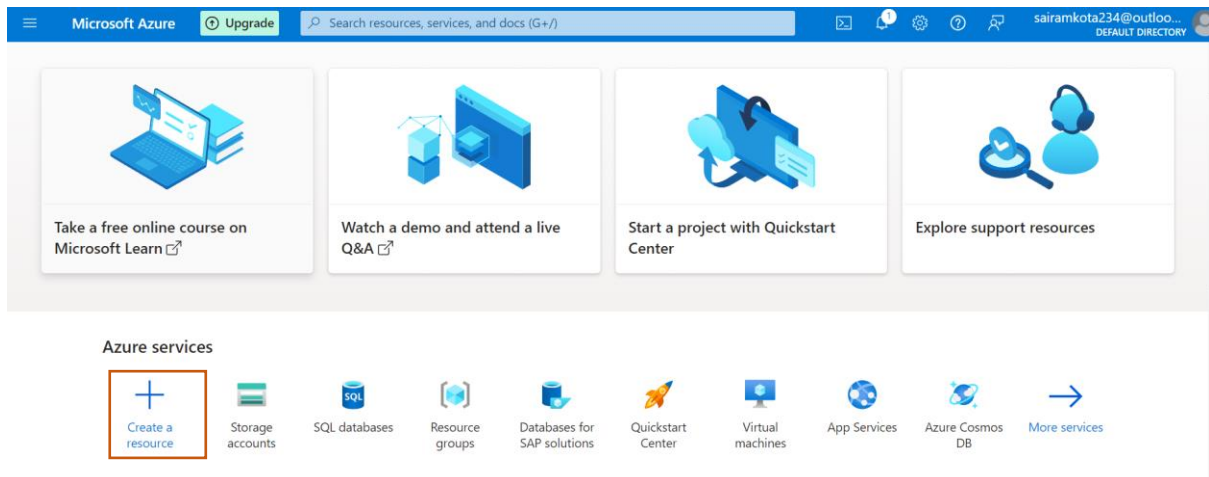
Password *

..... ✓

OR

OK

Azure Data Factory



Click on create resource → Search for Azure Data Factory

[Home](#) >

Create a resource

AI + Machine Learning

Analytics

Blockchain

Compute

Containers

Databases

Developer Tools

DevOps

Identity

Integration

Internet of Things

IT & Management Tools

Media

Migration



[Create](#) | [Docs](#) | [MS Learn](#)



Web App

[Create](#) | [Docs](#) | [MS Learn](#)



SQL Database

[Create](#) | [Docs](#) | [MS Learn](#)



Function App

[Create](#) | [Docs](#)



Key Vault

[Create](#) | [Docs](#) | [MS Learn](#)



Data Factory

[Create](#) | [Docs](#) | [MS Learn](#)



Template deployment (deploy using custom templates)

[Create](#) | [Docs](#) | [MS Learn](#)

Click on Azure Data Factory and fill the required details.

- Choose Subscription
- If we have resource group, please select otherwise create it.
- Give the instance details names
- Select region.
- By default, version is v2 only.

Remaining all tabs are default go and create the azure data factory.

[Home](#) > [Create a resource](#) >

Create Data Factory ...

One-click to create data factory with sample pipeline and datasets. [Try it](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

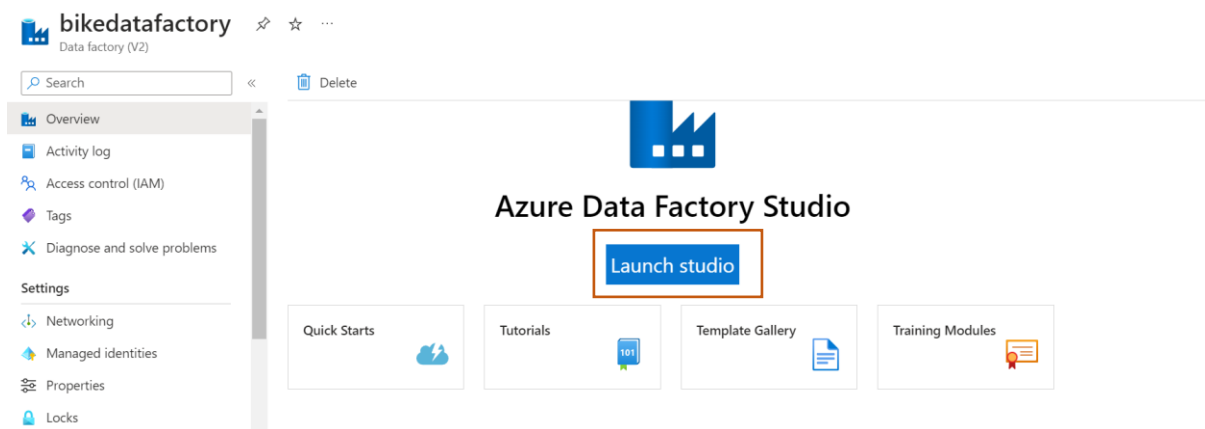
Subscription * ⓘ	Free Trial	▼
Resource group * ⓘ		▼
	Create new	

Instance details

Name * ⓘ	bikedatafactory	✓
Region * ⓘ	East US	▼
Version * ⓘ	V2	▼

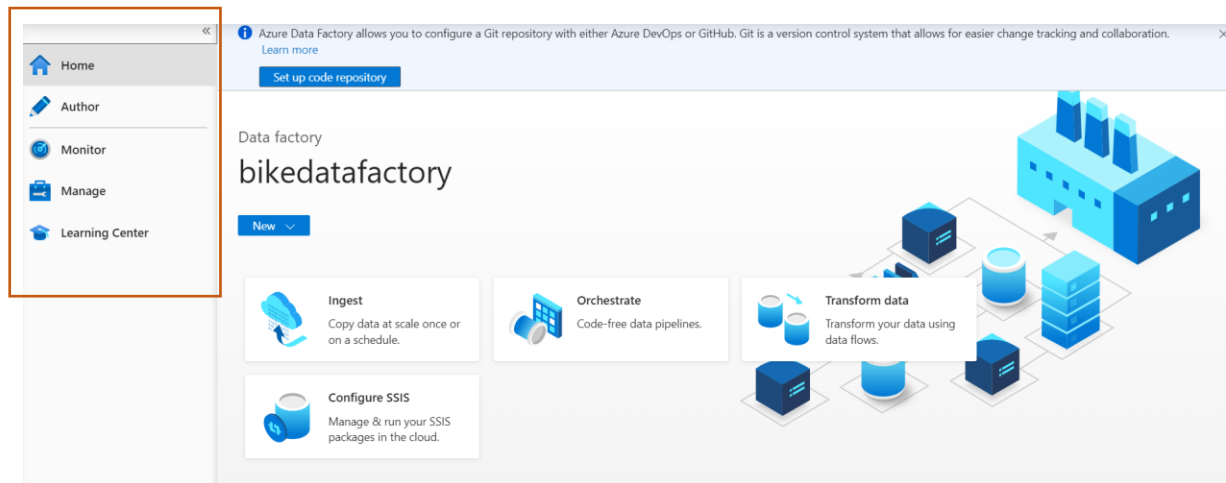
[Previous](#) [Next](#) [Review + create](#)

After Deployed of Azure Data Factory launch studio.

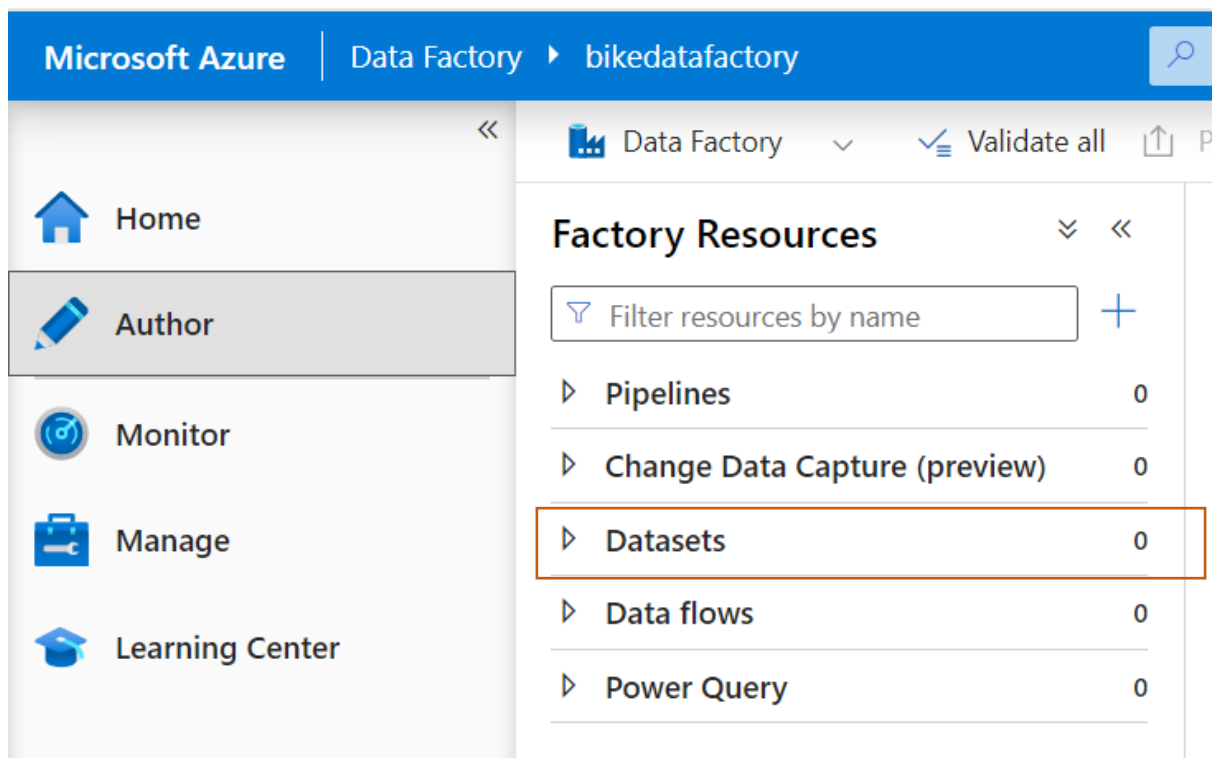


After launching Azure studio will see the below things.

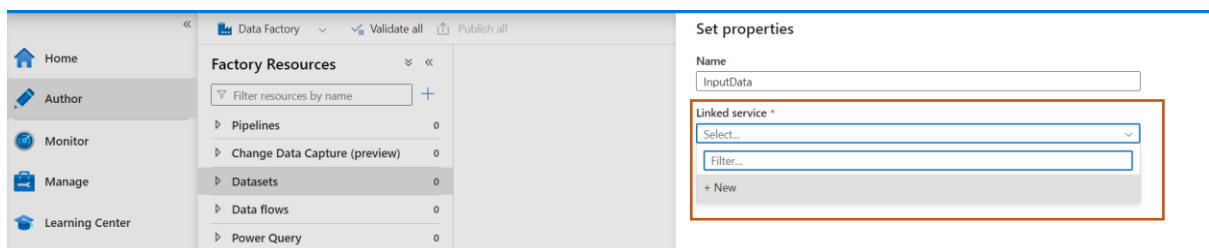
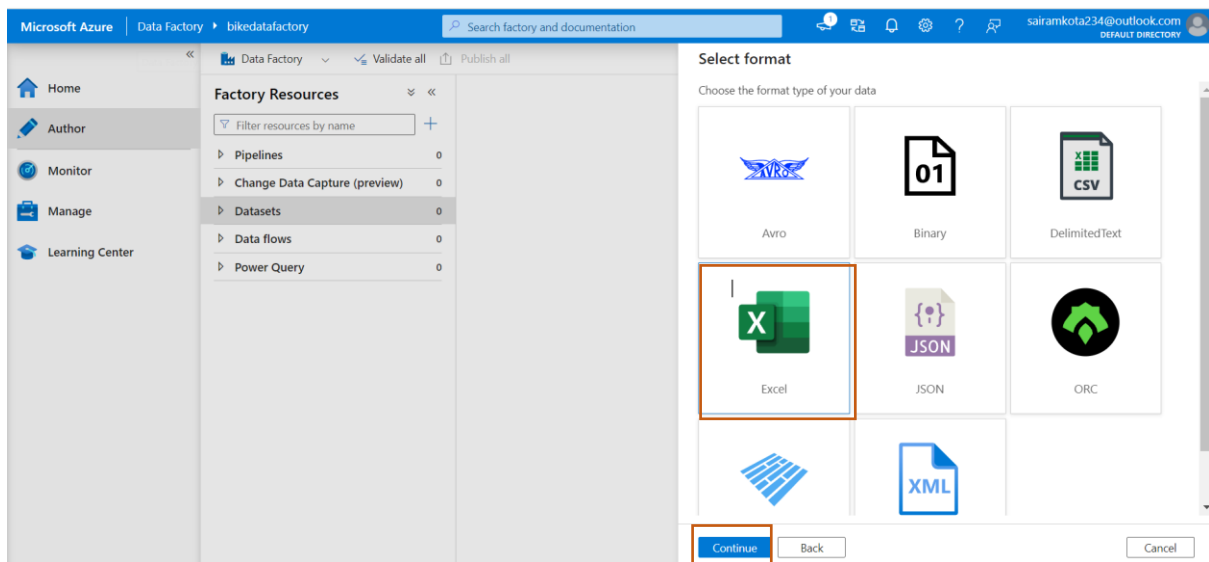
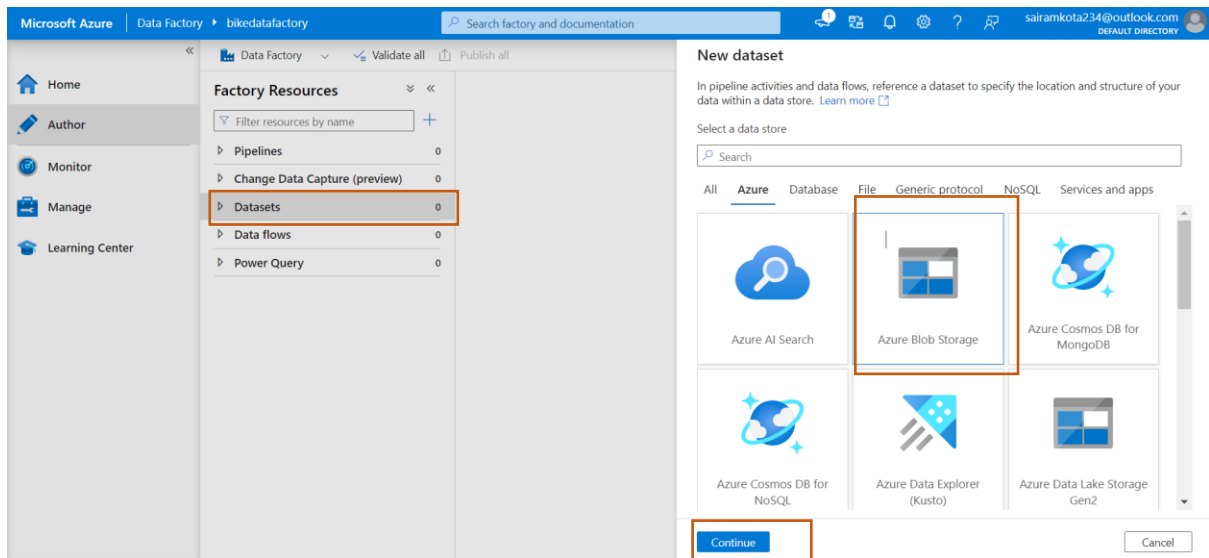
1. Home tab
2. Author tab
3. Monitor tab
4. Management Hub tab



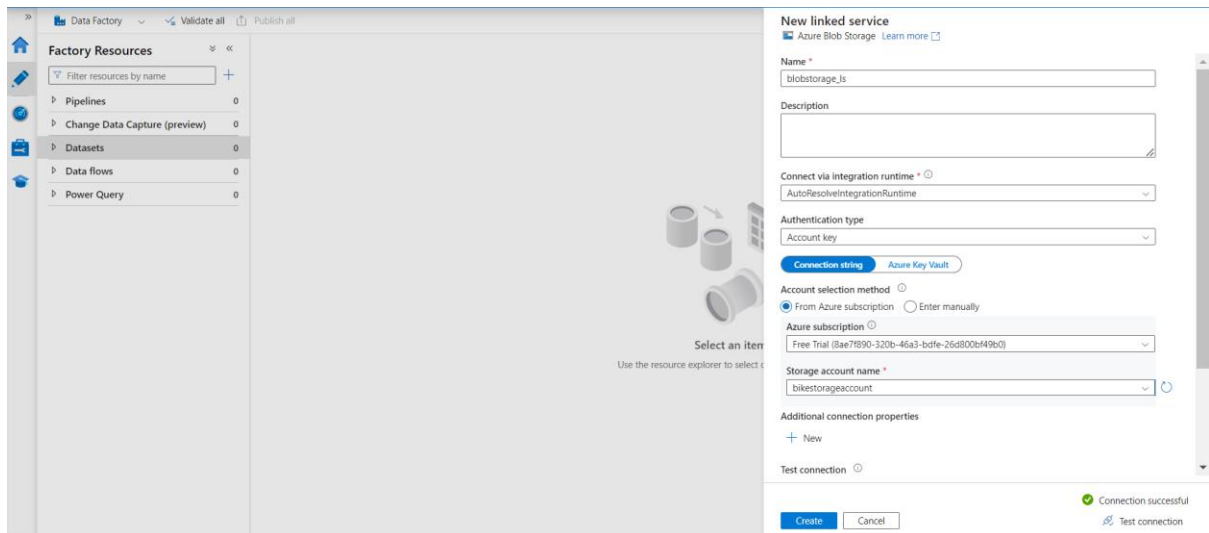
Click on Author Tab and will see the factory resources.



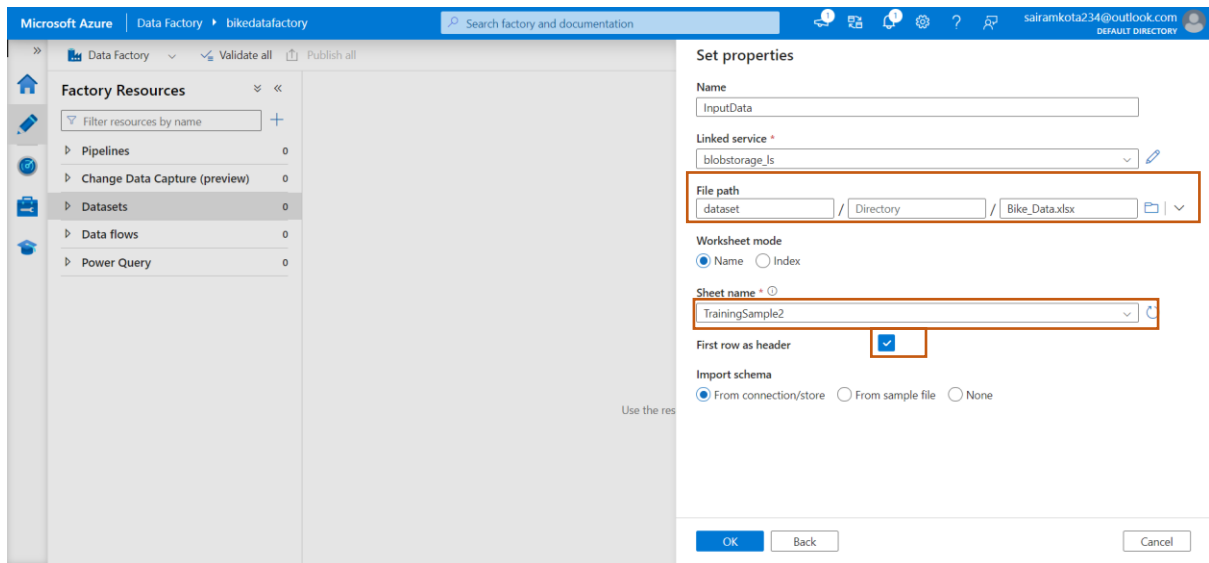
- Click on Datasets
- Select New Data set.
- Choose Azure
- Select Azure Blob storage because our blob available here only and click on continue.
- Choose type of file here (here file is Excel) and click on continue
- Select on the link service and click new
- Need to give link service connection (It is a connection b/w blob and ADF)



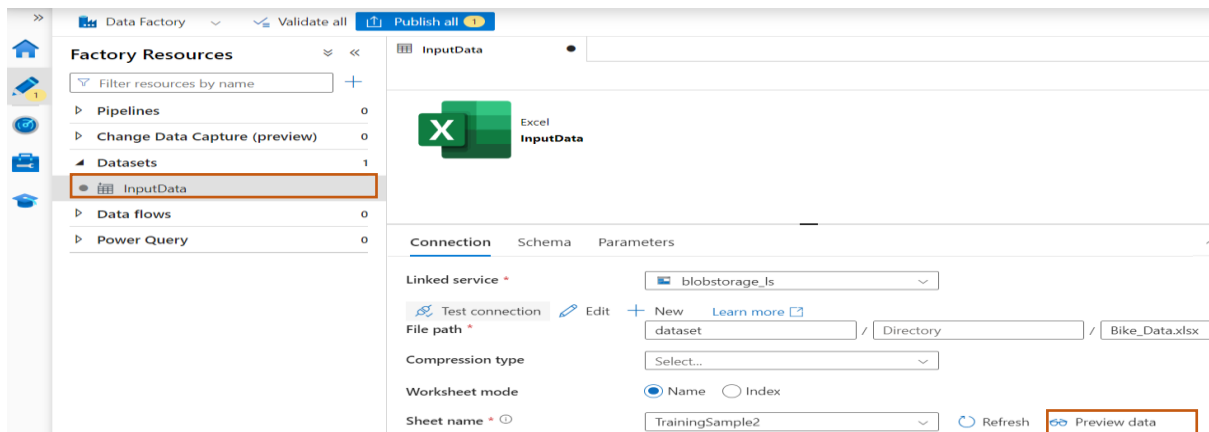
- After clicking on new it opens the new linked service need to fill the required details.
- Select Azure Subscription
- Select storage account name
- Before creating check the test connection once successful click on create.



- After this need to give set properties
- Select the location and correct data
- It comes as File path
- Select sheet name
- Select First row as header and click on ok



- Finally we are seeing data in Input Data in Datasets before publish once see the preview data



- Seeing preview here
- Here there is no save we need to publish

Preview data

Linked service: blobstorage_ls
Object: Bike_Data.xlsx

	Region	Country	Customer	Business Segment	Category	Model	Color	SalesDate	ListPrice
1	North America	United States	Advanced Bike Components	Components	Road Frames	LL Road Frame	Red	2020-04-01	337.22
2	North America	United States	Central Discount Store	Bikes	Mountain Bikes	Mountain-100	Silver	2020-04-01	3399.99
3	North America	United States	Leading Sales & Repair	Clothing	Jerseys	Long-Sleeve Logo Jersey	Multi	2020-04-01	49.99
4	North America	United States	Paint Supply	Components	Mountain Frames	HL Mountain Frame	Black	2020-04-01	1349.6
5	North America	United States	Scooters and Bikes Store	Bikes	Road Bikes	Road-450	Red	2020-04-01	1457.99

Publish all

You are about to publish all pending changes.

Pending changes (1)

NAME	CHANGE	EXISTING
InputData	(New)	-

InputData

Excel InputData

Connection Schema Parameters

Linked service: blobstorage_ls

File path: dataset

Compression type: Select...

Worksheet mode: ☒ Name ☐ Index

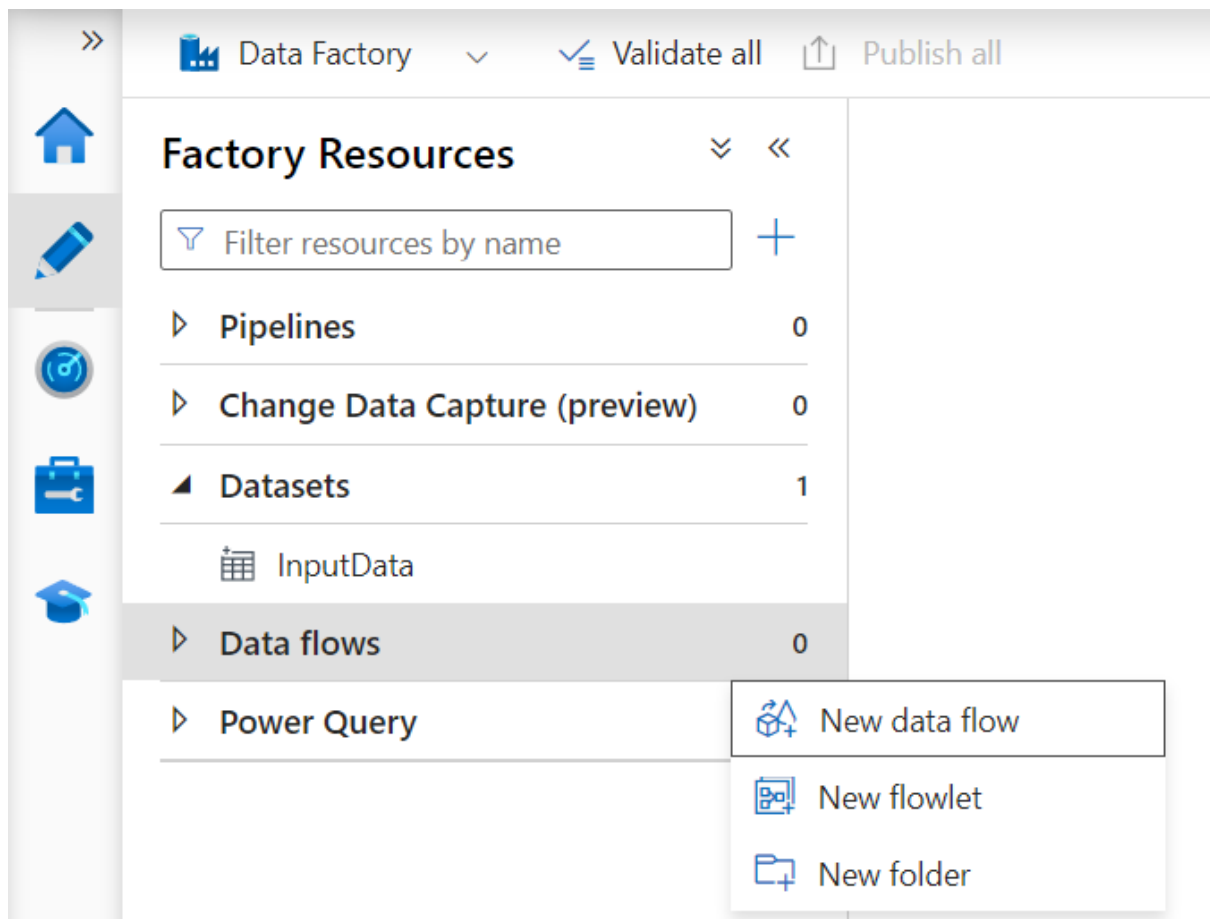
Sheet name: TrainingSample2

Range: e.g. A3:H5

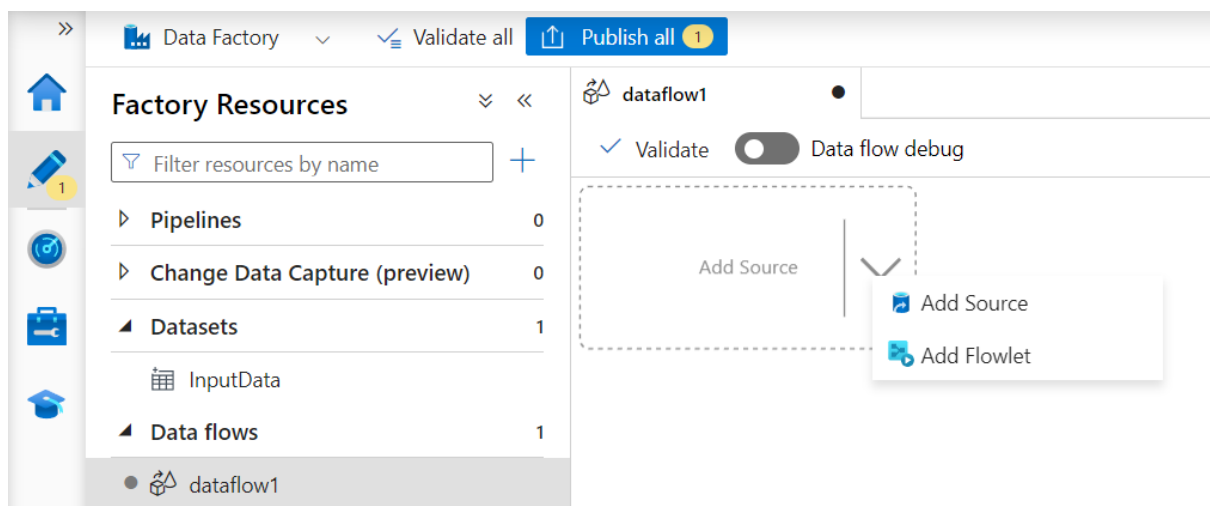
Publish Cancel

Once published go to the transformations (Data Flows)

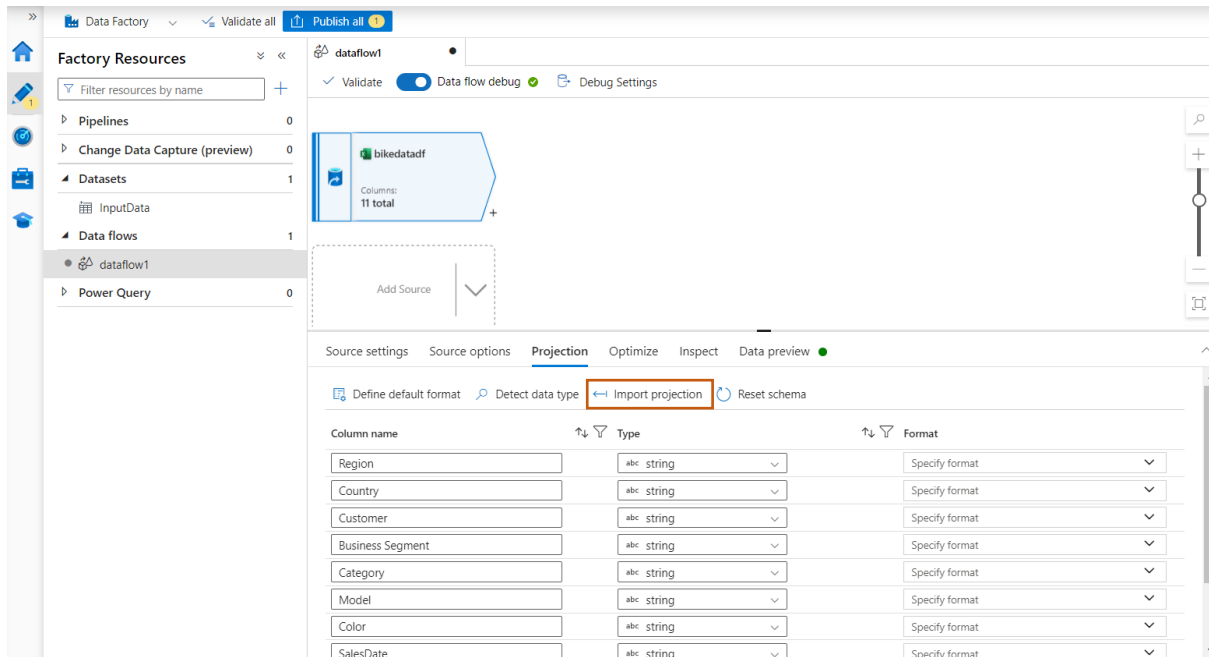
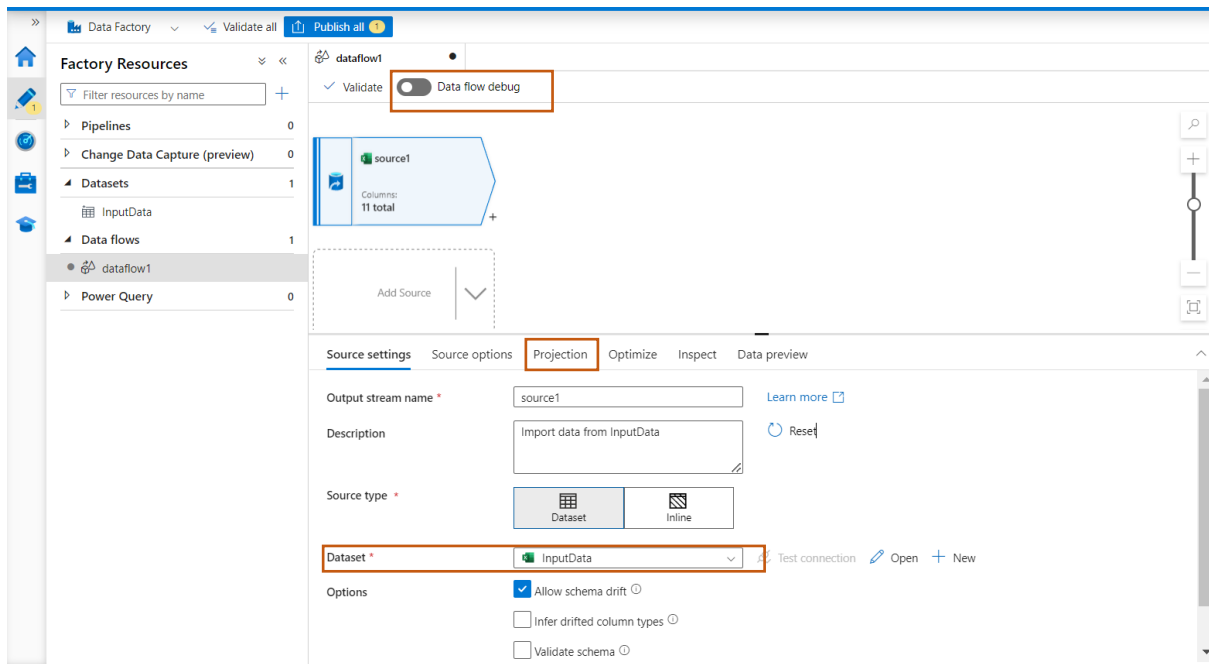
- Click on New data flow



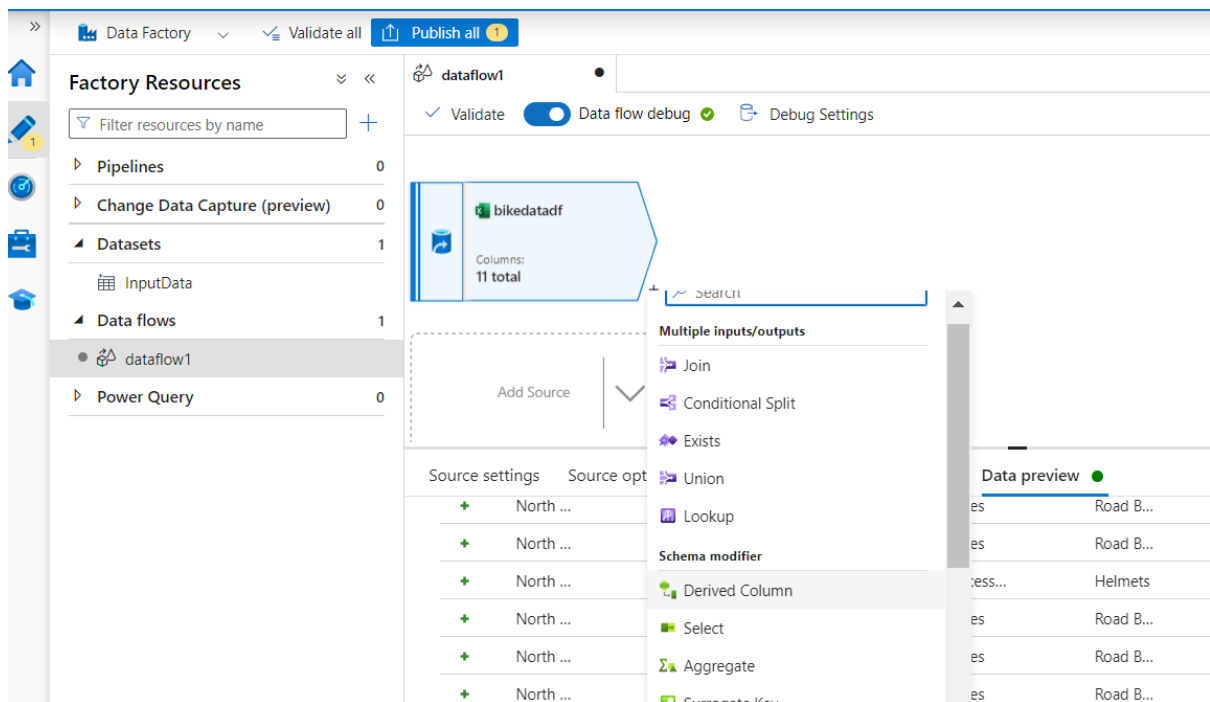
- Click on Add Source



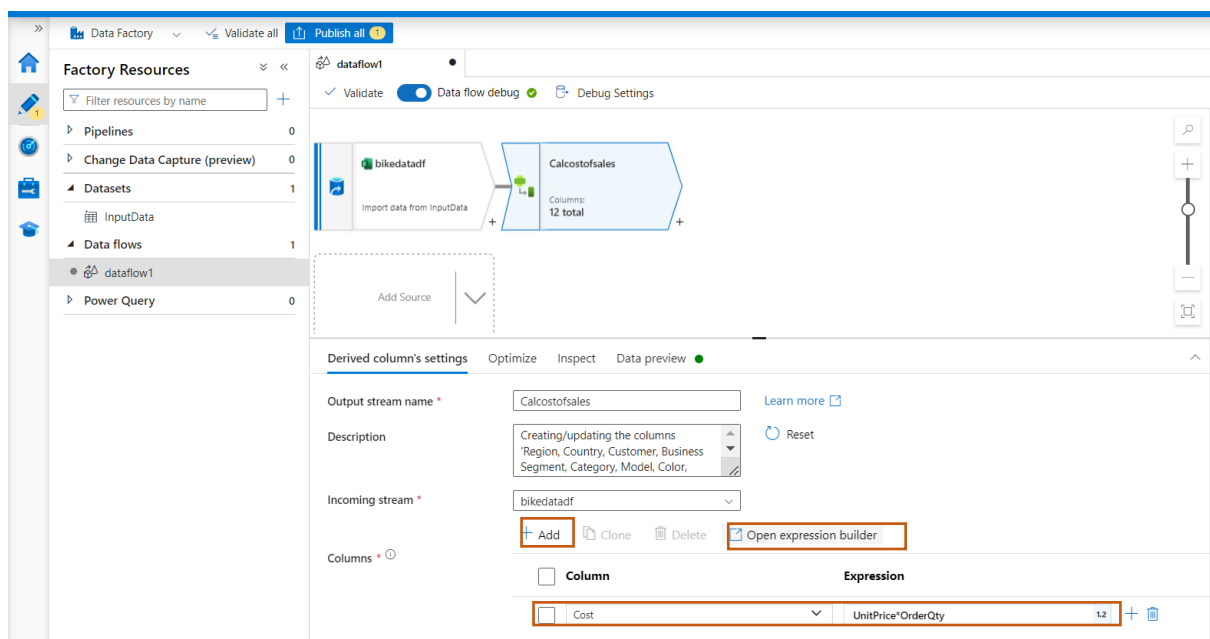
- Select the Data set
- Click on Data flow debug and select 1 hour to check the data preview once data is Data flow debug enabled check the preview once.
- Click on projection and click on Import projection

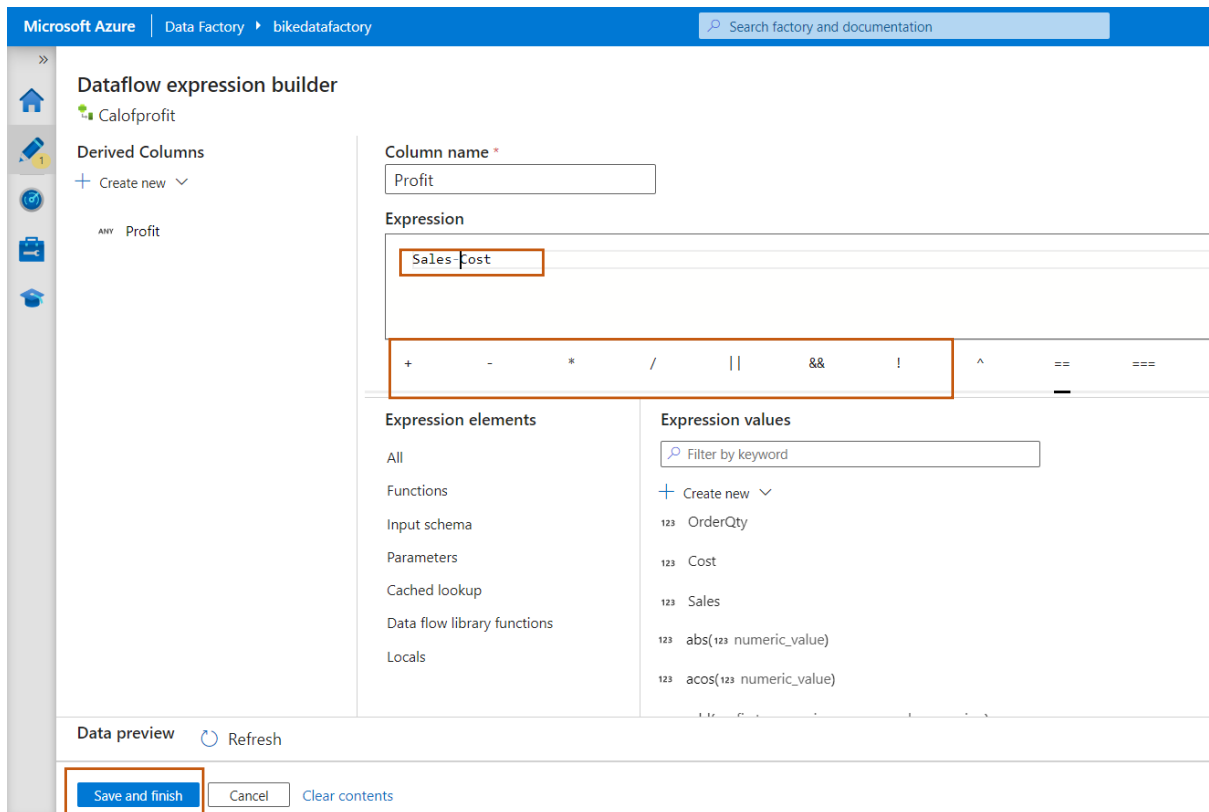


- We need to calculate cost, sales, and profit
- By click on derived column we can multiply the columns

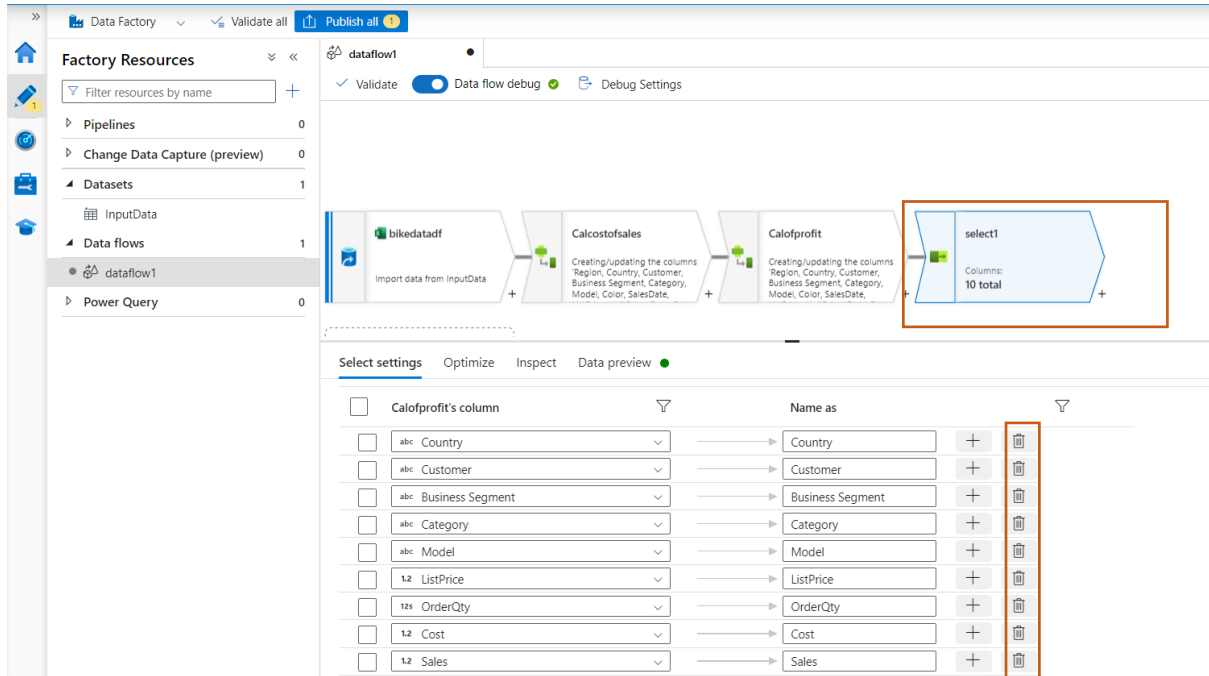


- After adding derived column open expression builder add expression
- Need multiple columns click on Add condition we can add one more column
- We can check how the data populating using data preview
 - Cost
 - Sales
- Based on the above two derived columns we can't create new column called profit so that we add one more derived column add profit and we can see the preview.

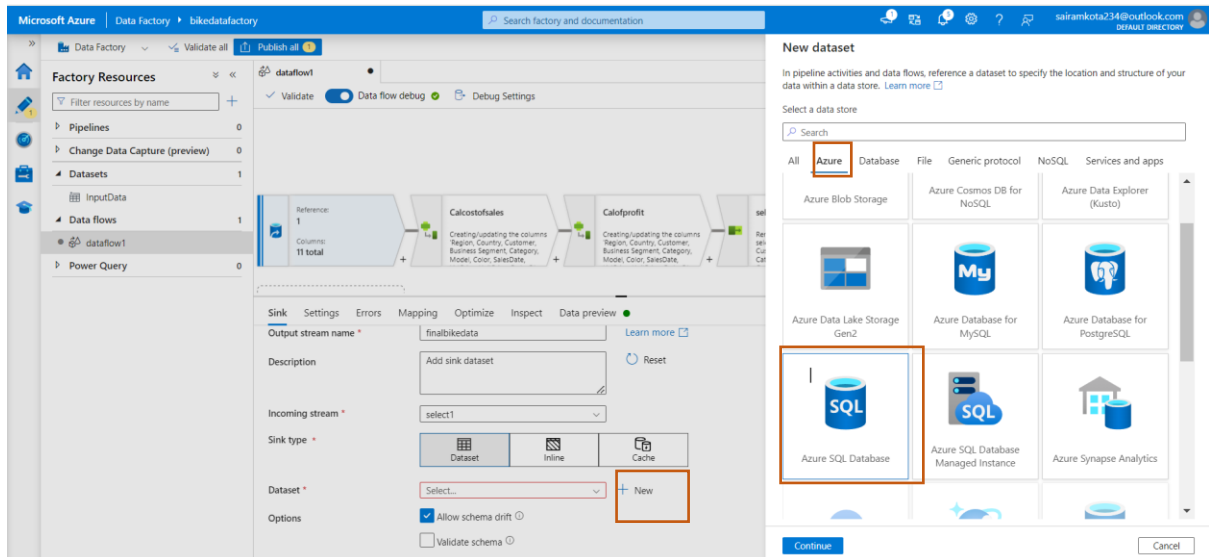




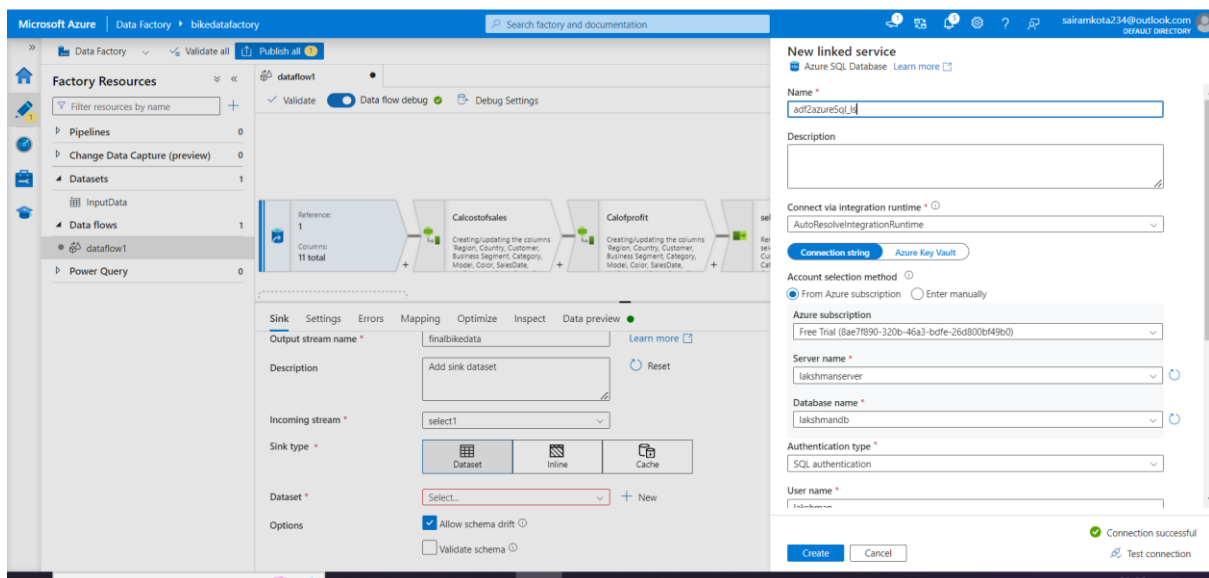
- After this we need to select only the select columns click on the + symbol click only select
- Delete the unwanted columns



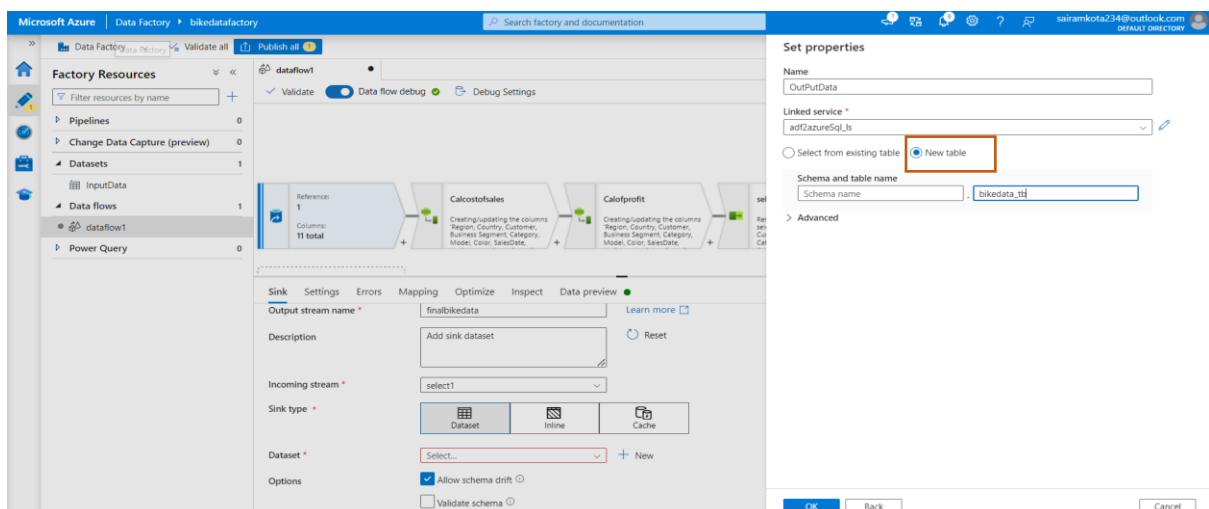
After all this click on + symbol click on Sink we are creating temporary data set to Sql data base.



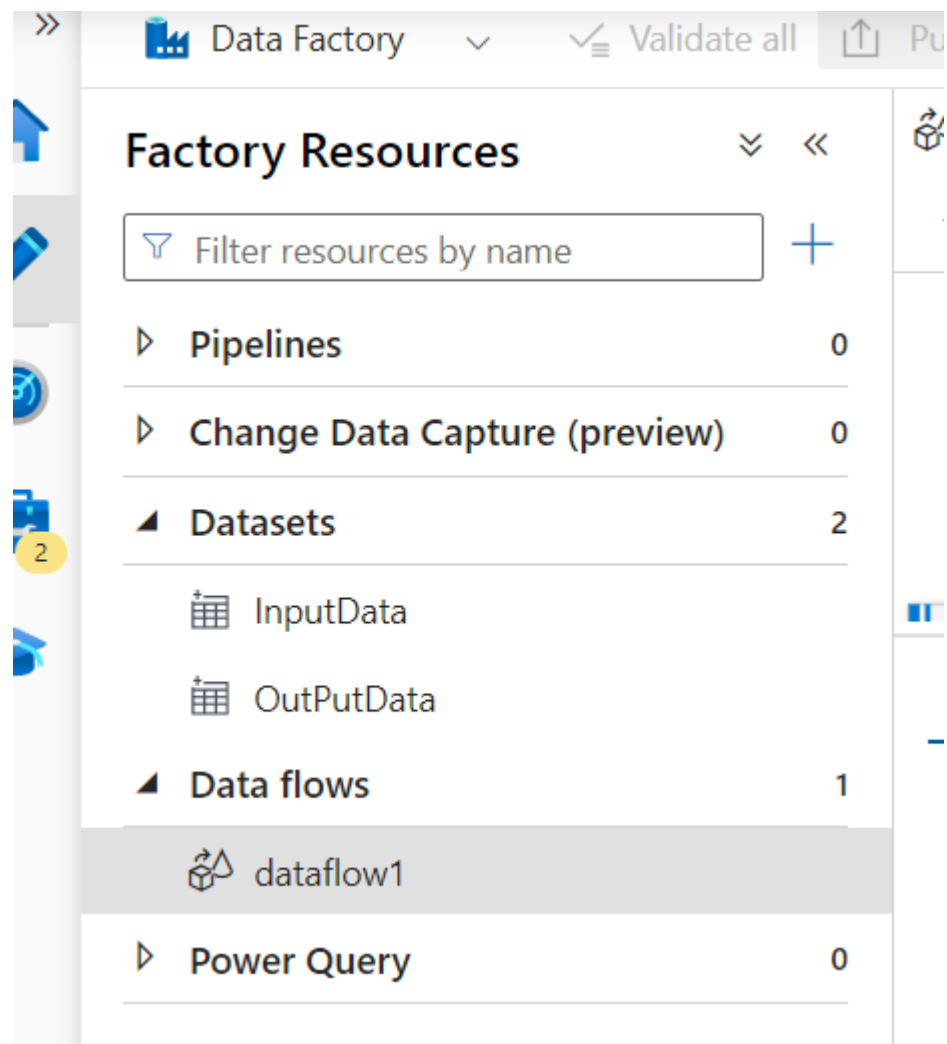
- After this will get a new linked service click on new
- Fill all the details and test the connection and click on create



- After that click on new table and write table name and click on ok.

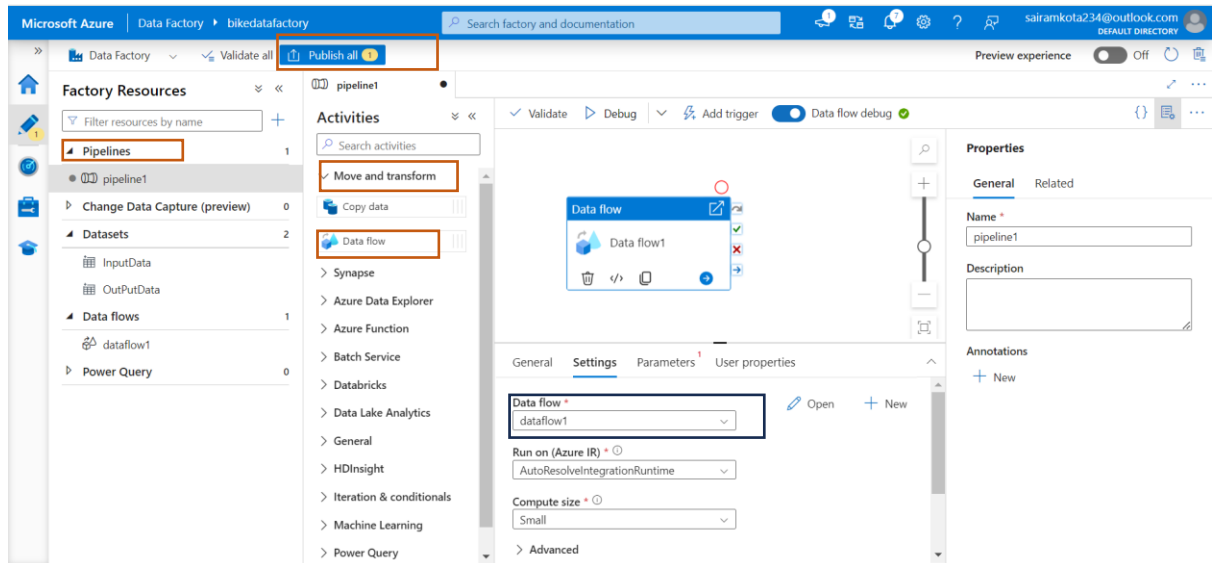


- After that publish the data

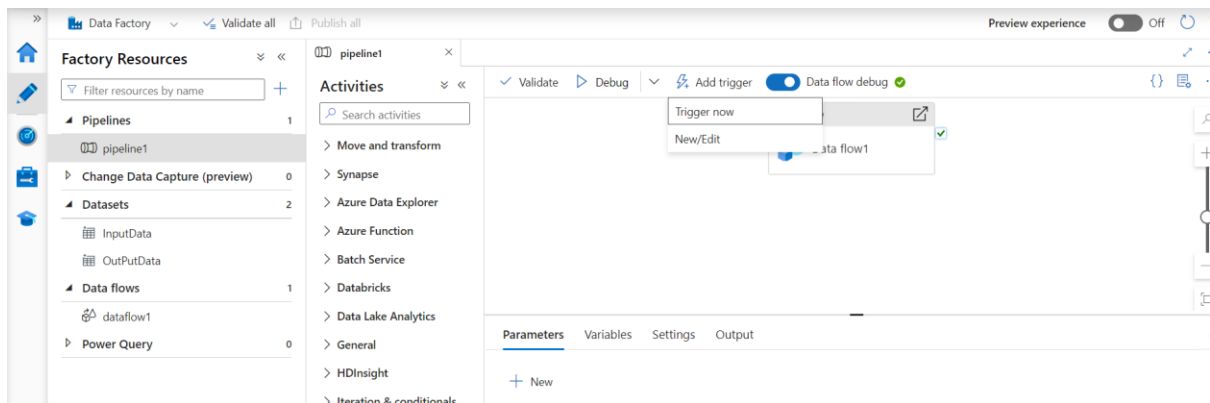


In Data Sets we can see 2 now.

- After that click on pipelines New pipeline
 - Move and Transform
 - Drag and drop Data Flow
- In settings select the dataflow
- After that publish



- After Publish click on the Trigger now and click on ok
- It will store in Sql DataBase



Once Pipeline completed successfully, we can see the table Azure Sql Database.

✓ Tables

> dbo.bikedata_tb

> Views

> Stored Procedures

We are seeing the data

Query 1 ✕

 Run ☐ Cancel query  Save query  Export data as  Show only Editor

```
1 select * from [dbo].[bikedata_tb];
```

Results Messages

United States	Central Discount Store	Bikes	Mouni
United States	Leading Sales & Repair	Clothing	Jersey:
United States	Paint Supply	Components	Mouni