

NAME – BHOGADI NAGA ISWARYA LAKSHMI
BATCH – DXC-262-ANALYTICS-B12-AZUR

COMPANY – DXC TECHNOLOGY
SUBMISSION DATE – 17/06/2022

1. Write a python program to predict car sales of a company by using below data,

year : 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Sales in millions: 169 199 262 301 345 398 501 595 610 700 720

display outcome using linear regression method.

```
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression

year = [2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020]
sales_in_millions = [169, 199, 262, 301, 345, 398, 501, 595, 610, 700, 720]
new_sales = np.array(sales_in_millions).reshape(-1,1)

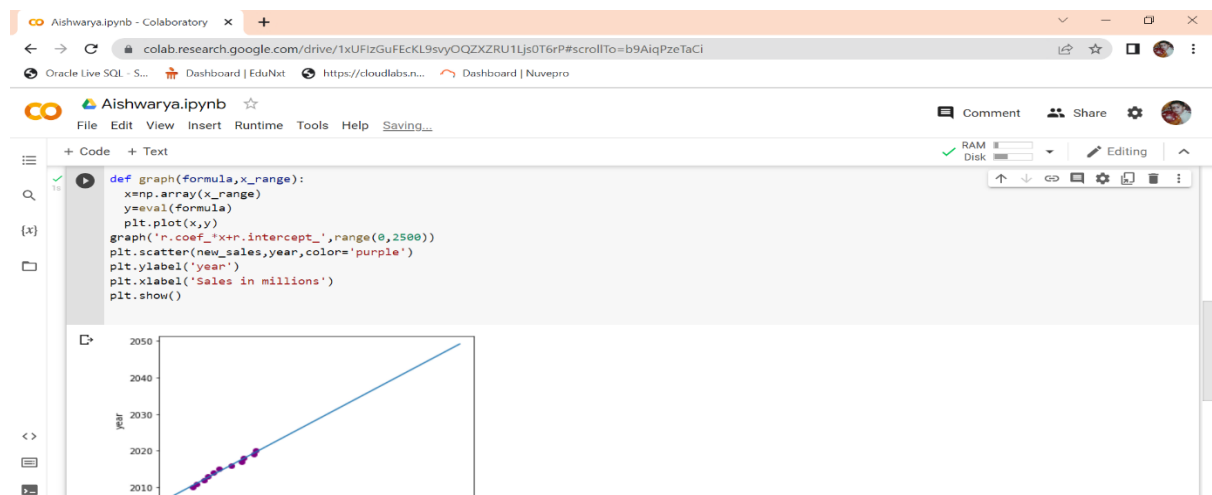
model = LinearRegression()
model.fit(new_sales, year)

print(new_sales)
```

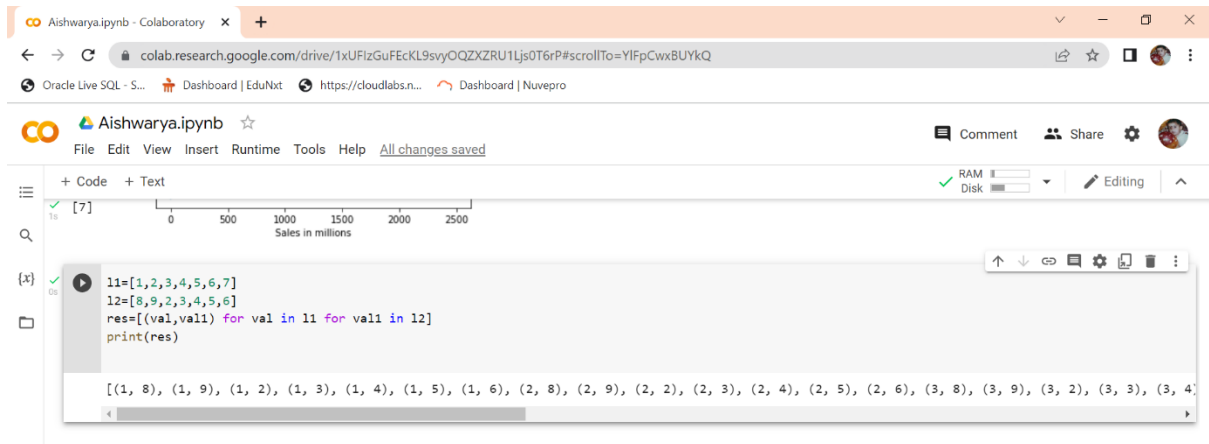
```
[[169]
 [199]
 [262]
 [301]
 [345]
 [398]
 [501]
 [595]
 [610]
 [700]
 [720]]
```

```
r = linear_model.LinearRegression()
r.fit(new_sales, year)
print("coefficient: ", r.coef_)
print("Intercept: ", r.intercept_)
```

```
coefficient: [0.01654049]
Intercept: 2007.782331208535
```



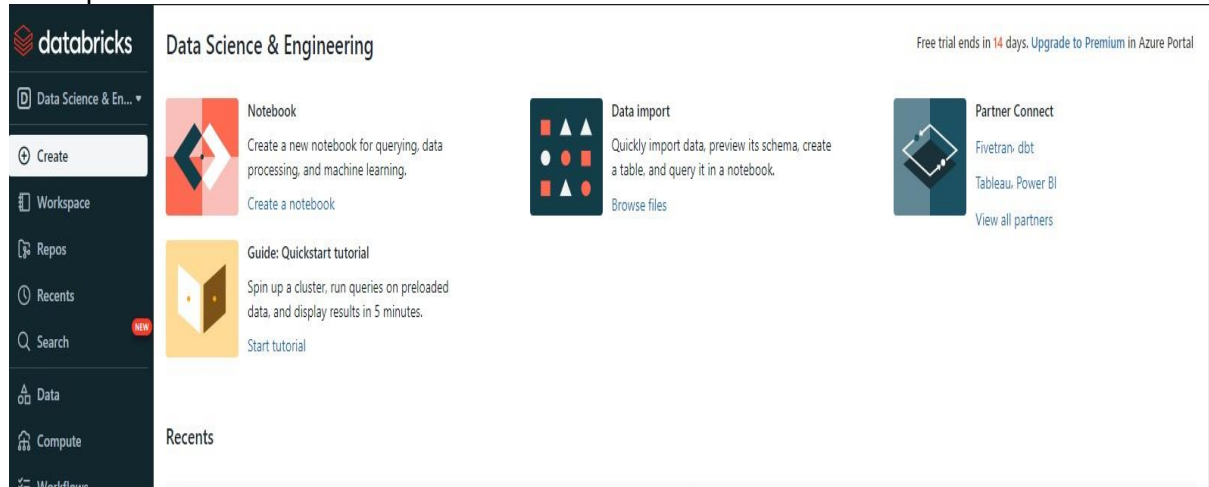
2. Write python program to generate possible tuples from any two sample Lists.



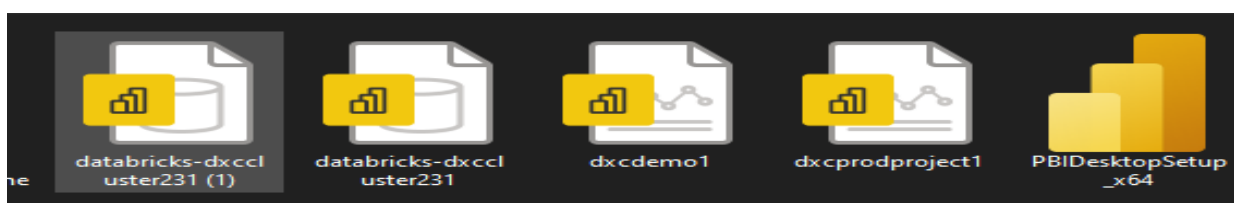
3. Create Azure Databricks & try to connect databricks & powerBI , explain the steps with screenshots.

Login into the azure portal and search for the Data Bricks. Click on “Azure Data Bricks” and it will navigate you to the page. And click on “create” to create Data Bricks. After checking all these reviews and creating and waiting for deployment after deployment click on Go to resource.

After clicking the go to resource button you are navigated to the Data Bricks and launch the workspace.



After that open user settings and generate a token . After that, go to tables and click on partner connect and select the “power BI” and attach the cluster and download the file as shown below.

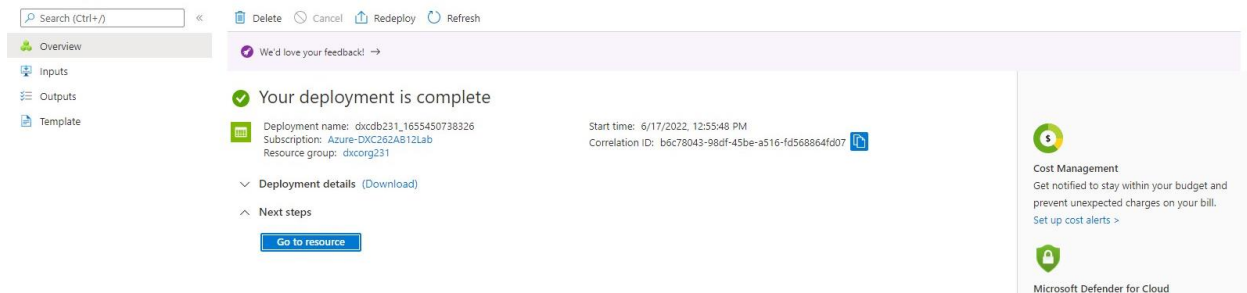


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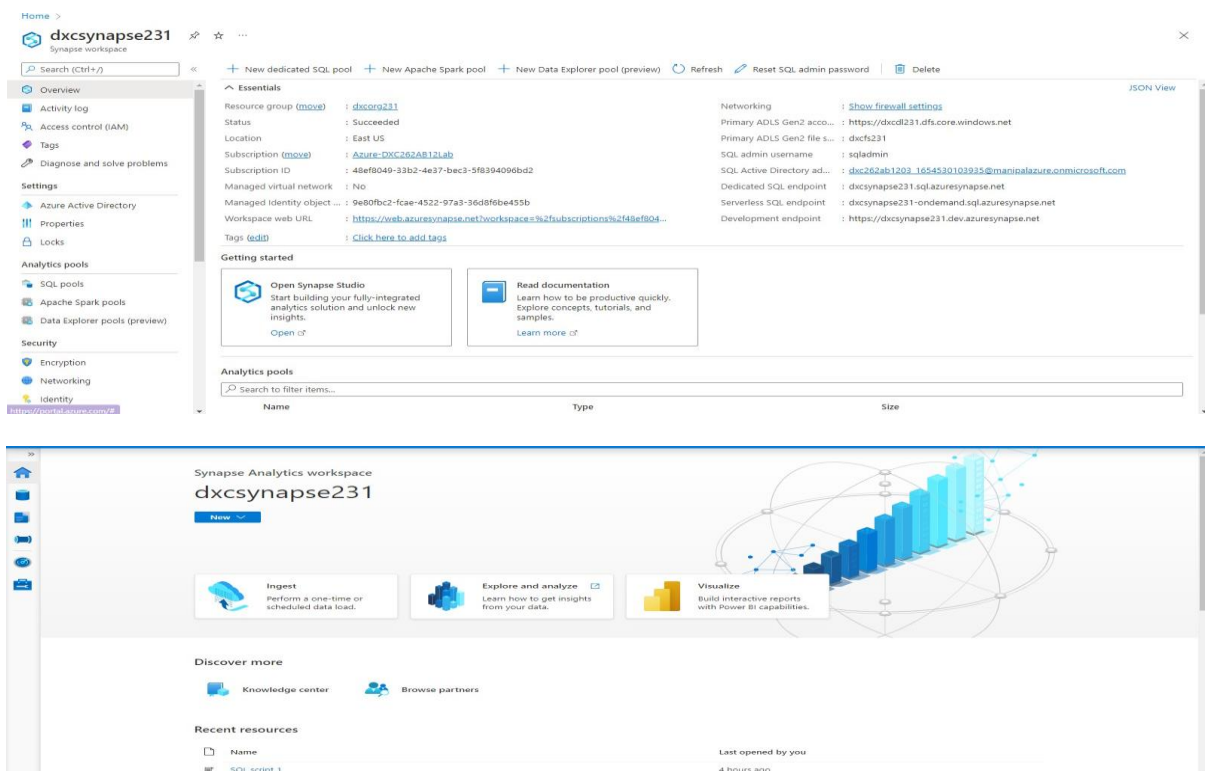
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4. Create Azure Synapse & connect with Azure Blob, explain the steps with screenshots.

Create an “Azure Synapse Account and Wait for the Deployment.



Click on goto resource and navigate to the synapse studio and click on open.

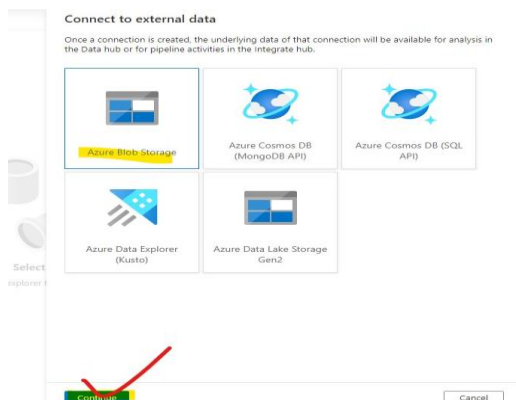
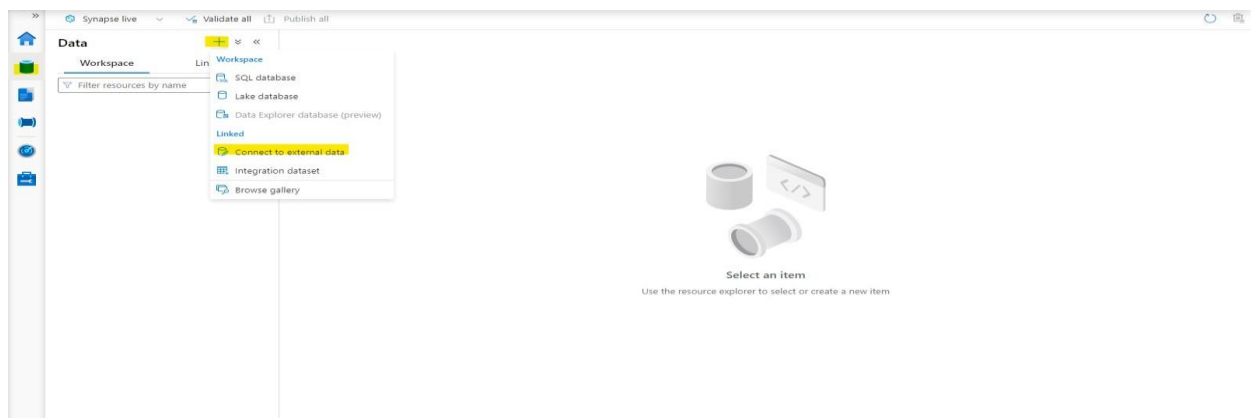


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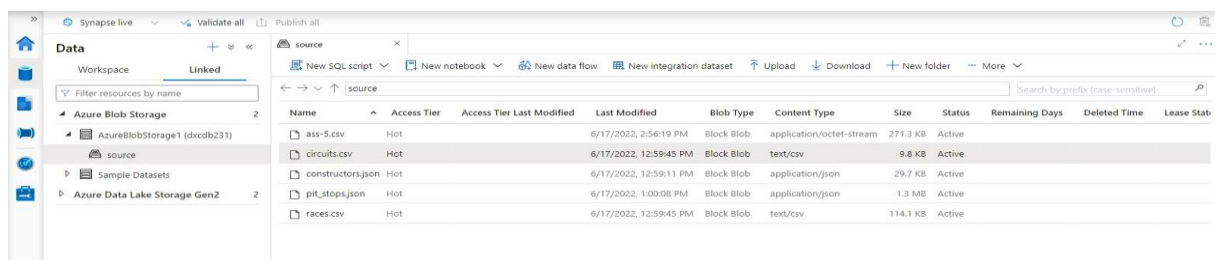
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Click on data after that click on connect external data as shown in the screen.

Click on azure blob storage and click on create.



New linked services page will open give the info required and check connection and later click on create. After that the blob storage is connected successfully.



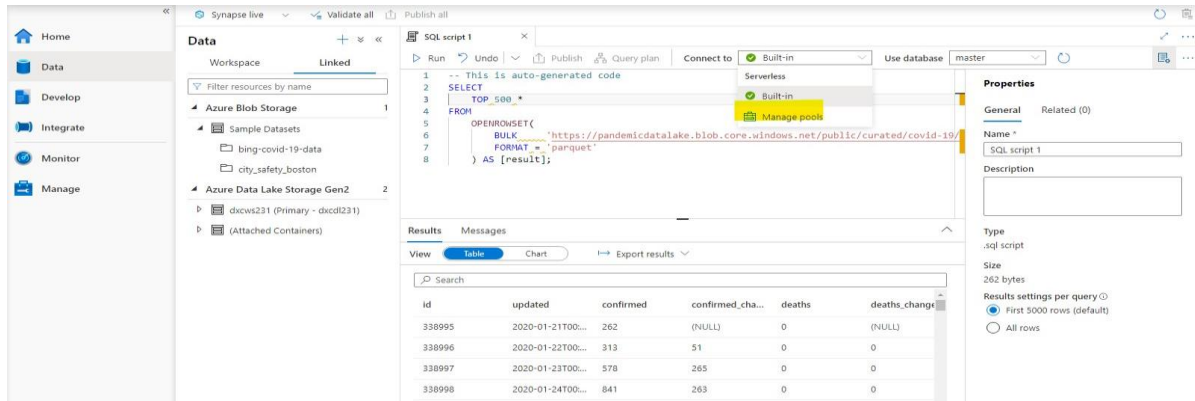
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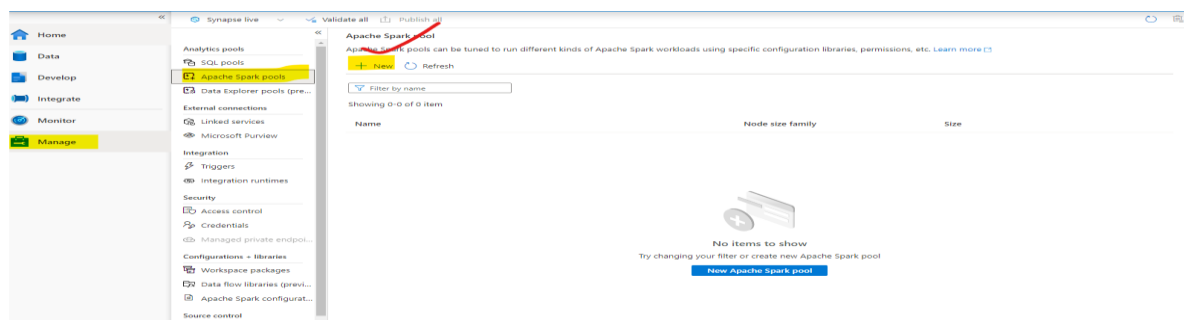
5. Create Azure Synapse spark pool & query sample JSON file, explain the steps with screenshots.

To create a spark pool we have to follow the steps mentioned below.

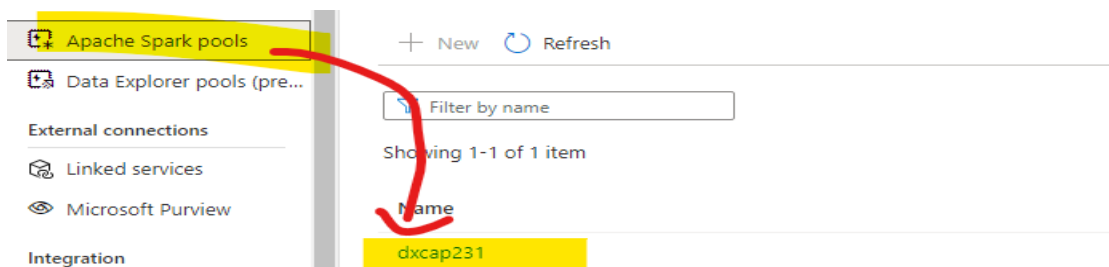
Click on manage pools in Synapse.



After that it navigates to the manage page and selects spark pool there, refer screenshot.



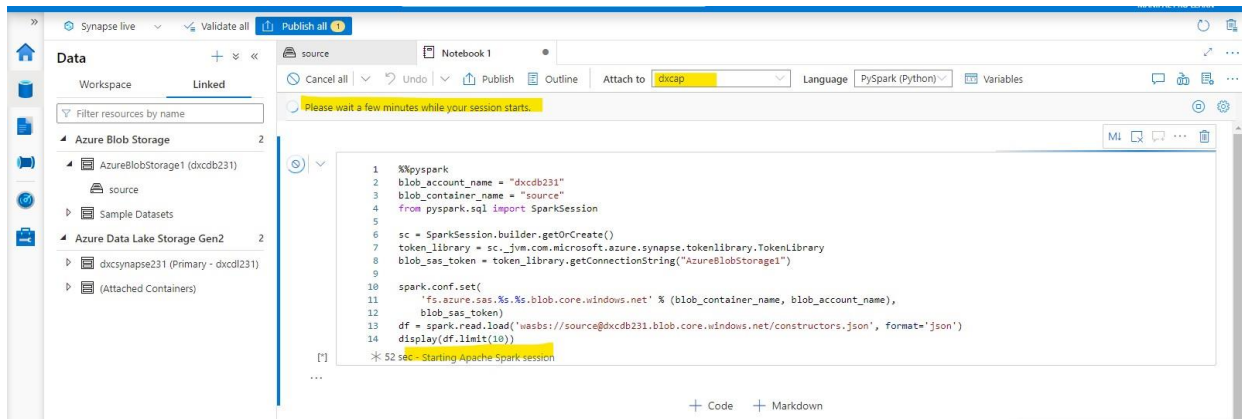
Fill all the requirements and click on review and create.



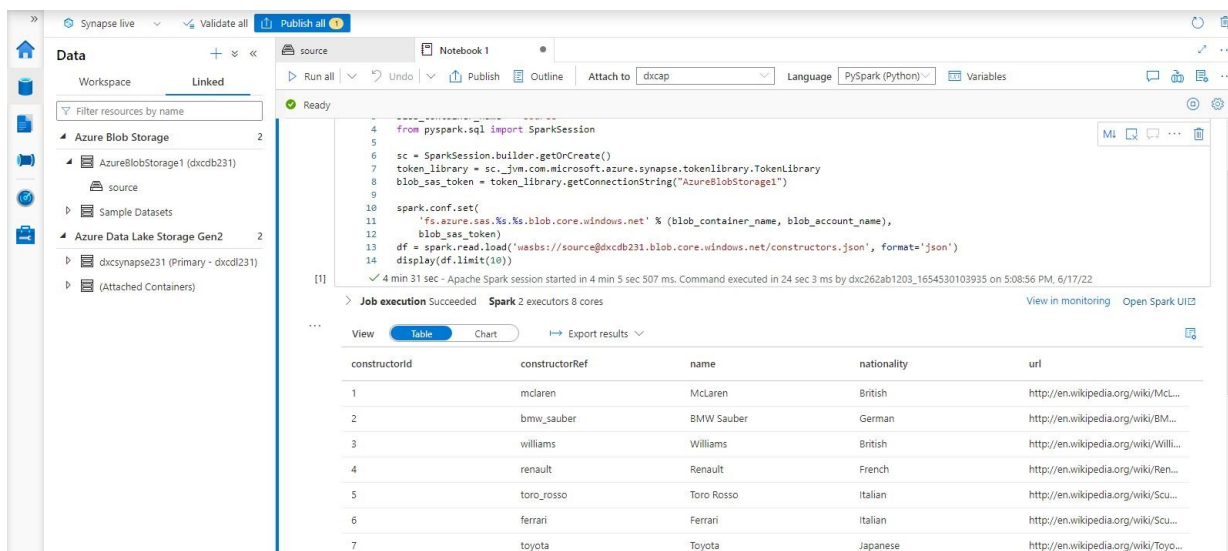
Now querying a sample json file. Attach to the pool and click on run all. It takes some time.

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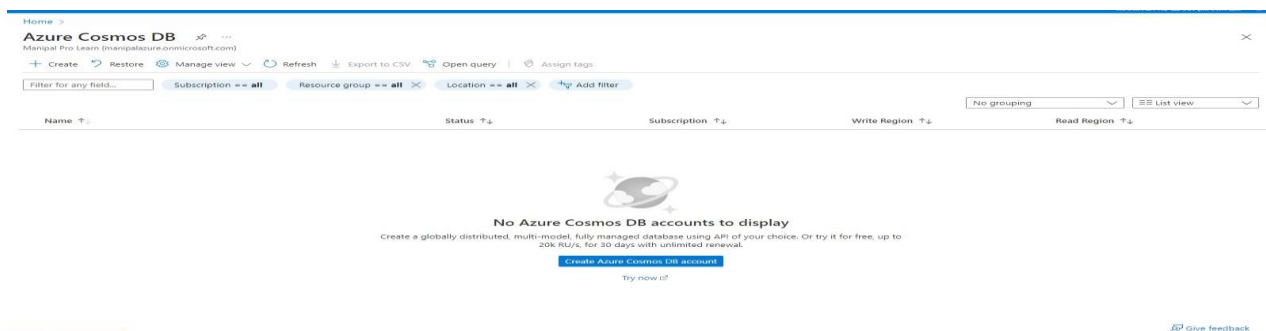


The data will be queried successfully as shown in the screen.



6.Create Azure Cosmos DB & import sample JSON file, explain the steps with screenshots

Go to azure portal and search for “Azure cosmos DB”.



We have to select the API option and we are recommended with core sql

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Home > Azure Cosmos DB >
Select API option

Which API best suits your workload?

Azure Cosmos DB is a fully managed NoSQL database service for building scalable, high performance applications. [Learn more](#)

To start, select the API to create a new account. The API selection cannot be changed after account creation.

Core (SQL) - Recommended
Azure Cosmos DB's core, or native API for working with documents. Supports fast, flexible development with familiar SQL query language and client libraries for .NET, JavaScript, Python, and Java.
[Create](#) [Learn more](#)

Azure Cosmos DB API for MongoDB
Fully managed database service for apps written for MongoDB. Recommended if you have existing MongoDB workloads that you plan to migrate to Azure Cosmos DB.
[Create](#) [Learn more](#)

Cassandra
Fully managed Cassandra database service for apps written for Apache Cassandra. Recommended if you have existing Cassandra workloads that you plan to migrate to Azure Cosmos DB.
[Create](#) [Learn more](#)

Azure Table
Fully managed database service for apps written for Azure Table storage. Recommended if you have existing Azure Table storage workloads that you plan to migrate to Azure Cosmos DB, but do not want to re-write your application to use the SQL API.
[Create](#) [Learn more](#)

Gremlin (Graph)
Fully managed graph database service using the Gremlin query language, based on Apache TinkerPop project. Recommended for new workloads that need to store relationships between data.
[Create](#) [Learn more](#)

We have to fill in the following details. After successful validation click on create. Wait for the deployment to complete.

Home > Microsoft.Azure.CosmosDB-20220617172353 | Overview

Deployment

Search (Ctrl+F)

Overview

Inputs

Outputs

Template

We'd love your feedback! →

*** Deployment is in progress

Deployment name: Microsoft.Azure.CosmosDB-20220617172353
Subscription: Azure-DXC262AB12Lab
Resource group: dxcorg231

Start time: 6/17/2022, 5:24:03 PM
Correlation ID: 42e1ad9c-f540-4314-adf1-6c7e4e80dd4

Deployment details (Download)

Resource	Type	Status	Operation details
dxccosmosdb231	Microsoft.DocumentDb/databaseAccounts	OK	Operation details

After completion of deployment click on go to resource. After going to the cosmos DB and follow the below mentioned steps.

Home > Microsoft.Azure.CosmosDB-20220617172353 > dxccosmosdb231

dxccosmosdb231 | Data Explorer

Search (Ctrl+F)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Quick start

Notifications

Data Explorer

Settings

Features

Default consistency

Backup & Restore

Firewall and virtual networks

Private Endpoint Connections

CORS

Dedicated Gateway

Keys

Waiting for dxcservices.visualstudio.com...

New Container

Enable Azure Synapse Link

New Notebook

Connect to GitHub

NOTEBOOKS

Notebooks is currently not available. We are working on it.

Welcome to Cosmos DB

Globally distributed, multi-model database service for any scale

Launch quick start

Launch a quick start tutorial to get started with sample data.

New Container

Create a new container for storage and throughput.

Connect

Prefer using your own choice of tooling? Find the connection string you need to connect.

Recents

Top 3 things you need to know

Advanced Modeling Patterns
Learn advanced strategies to optimize your database.

Partitioning Best Practices
Learn to apply data model and partitioning strategies.

Learning Resources

Get Started using an SDK
Learn about the Azure Cosmos DB SDK.

Master Complex Queries
Learn how to author complex queries.

Migrate Your Data

Create the container

New Container

Container id

source

Partition key

For small workloads, the item ID is a suitable choice for the partition key.

/example

Unique keys

Add unique key

Analytical store

On Off

Azure Synapse Link is required for creating an analytical store container. Enable Synapse Link for this Cosmos DB account. [Learn more](#)

Enable

Advanced

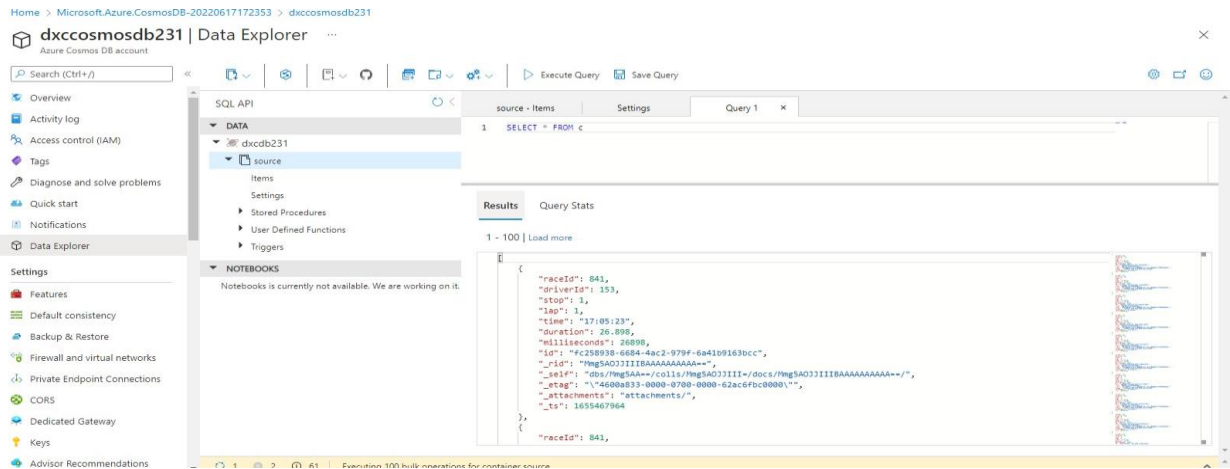
My partition key is larger than 101 bytes

OK

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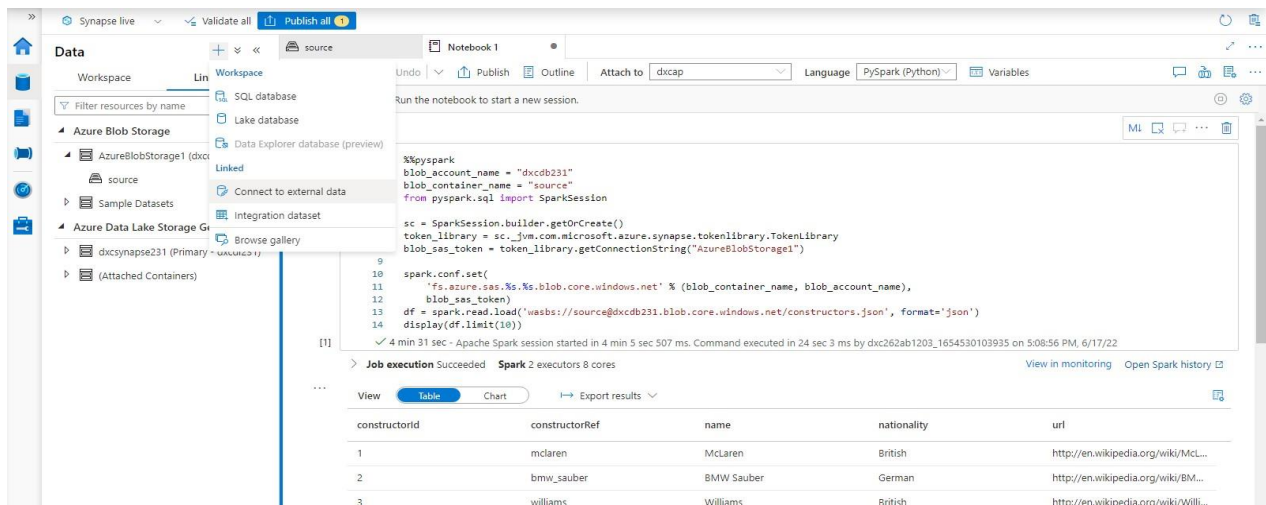
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Upload the data as shown below screen and After clicking on execute query then the data will be queried.



7. Connect COSMOS DB & Azure Synapse analytics & explain the steps with screenshots

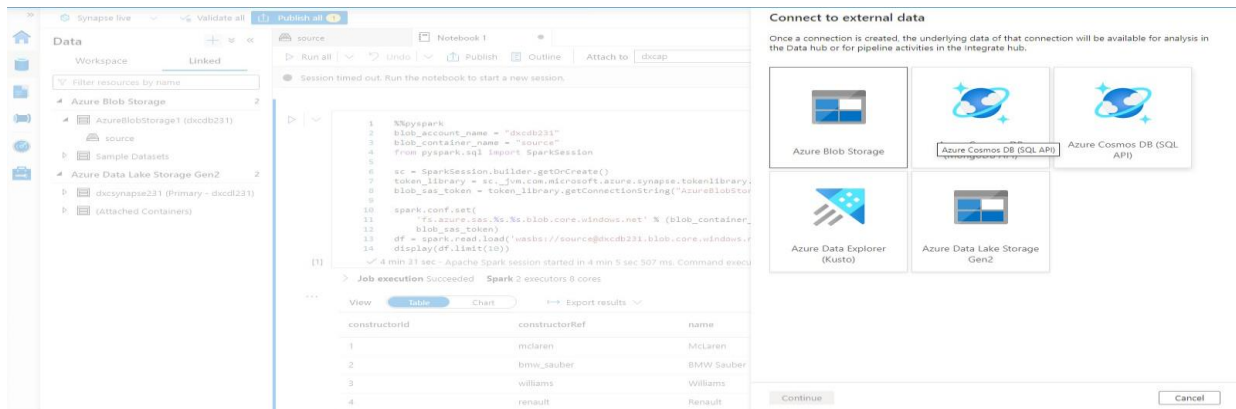
Open azure synapse and click on data and click on + icon and select connect external data.



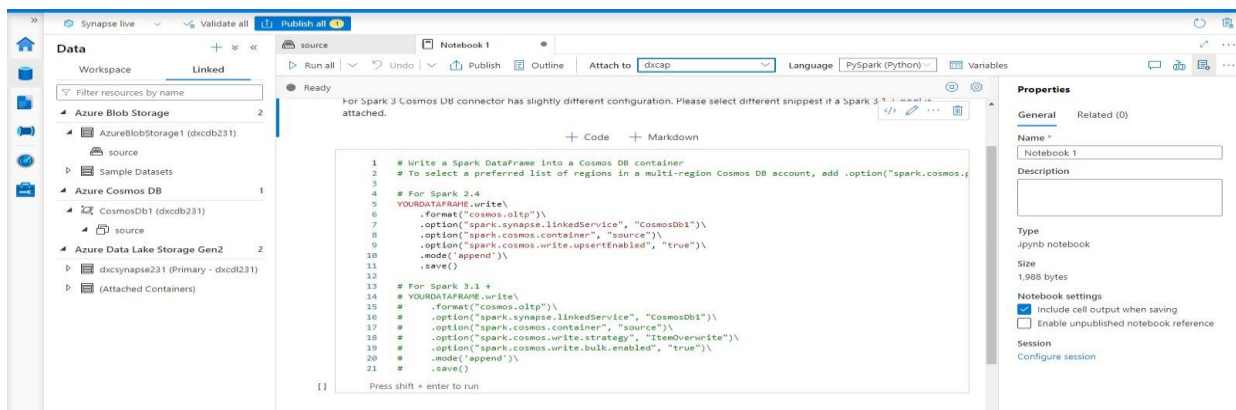
Then select the cosmos DB SQL API.

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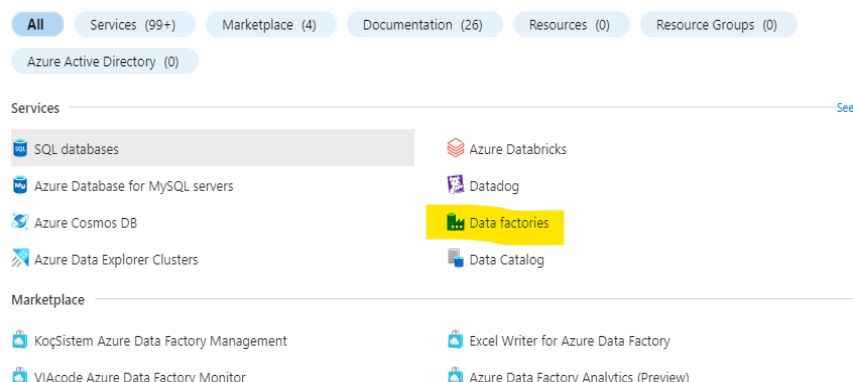


We have to fill the required information. After that cosmos DB is successfully connected with synapse.

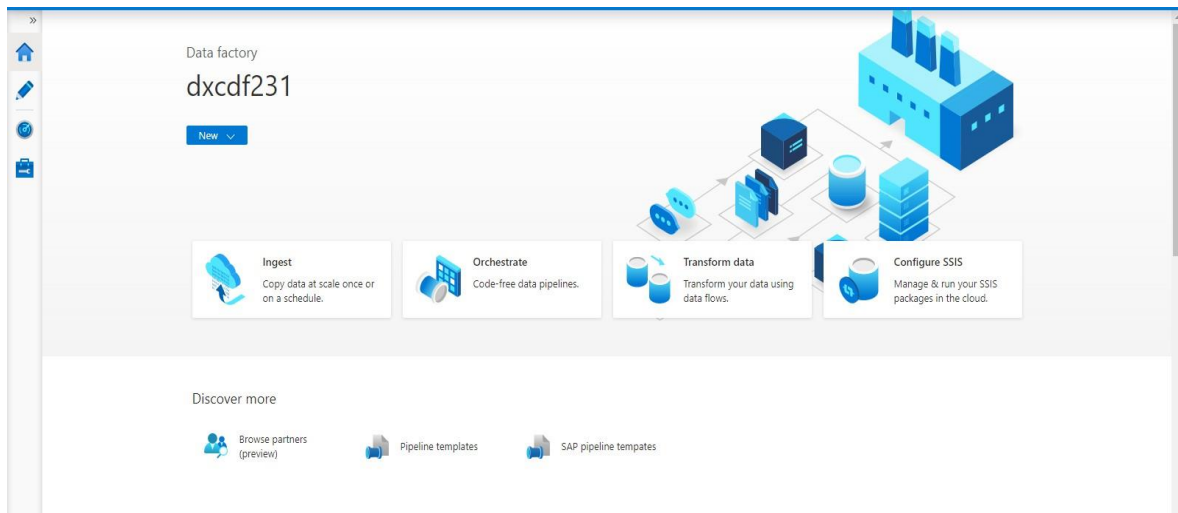


8.Create azure Data factory & azure Blob, connect Blob & ADF,import blob files into Data factory & explain the steps with screenshots

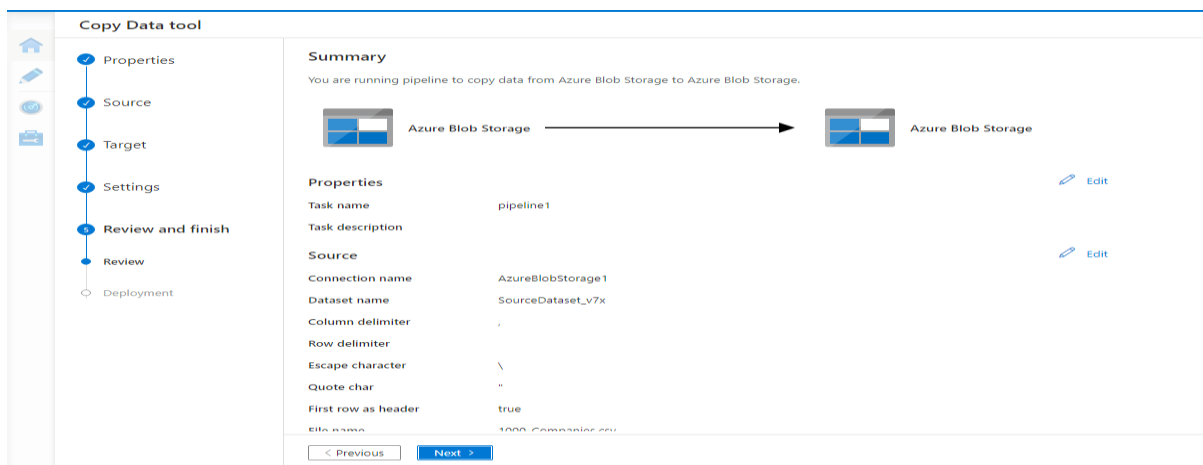
Login to the azure portal and search for azure data factory as shown in figure.



After navigating to the azure data factory page click on create and select the resource group, name, region, version after that click on next . Click on git configurations and checkbox it as configure git later. After clicking on create it takes some time for deployment after deployment, Click on go to resources.



We are moving the data from the source to the destination using the copy data tool and creating a pipeline.



The validation and deployment is done and the pipeline is created successfully. The data is successfully copied from source to destination.

Authentication method: Access key (Switch to Azure AD User Account)

Location: source

Search blobs by prefix (case-sensitive)

☐ Show deleted blobs

[Add filter](#)

Name	Modified	Access tier
<input type="checkbox"/> 1000_Companies.csv	6/10/2022, 5:01:31 PM	Hot (Inferred)