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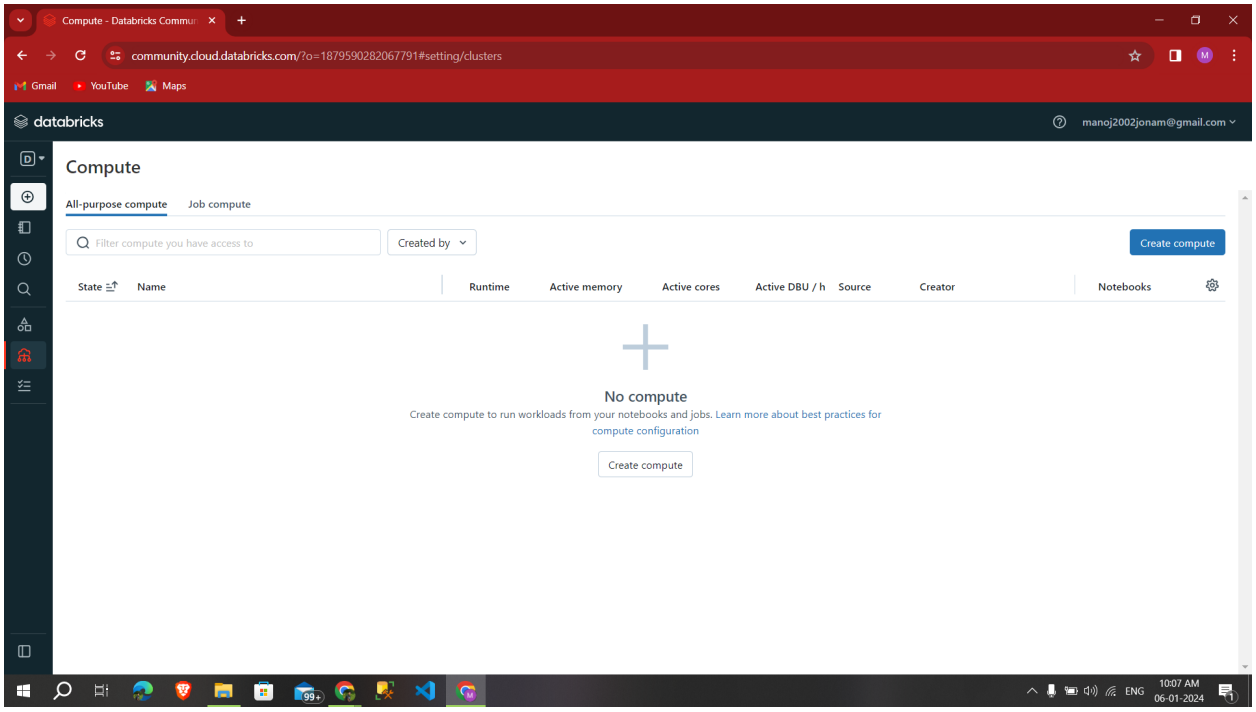
Type	Coding Assessment
Topic	Azure DataBricks

1.Create a cluster &Attach the notebook to the cluster and run all commands in the notebook&creates a DataFrame from a Databricks dataset&Create a Visualizations in Databricks notebooks&Rename, duplicate, or remove a visualization or data profile.

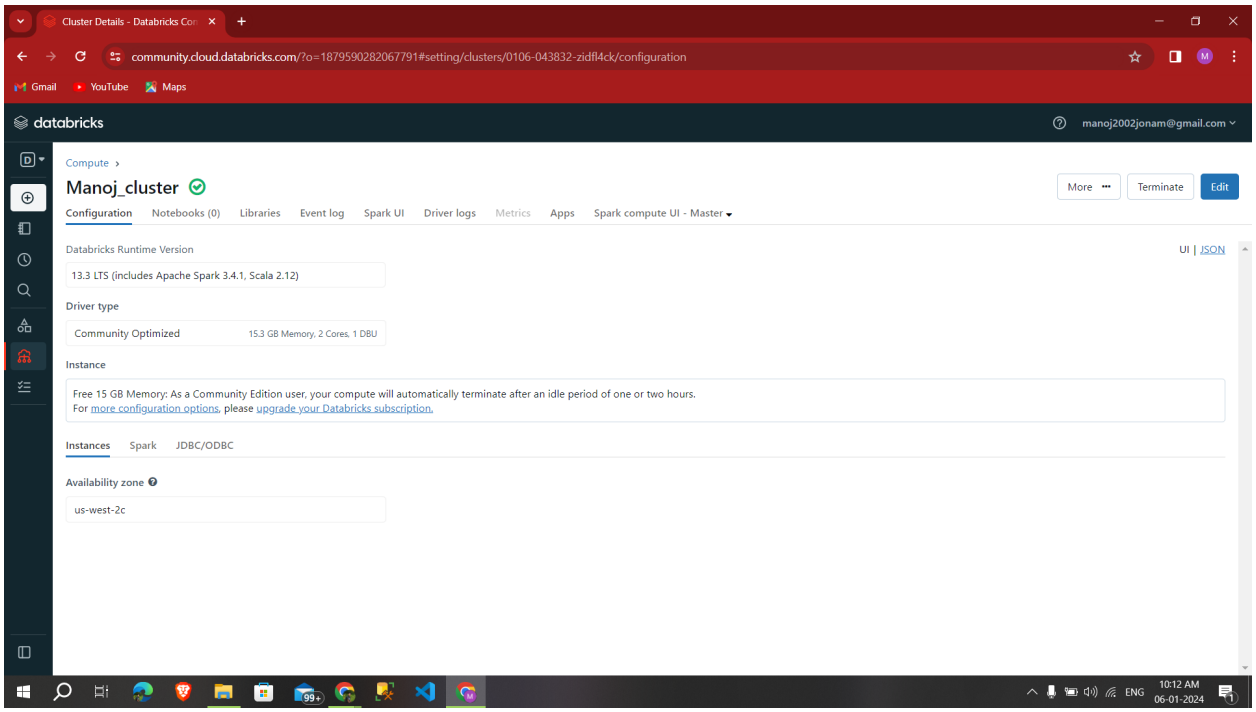
Azure Databricks is an Apache Spark-based analytics platform optimized for Azure. It provides a collaborative environment for big data analytics and machine learning.

Cluster: In Databricks, a **cluster refers to a set of computation resources** that are used to execute the code in your notebooks or jobs.

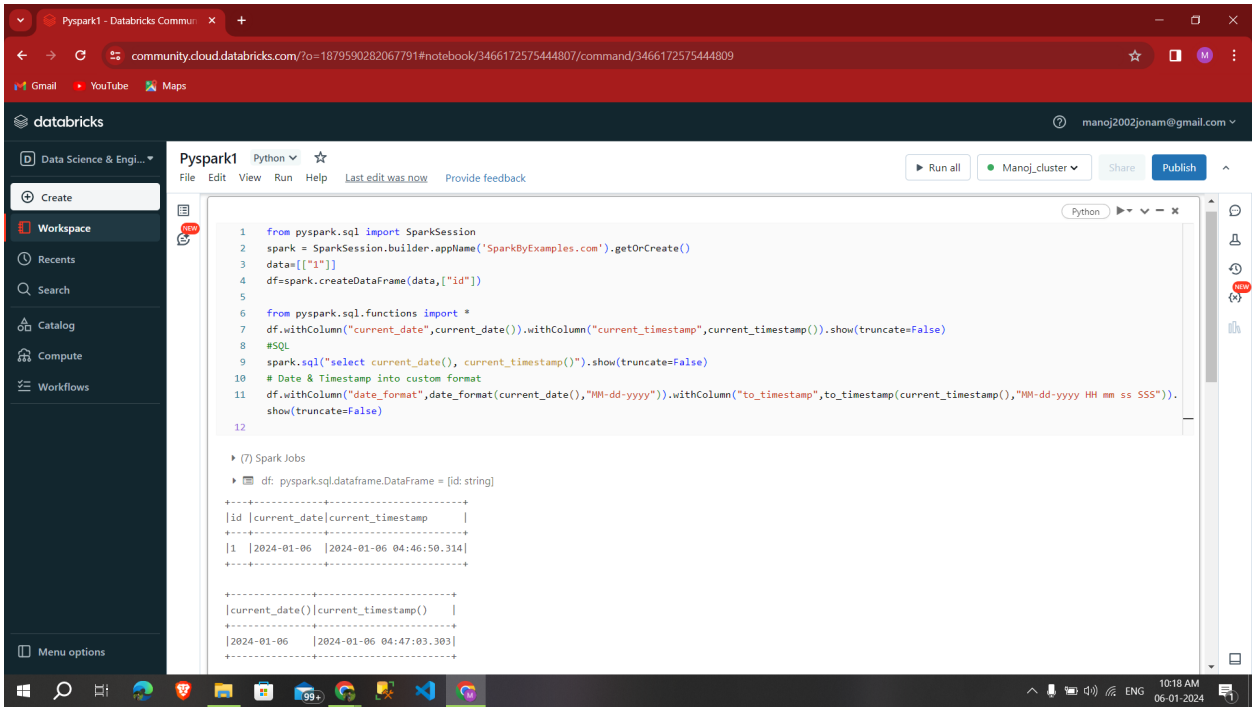
Step 1:I opened a databricks community edition and **by clicking on create compute able to create a cluster**



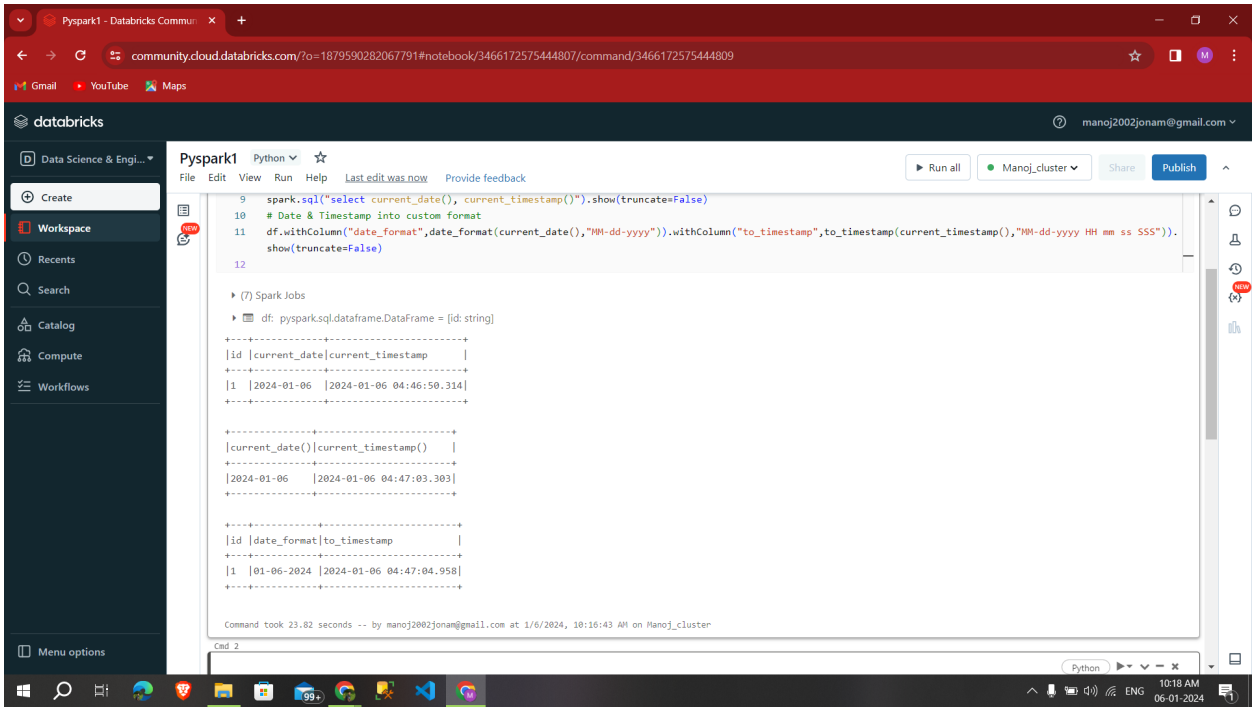
Step2 :I successfully created a cluster named **Manoj_cluster** and created a notebook to run the codes



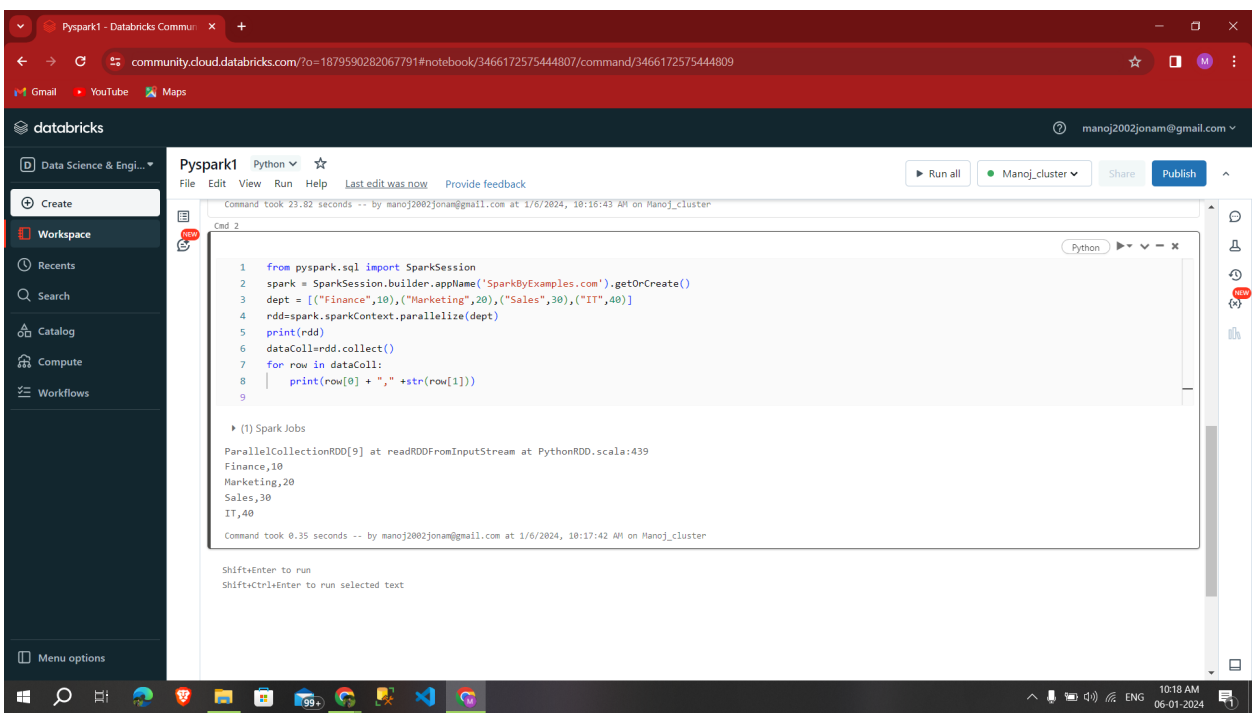
Step 3: Created a notebook named Pyspark1 and run the **current time date pyspark command** and the output is shown below



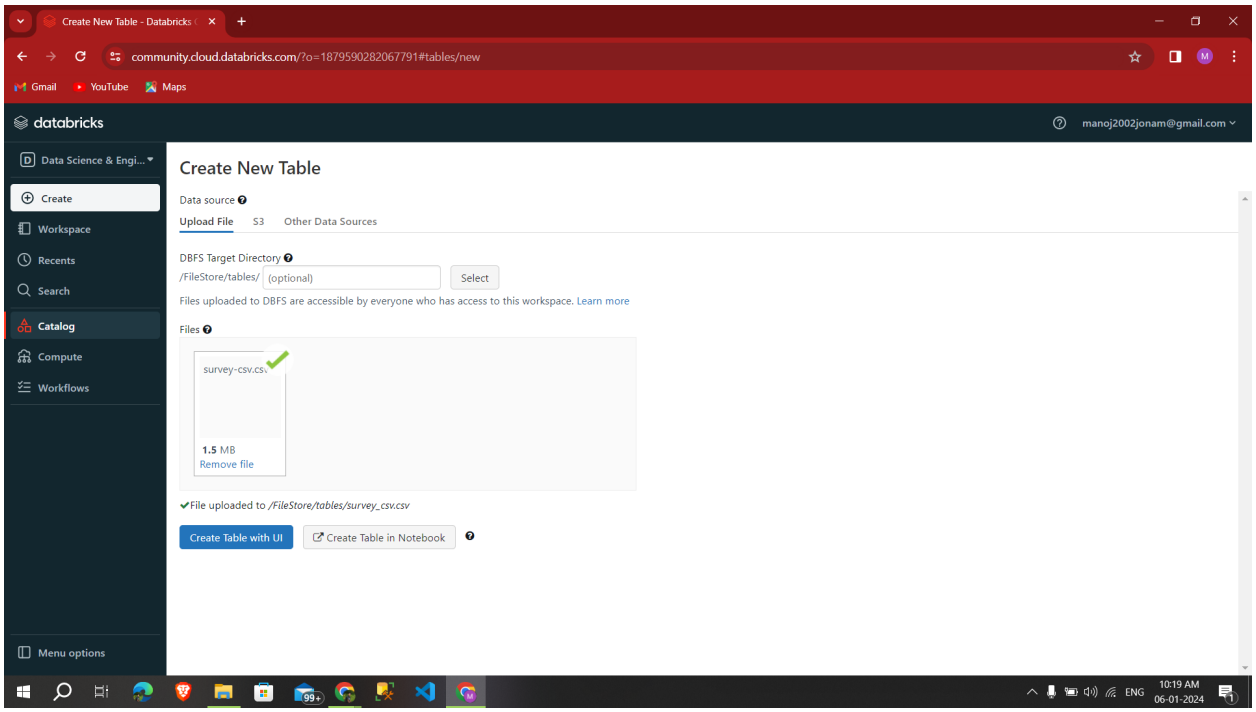
Continuation



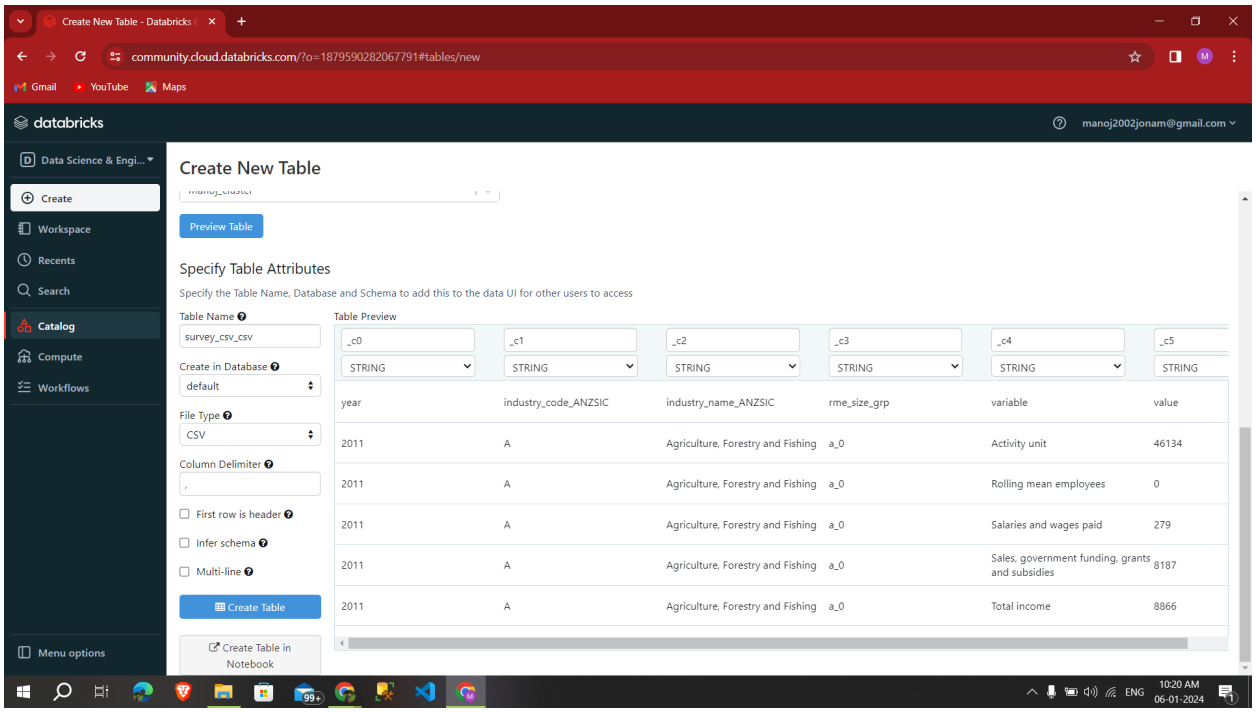
Step 4: Run another command **concept of rdd and parallelize ,**



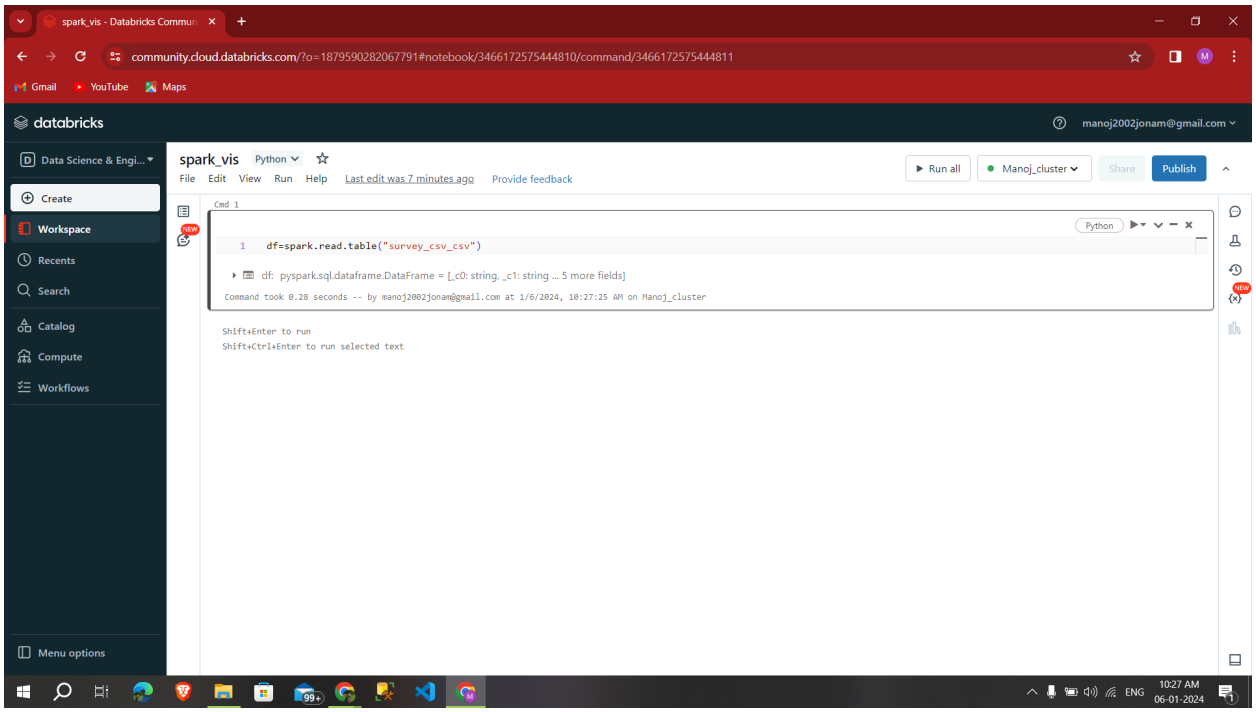
Step 5: Created a table by uploading the csv file **from local to databricks**



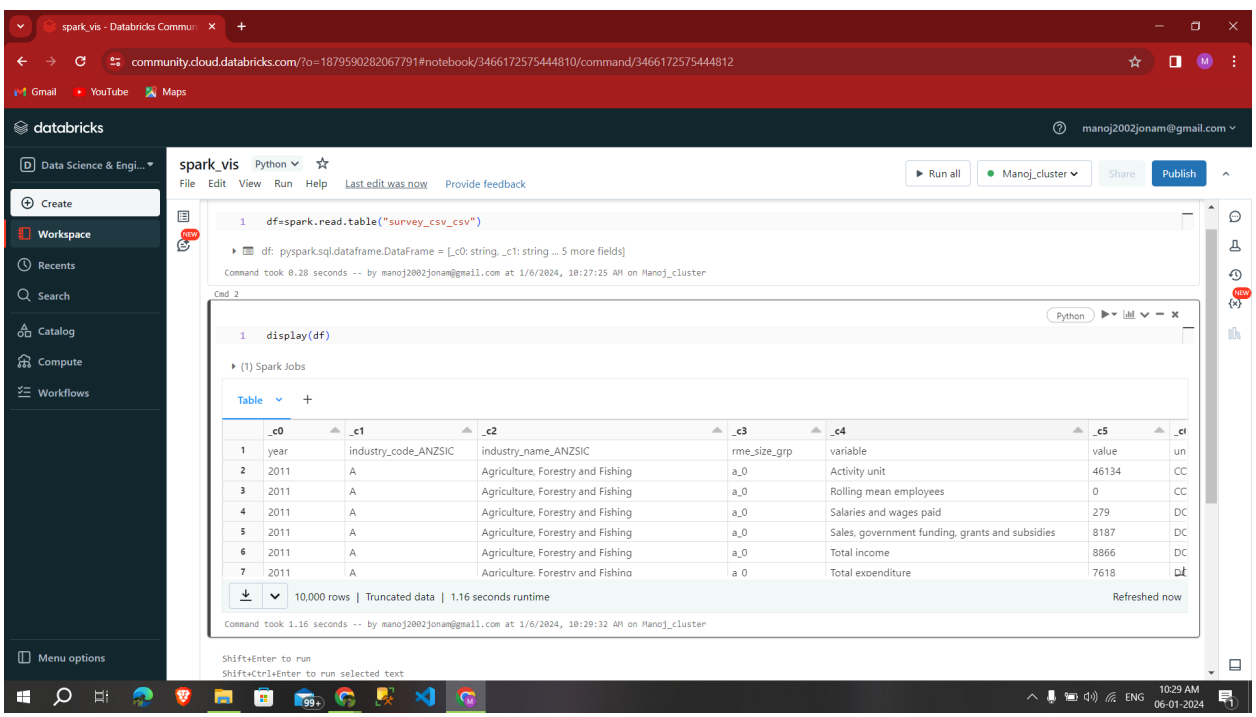
Step 6: By selecting the create table,the table was successfully **added to the default storage**



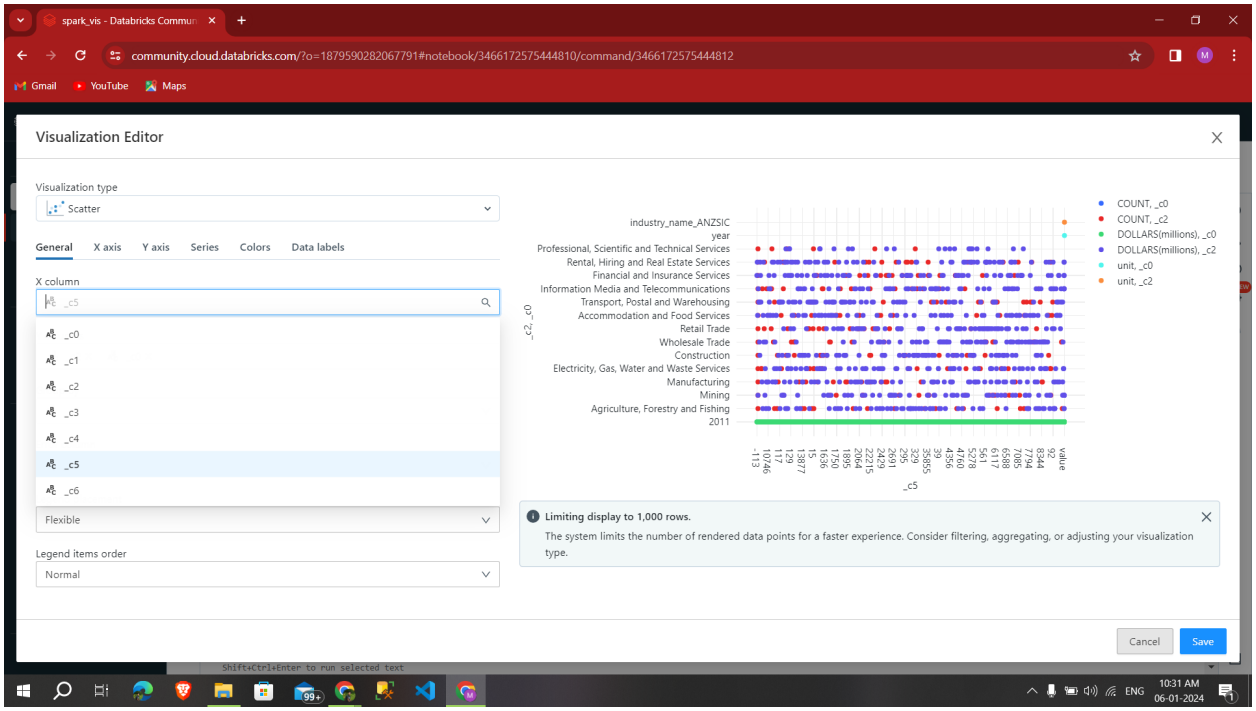
Step 7: Then i used the pyspark command to read the table and convert into the dataframe **df=spark.read.csv("survey_csv_csv")**



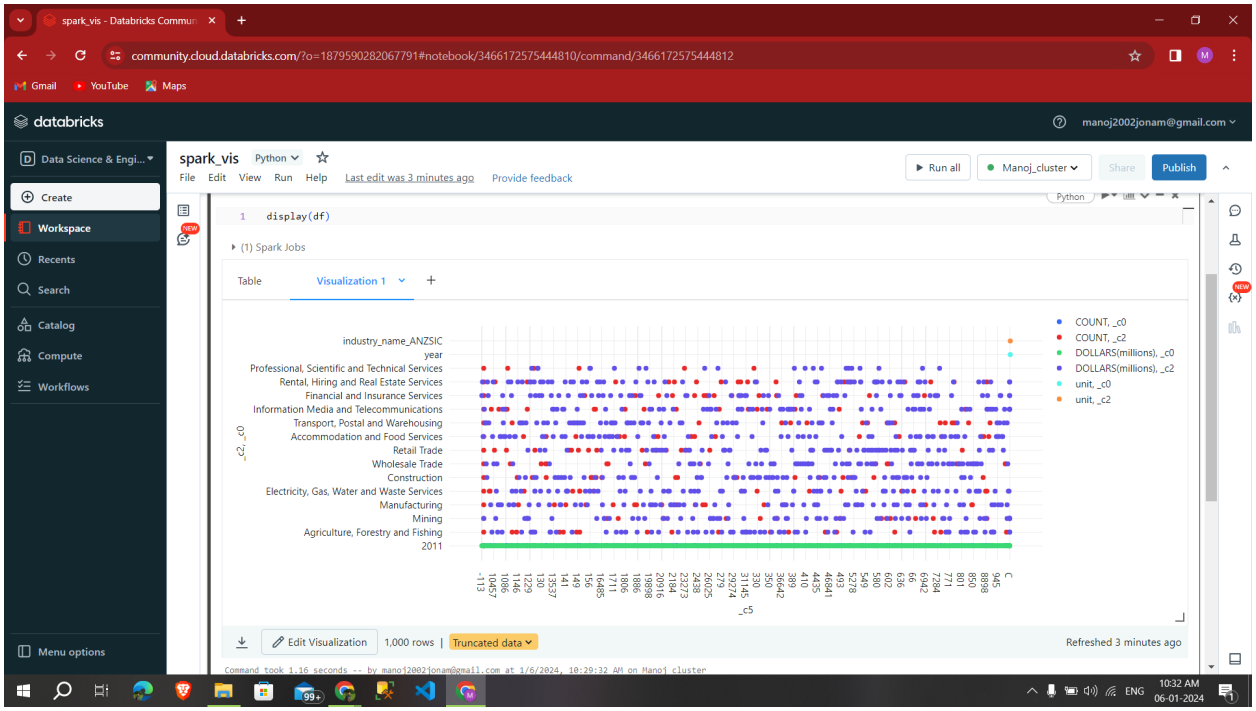
Step 8: By using display command displaying the table in the notebook,then click the plus option next to the table ,**select visualization**



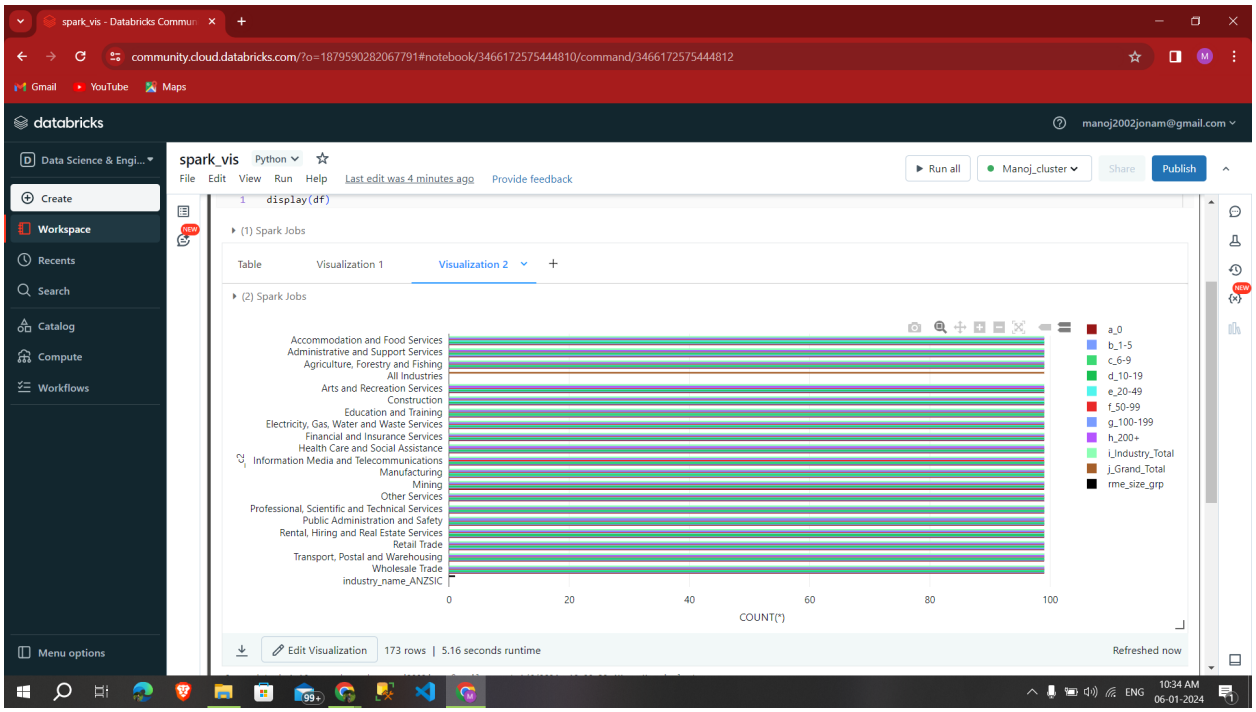
Step 9: After selecting visualization tab the editor pops up and **we can manage the x-axis and y-axis and save the visualization**



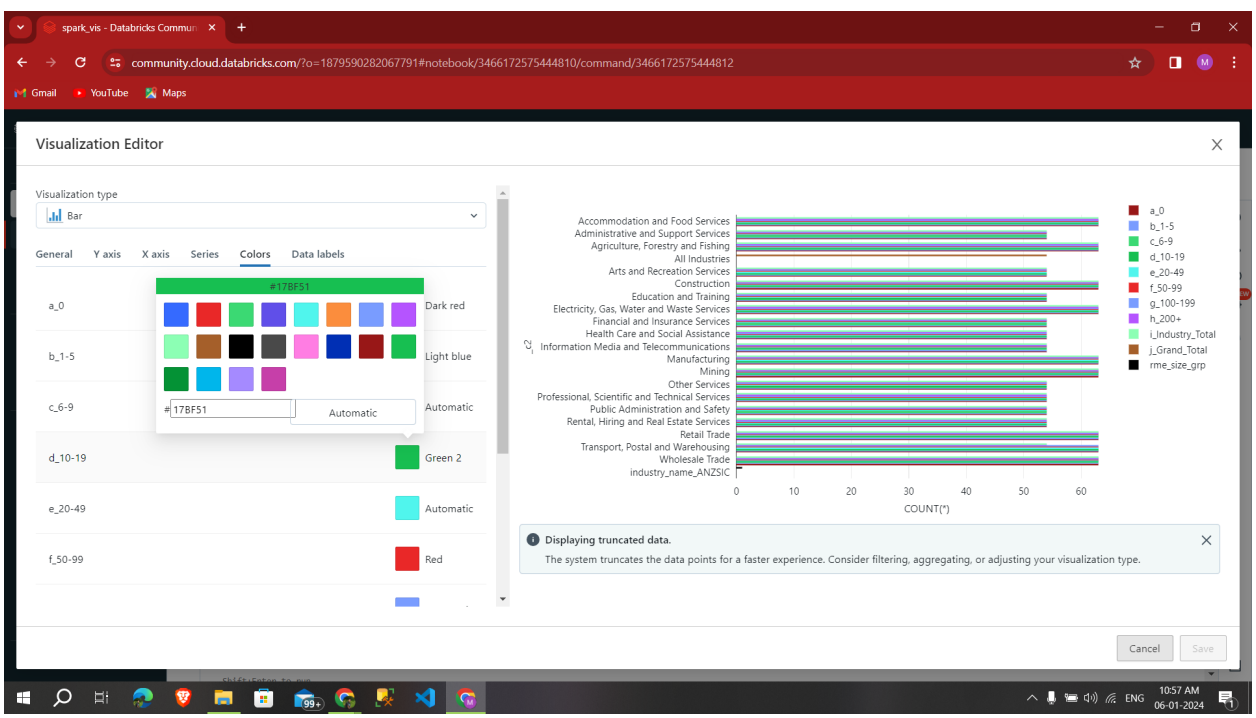
Step 10: The saved **visualization in the output**



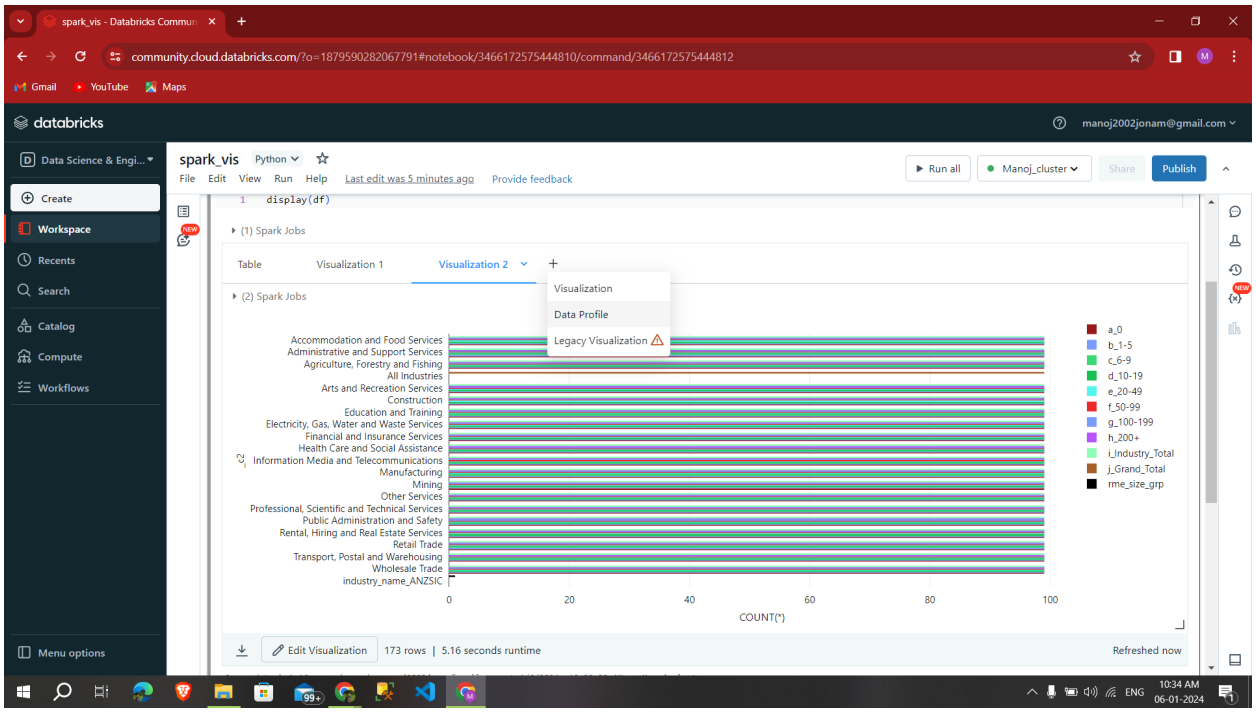
Step 11: Then i created a another **visualization by using bargraph** method and the output is shown below



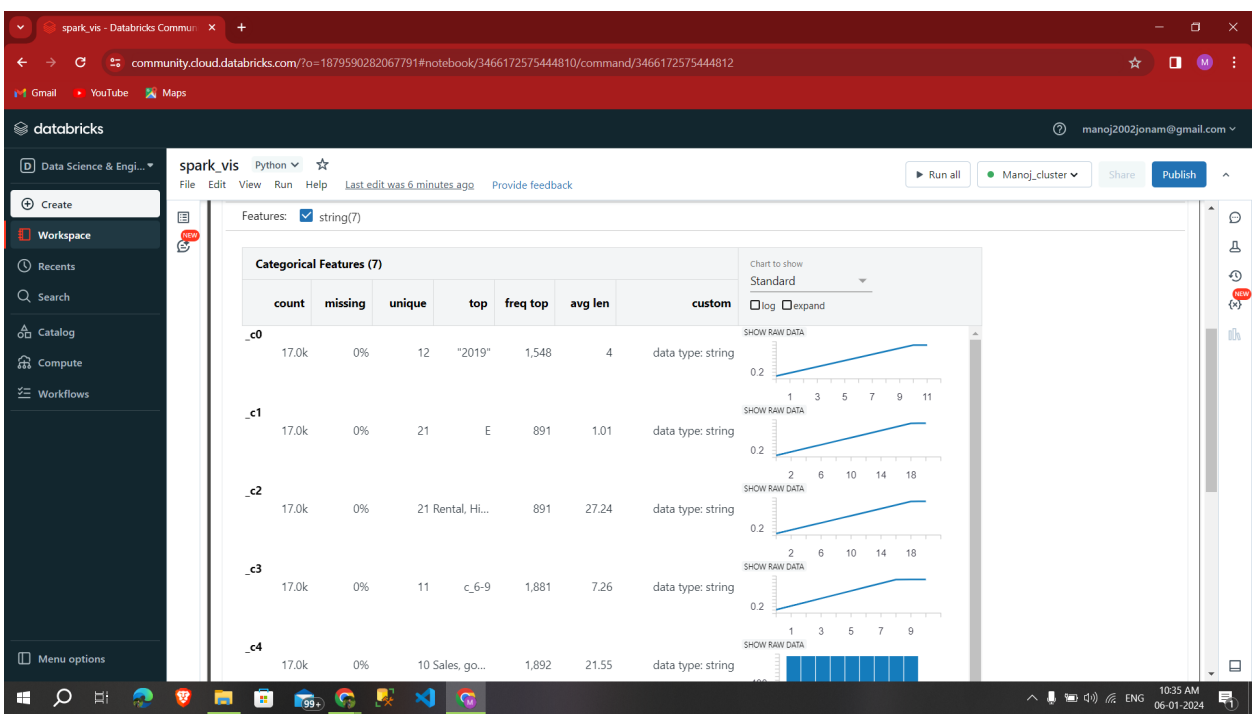
We can also able to **change the colors**



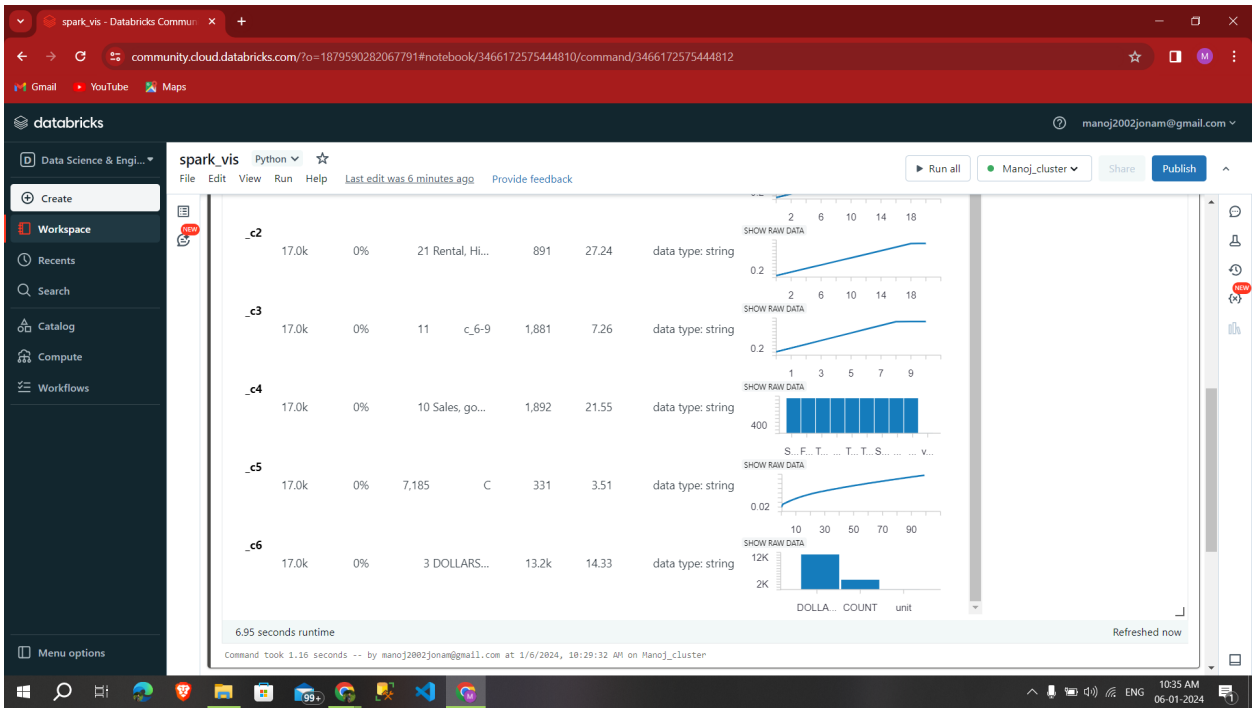
Step 12: Then adding a **data profile of that particular table**



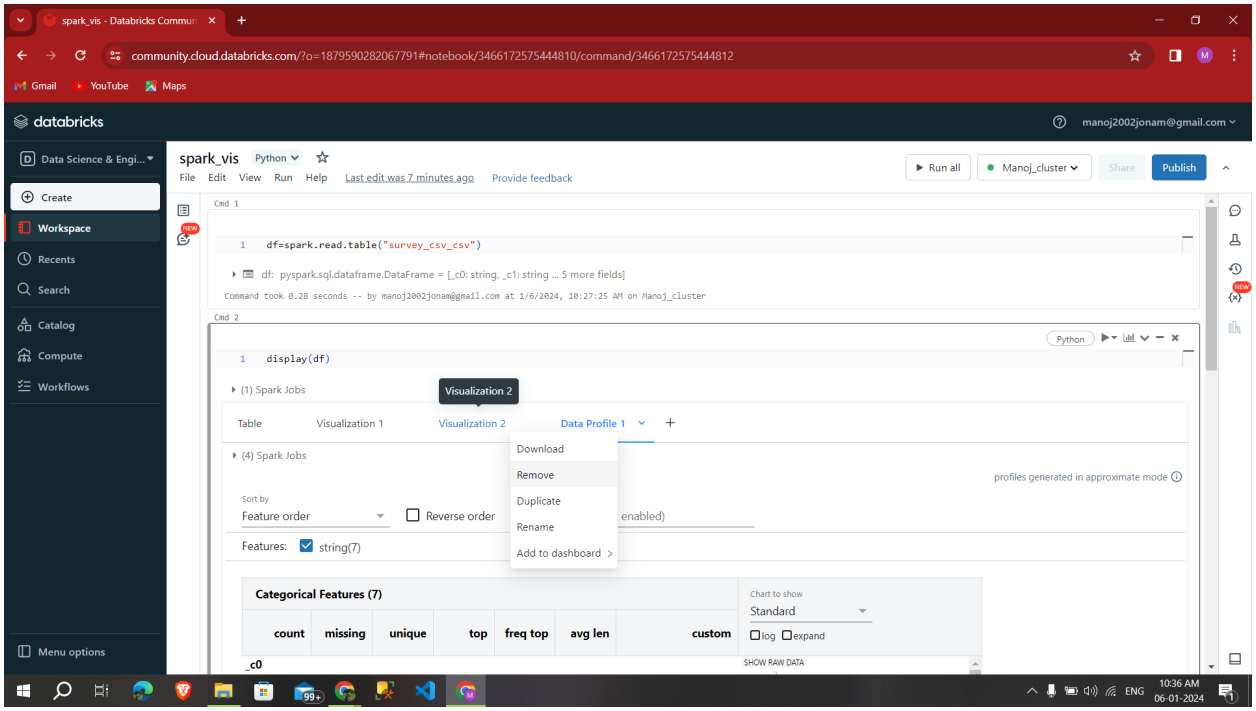
Step 13: The **data profile for the table**



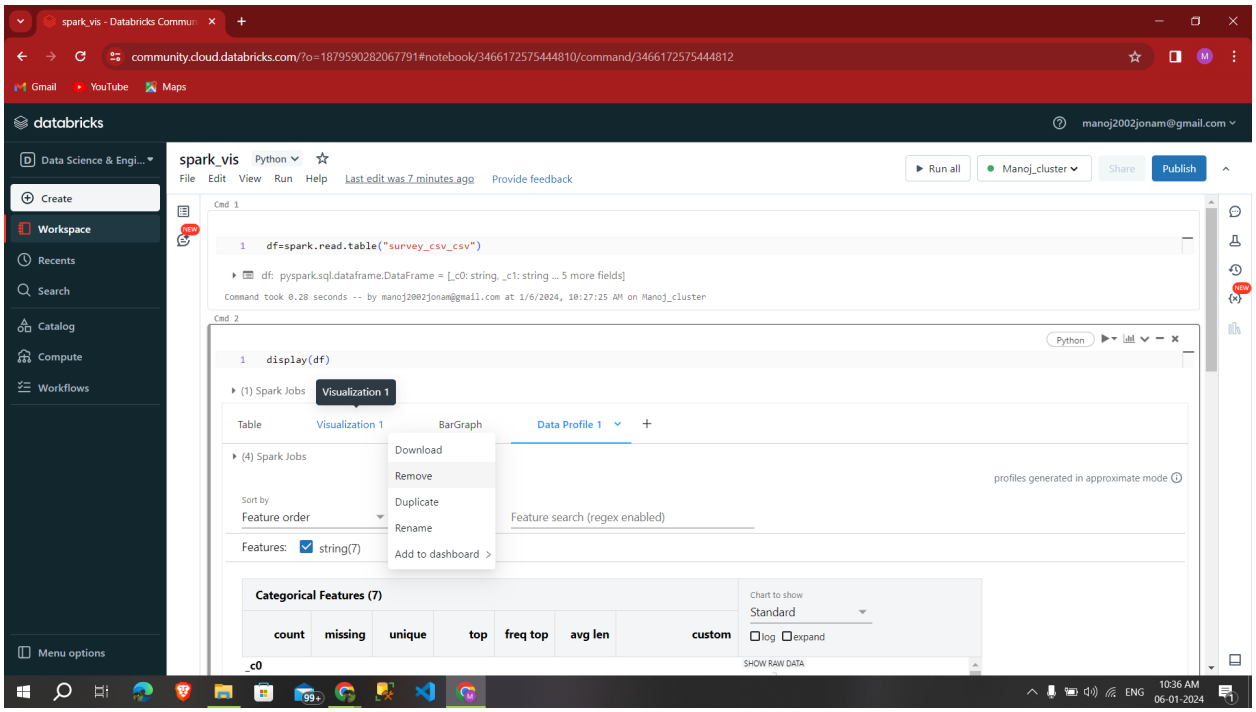
Continuation



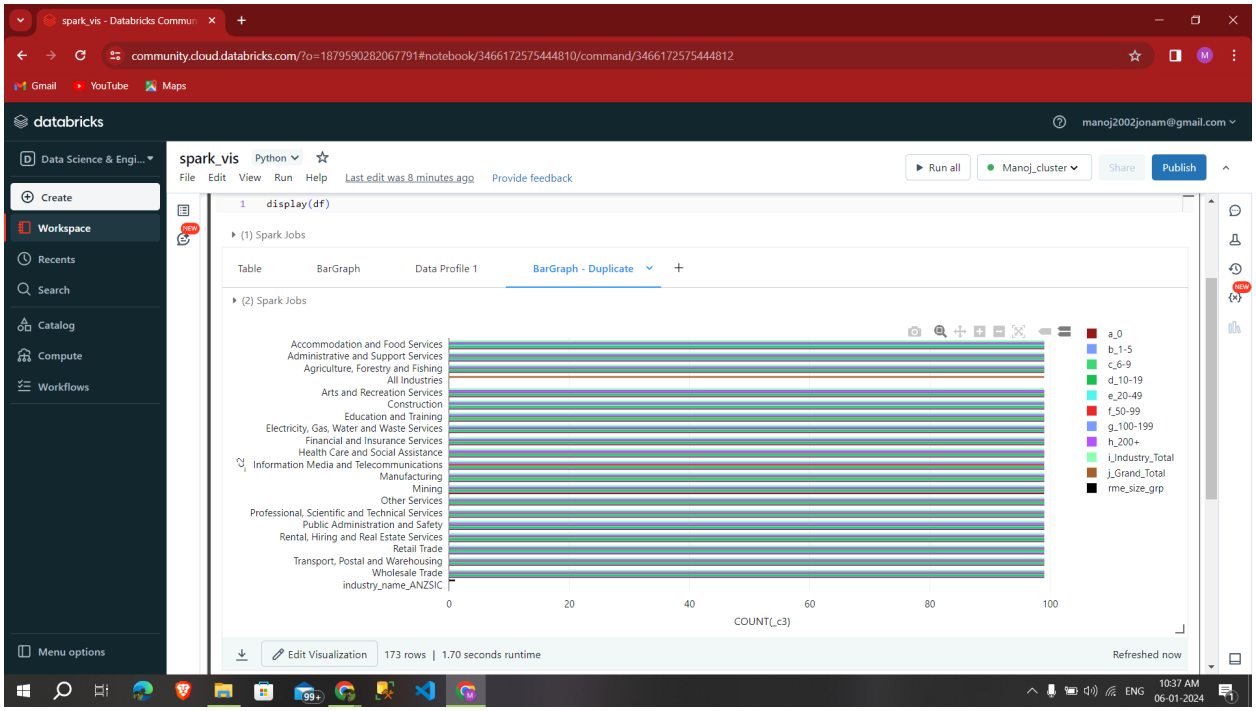
Step 14: We can also able to **perform rename,duplicate,remove the visualization or dataprofile**



Step 15:I renamed a **visualization 2 into BarGarph** and **removed the visualization 1**



Step 16: I **duplicated the bar graph** and its shown in the **next to the data profile**



These are processes of Create a cluster &Attach the notebook to the cluster and run all commands in the notebook,DataFrame from a Databricks dataset, Visualizations in Databricks notebooks,Rename, duplicate, or remove a visualization or data profile.

2.Explain the copy activity in Azure data factory.

- ★ **Azure Data Factory** is a cloud-based data integration service provided by Microsoft Azure. It allows you to create, schedule, and manage data pipelines that can move data between supported on-premises and cloud-based data stores.

- ★ **Copy Activity** is a crucial component in Azure Data Factory, responsible for moving data between supported data stores. It allows you to copy data from one location to another.
- ★ **Copy Activity is part of a pipeline,** and it performs the actual movement of data as defined in your data pipelines.

- ★ **Pipelines are a key concept in Azure Data Factory,** representing a logical grouping of activities that together perform a task.
- ★ Pipelines define a set of **data-driven workflows for orchestrating and automating data movement and data transformation.**

Steps :

1. Source and Destination :

- **Source:** The location from which data needs to be copied. This can be a file, database, or any supported data store.
- **Destination:** The destination where the data needs to be copied. This could be another database, file system, or any supported data store.

2.Azure data factory

- Create a data factory service and launch the factory

3.Creating a pipeline:

- After launching the factory click **ingest → properties**
- Select **built in copy → run once → next**
- We have to select the source data storage account
    - Select **the storage type → click new connection**
    - Select **your subscription →source storage account→ test connection → create**
- After selecting the source storage account need to **select the folder → next**
- We have to select the destination data storage account
    - Select the **storage type → click new connection**
    - Select your **subscription →source storage account→ test connection → create**
- After selecting the destination storage account **need to select the folder → next**
- Give the name for the **pipeline in the setting →next**
- In summary check the **details once again →next**
- Once **deployment is success click→finish**

4.checking the destination file

- Then click on **storage account→ your destination account → container → we can able to see the copied files from the source to destination**

5.Monitor and clean up

- Monitor progress using the data factory in the author tab →pipelines→select the pipeline
- We can able to **perform the pipeline again by validate and debug the pipeline**
- **Scheduling** is a crucial aspect that enables you to define when and how frequently your data pipelines should run.
- Clean up resources after completing the process to **avoid ongoing costs.**

★ Copy Activity is a tool for orchestrating data movement and transformation across various data stores and services **in a scalable and efficient manner.**

★ It is a fundamental building block for building **end-to-end data pipelines in the Azure cloud.**

These are the process of copy activity in Azure data factory.