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ADTA 5240 Week 6'th (harvesting, Storing, And Retrieving Data)
Professor: Dr. Zeynep Orhan   **Sep 27, 2023**
University Of North Texas

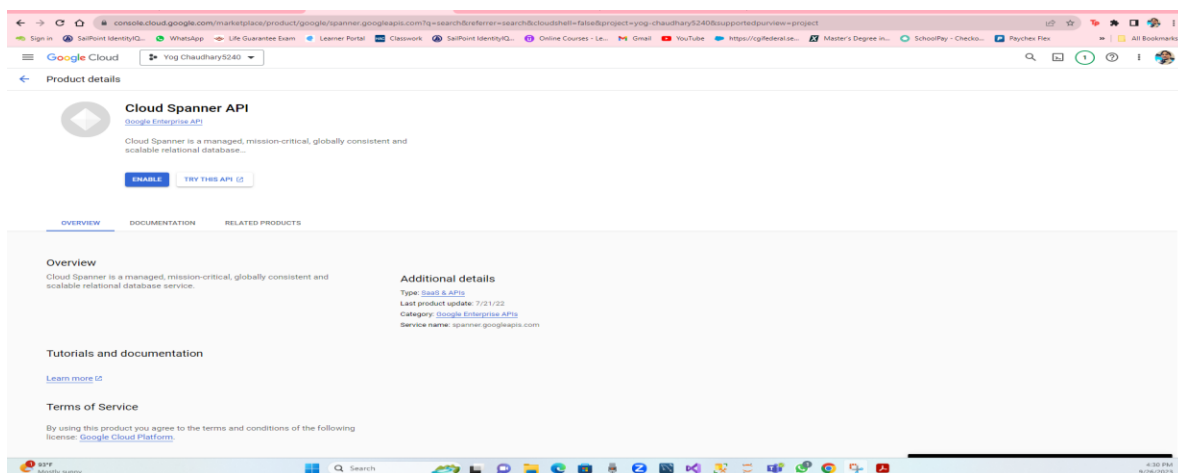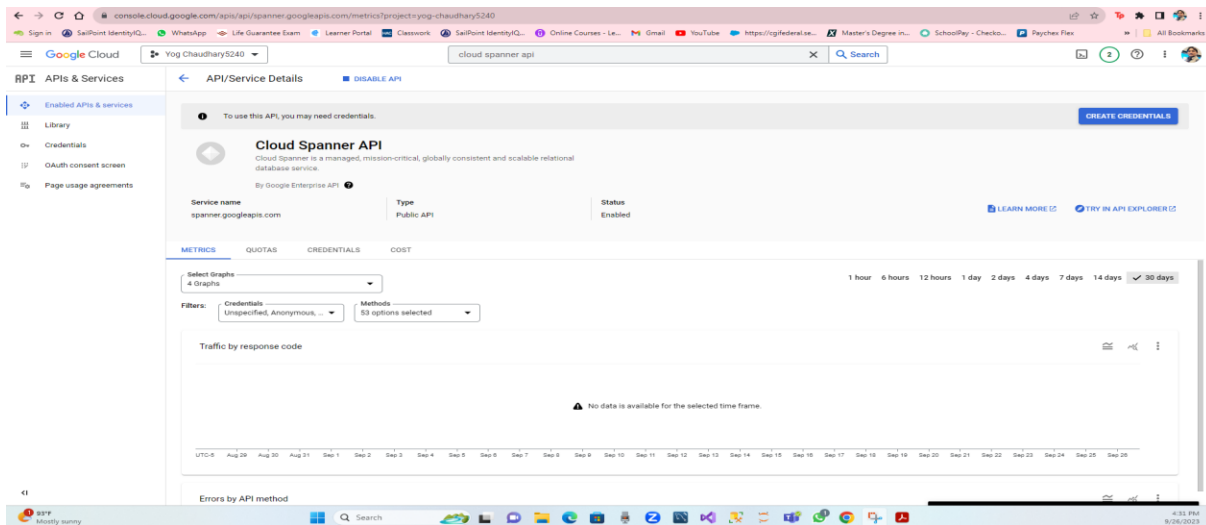**Create an instance, dataset, and tables, and insert data in Cloud Spanner PDF.**

1. **I opened the google cloud console and typed Cloud Spanner API in the search bar, Clicked on Cloud Spanner API**
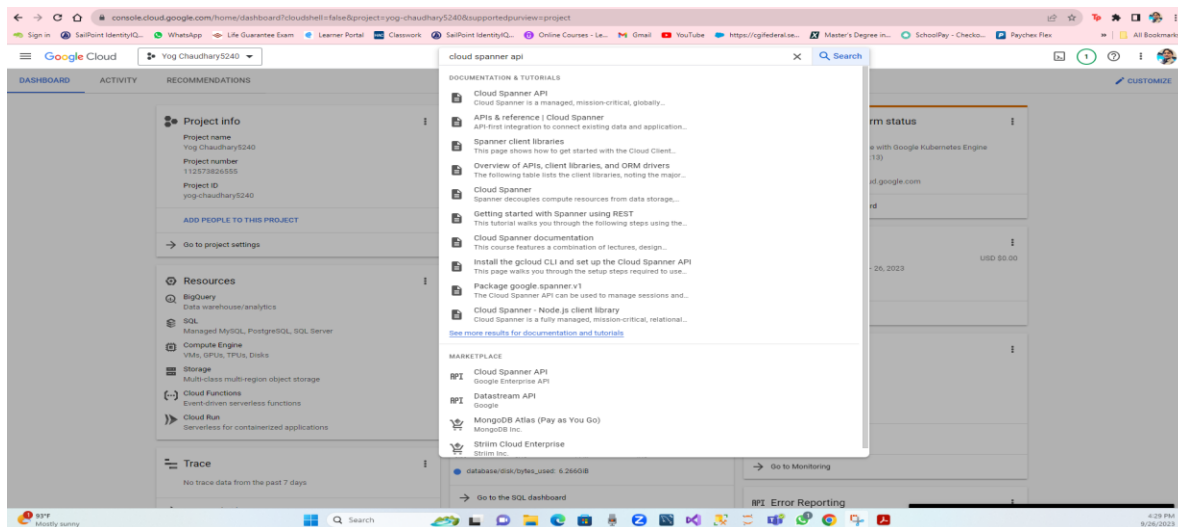
- By Clicking on Cloud Spanner API, I was taken to this page.
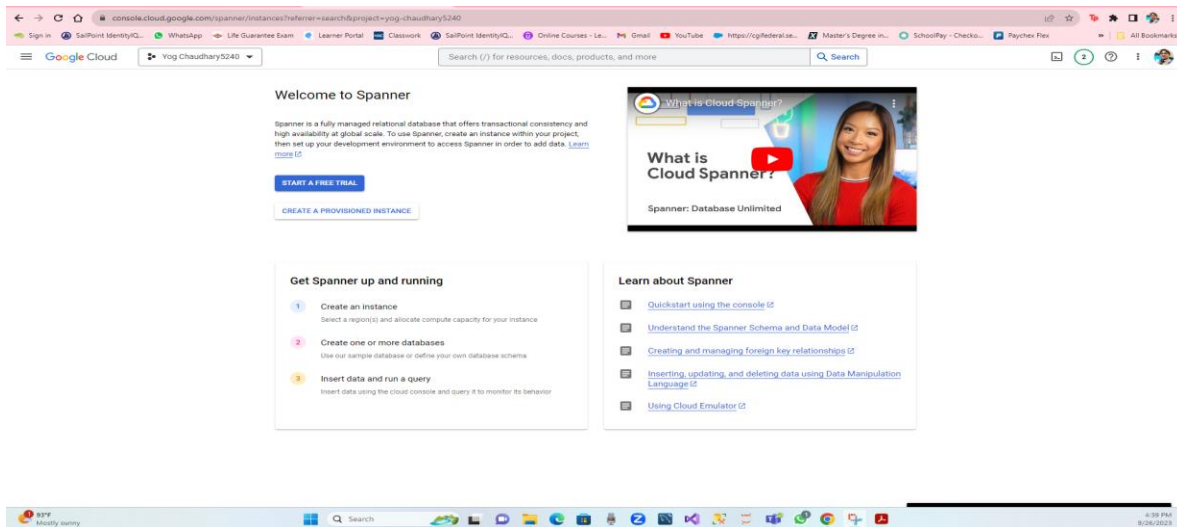- Clicked on enable

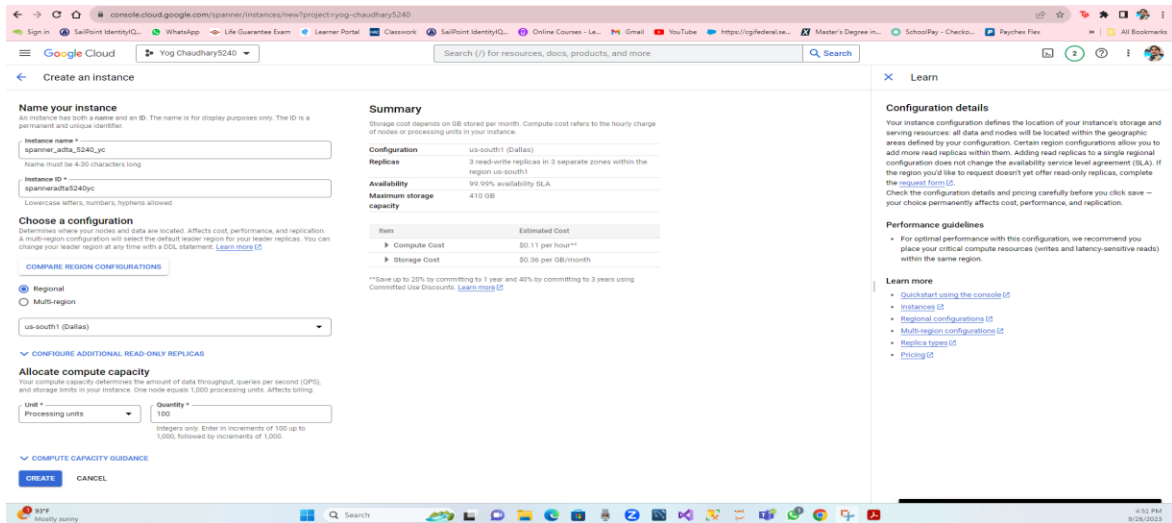- After enabling I was taken to the page below.

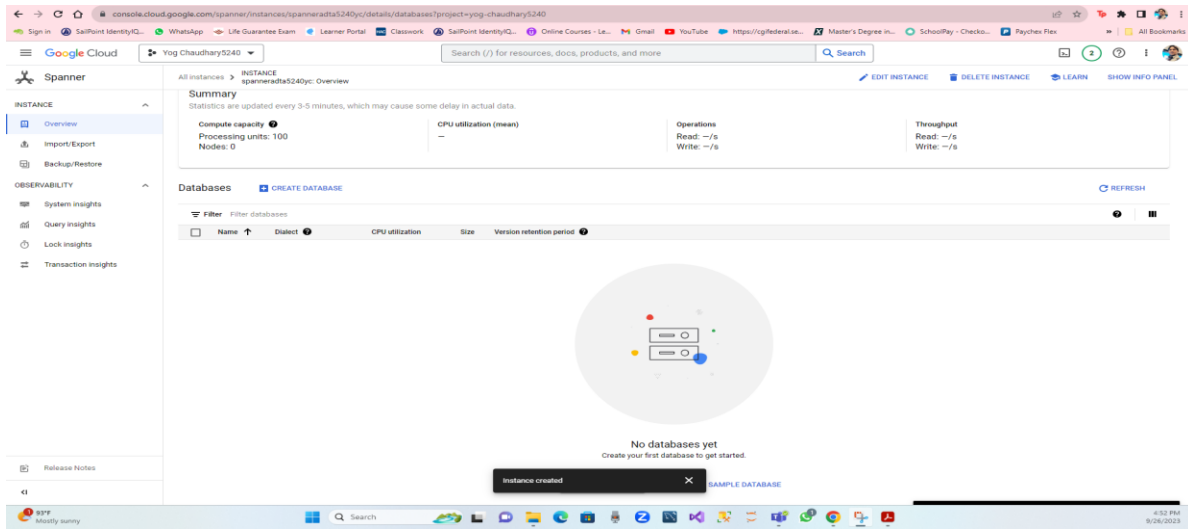**2. Then I have created a new instance from the cloud spanner overview.**

- I clicked on Create a provision instance.

- By clicking on this I was taken to the page.
- I have given the instance name as spanneradta5240yc
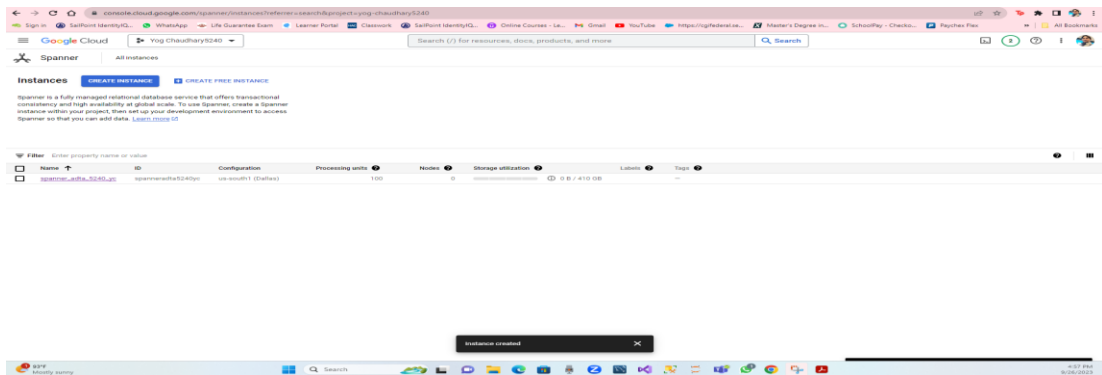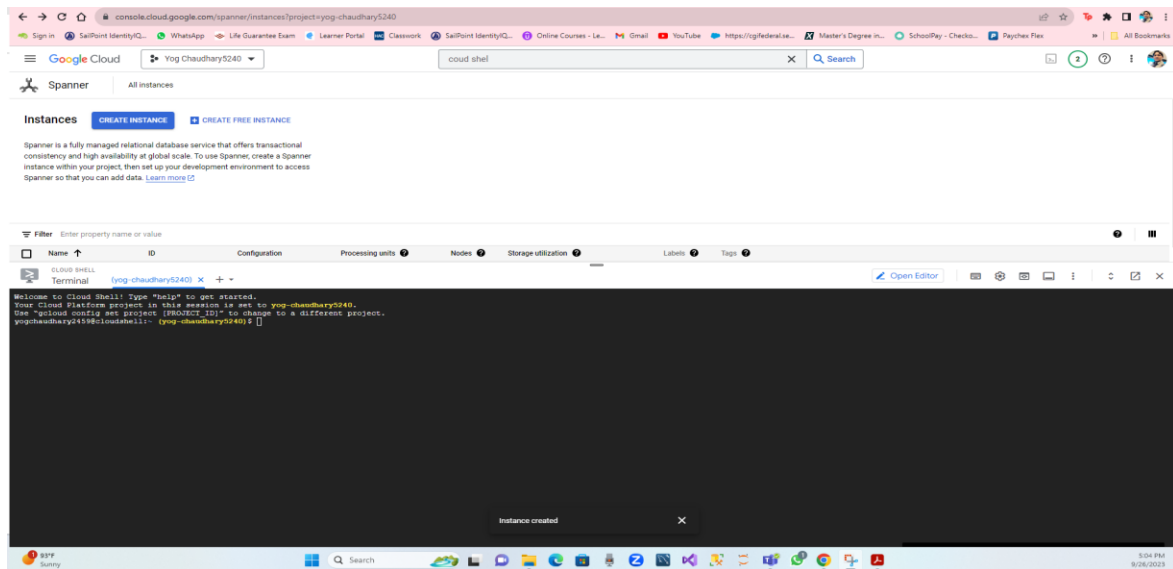- Quantity as 100
- Clicked on create

- Then I go through this page.
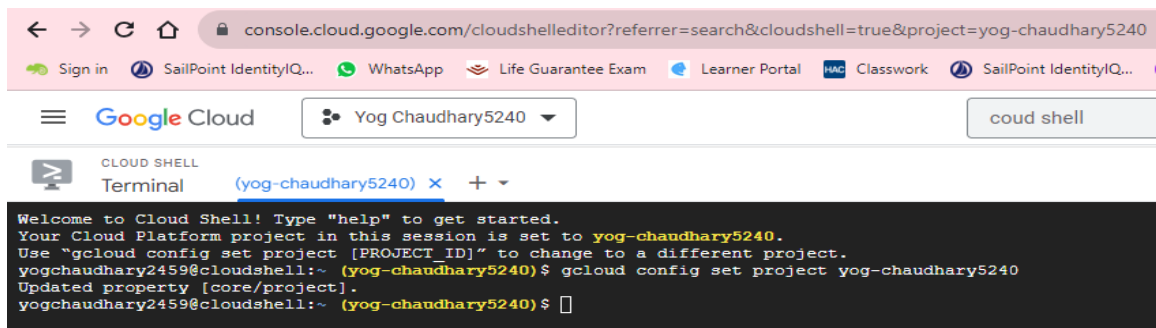

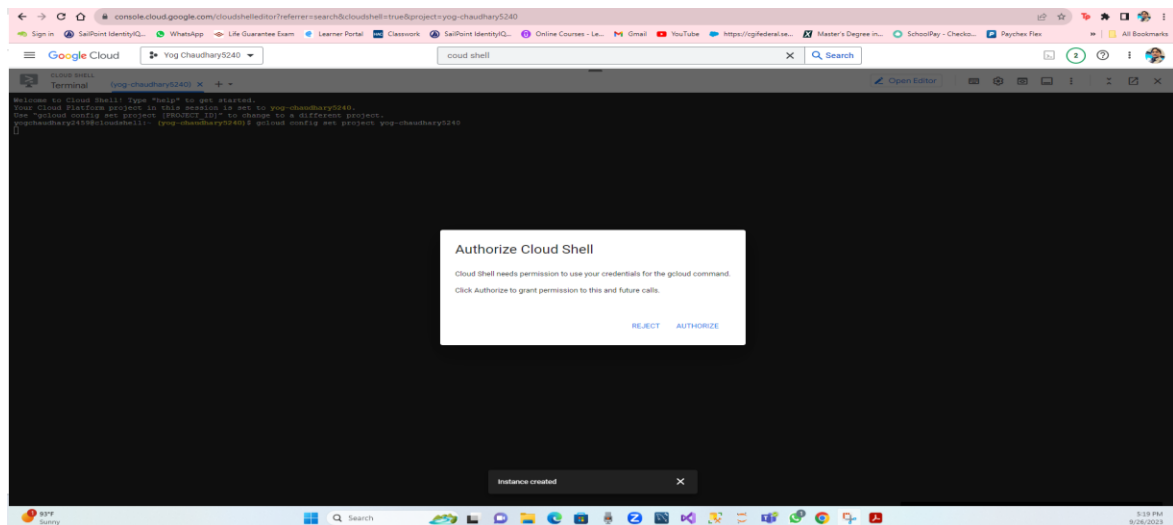- Hare the instance was successfully created.

3. After this, I activated the cloud shell shown in the screenshot below.

4. I have set the id a Google Cloud Platform project as the default project for the gcloud command-line tool by using the command.

- (gcloud config set project yog-chaudhary5240)
- Click on Authorize.

5. For running code locally during development and testing, I have used this command.

- (gcloud auth application-default login)
- Then I clicked enter

- I clicked on the above link, then it took me to the screen below.
- There I copied the code.
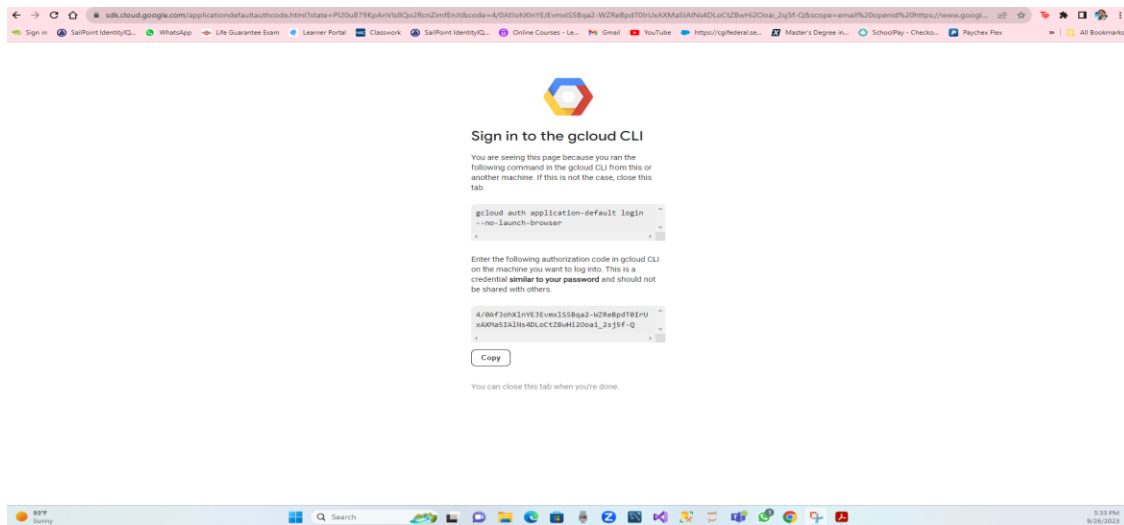
- After that, I pasted that code in the cloud shell as shown below.
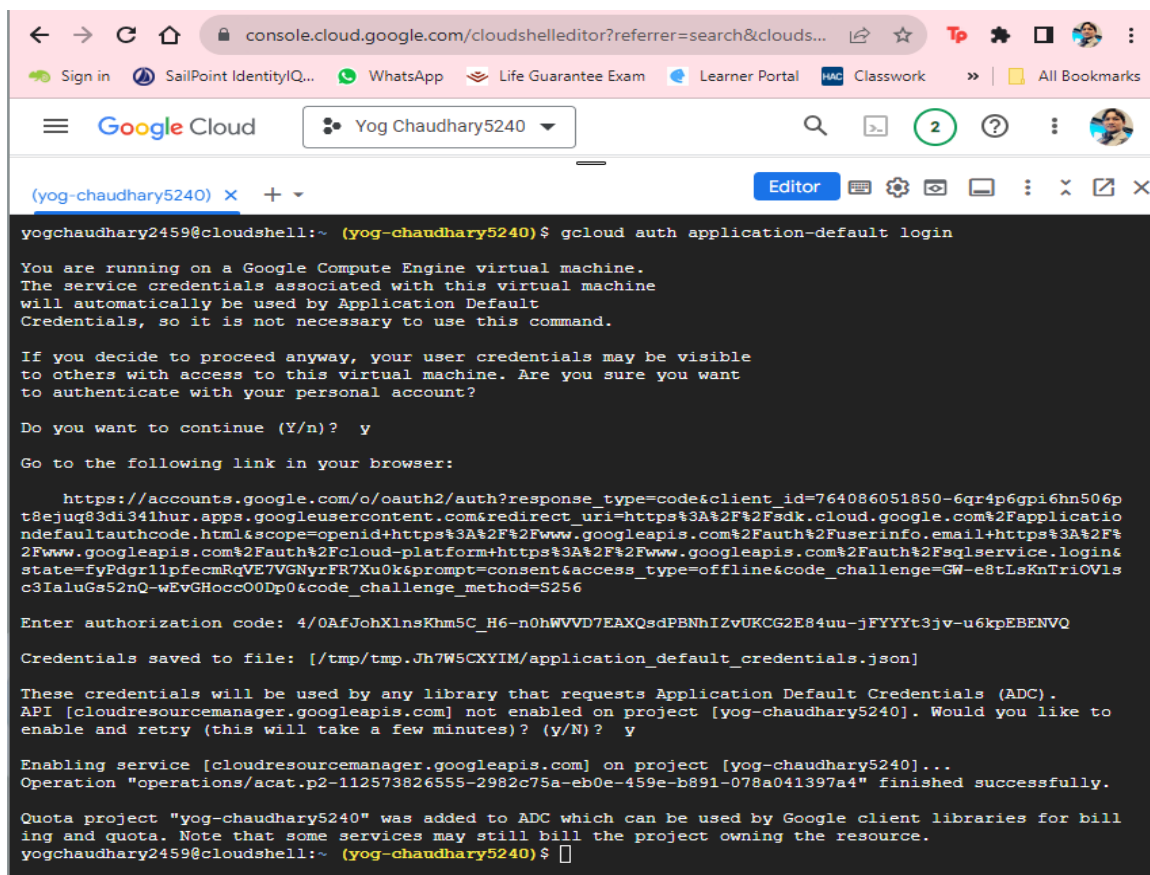
6. Now I must set up my development environment and authentication.

- For this I have used this command.
- (gcloud spanner instance-configs list)

- This has given a list of the cloud spanner instance configurations which my project can access, including regional and multiregional configurations like in the screenshot below.

7. Creating an instance

A) After I got list of configurations, to create instance I have used the below command.

- (gcloud spanner instances create test-instance --config=regional-us-central1 --description="My Instance" --nodes=1).
- Here I have given instance name as My Instance.

8. Setting the default instance:

B) Then I set the default instance that cloud spanner uses when I have not specified an instance in my command.

- For this I have given the code below.
- (gcloud config set spanner/instance test-instance)

```
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud spanner instances create test-instance --config=regional-us-central1 --description="My Instance" --nodes=1
Creating instance...done.
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud config set spanner/instance test-instance
Updated property [spanner/instance].
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$
```

9. Create a database:

- I have created a database named example-db.
- For Creating this I have used the below command
- (gcloud spanner databases create example-db)

```
updated property [spanner/instance].
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud spanner databases create example-db
Creating database...done.
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$
```

10. Creating a schema

- I used cloud spanners data definition language (DDL) for creating a schema.
- I am going to create two tables singer and albums.
- **Let us create two table:**
- **gcloud spanner databases ddl update example-db** \ --ddl='CREATE TABLE Singers (SingerId INT64 NOT NULL, FirstName STRING(1024), LastName STRING (1024), SingerInfo BYTES(MAX)) PRIMARY KEY(SingerId)'
- **gcloud spanner databases ddl update example-db** \--ddl='CREATE TABLE Albums (SingerId INT64 NOT NULL, AlbumId INT64 NOT NULL, AlbumTitle STRING(MAX)) PRIMARY KEY (SingerId, AlbumId), INTERLEAVE IN PARENT Singers ON DELETE CASCADE'

```
≡ Google Cloud     • Yog Chaudhary5240 ▾          cloud shell                                    ✕    Q Search
CLOUD SHELL
Terminal    (yog-chaudhary5240) ✕   +

yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud spanner databases ddl update example-db \
--ddl='CREATE TABLE Singers ( SingerId INT64 NOT NULL, FirstName STRING(1024), LastName STRING(1024), SingerInfo BYTES(MAX) ) PRIMARY KEY
(SingerId)'
-bash: syntax error near unexpected token `('
-bash: syntax error near unexpected token `''
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud spanner databases ddl update example-db \
--ddl='CREATE TABLE Albums ( SingerId INT64 NOT NULL, AlbumId INT64 NOT NULL, AlbumTitle STRING(MAX)) PRIMARY KEY (SingerId, AlbumId), INTERLEAVE IN PARENT Singers ON DELETE CASCADE'
-bash: syntax error near unexpected token `('
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$
```
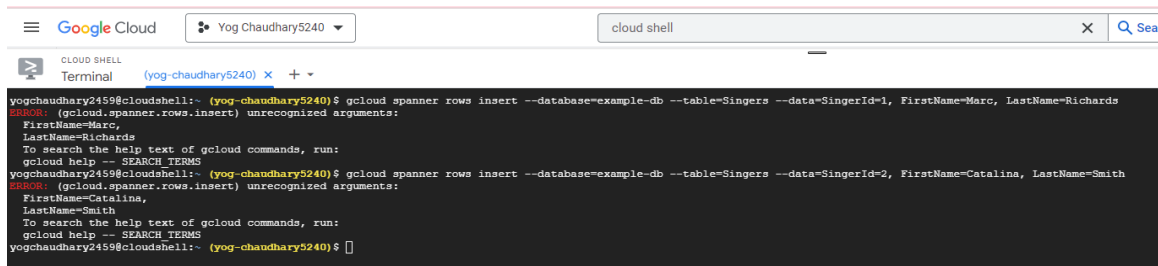
11. Write Data:

- Now I am writing data to my data set
- Let us singer Table:

Row 1

- **gcloud spanner rows insert --database=example-db --table=Singers --data=SingerId=1,FirstName='Marc',LastName='Richards'**
- gcloud spanner rows insert --database=example-db --table=Singers --data=SingerId=2,FirstName='Catalina',LastName='Smith'

Row 2

- gcloud spanner rows insert --database=example-db --table=Singers --data=SingerId=2, FirstName=Catalina, LastName=Smith
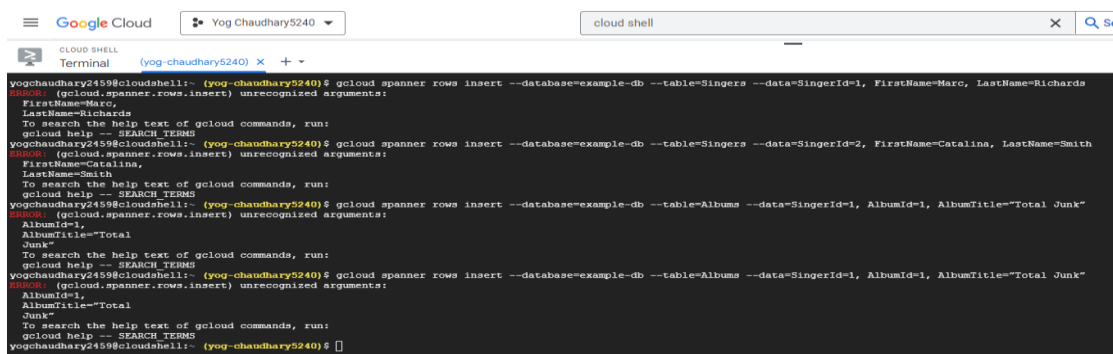

For album table:

Row 1

- gcloud spanner rows insert --database=example-db --table=Albums --data=SingerId=1, AlbumId=1, AlbumTitle=" Total Junk"

Row 2

- gcloud spanner rows insert --database=example-db --table=Albums --data=SingerId=1, AlbumId=1, AlbumTitle=" Total Junk"
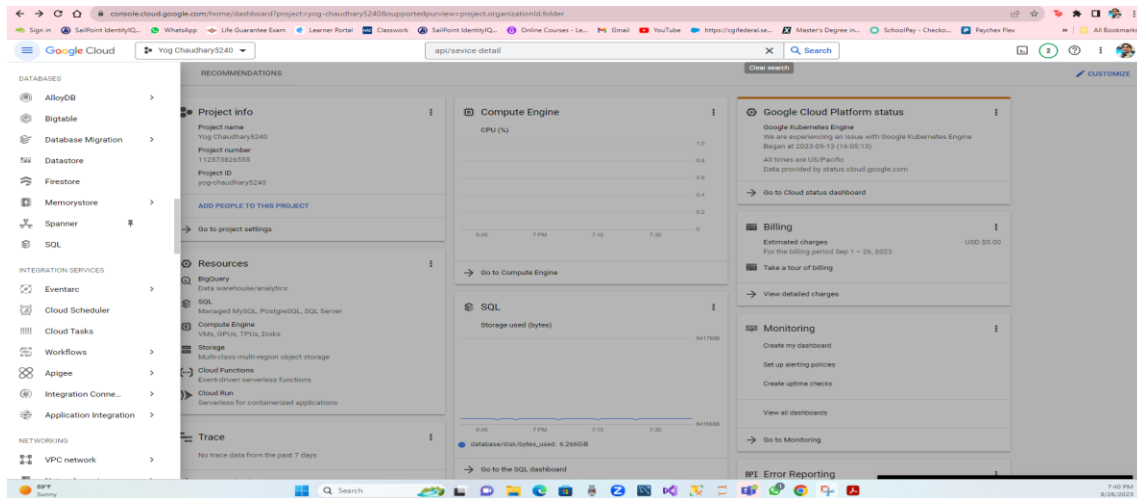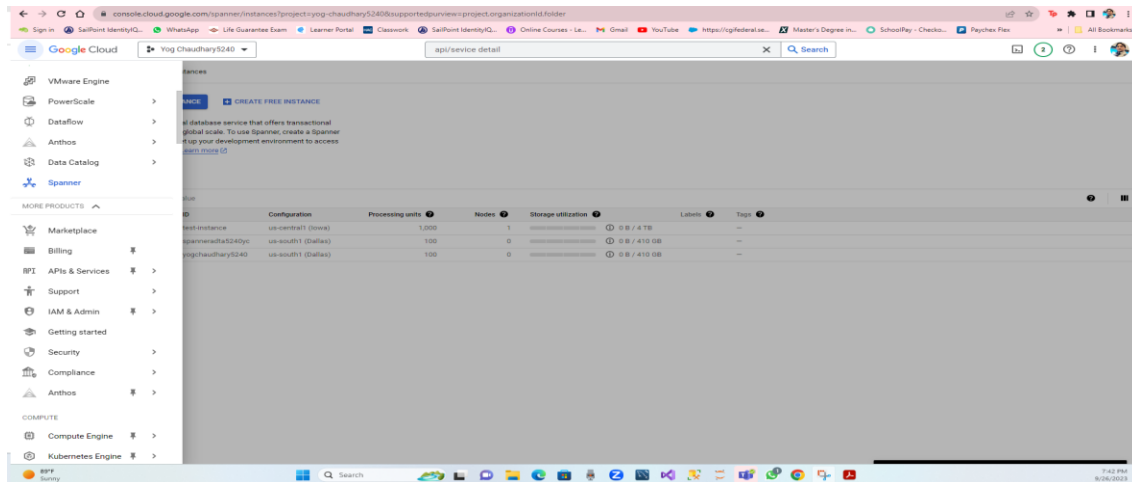

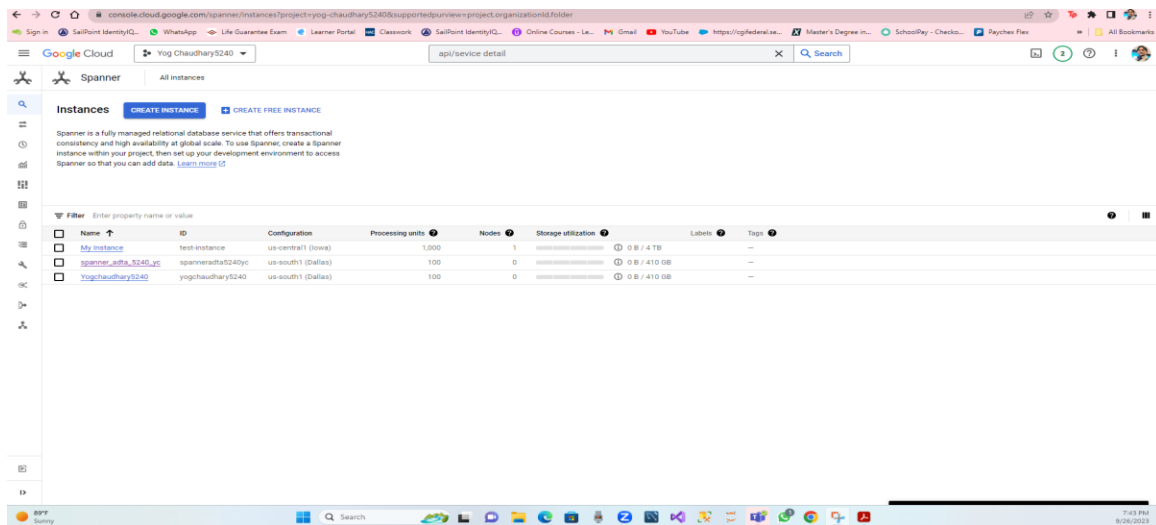- Now I have closed shell.

12. Query data using SQL:

1. After closing the cloud shell, I clicked on the navigation panel.
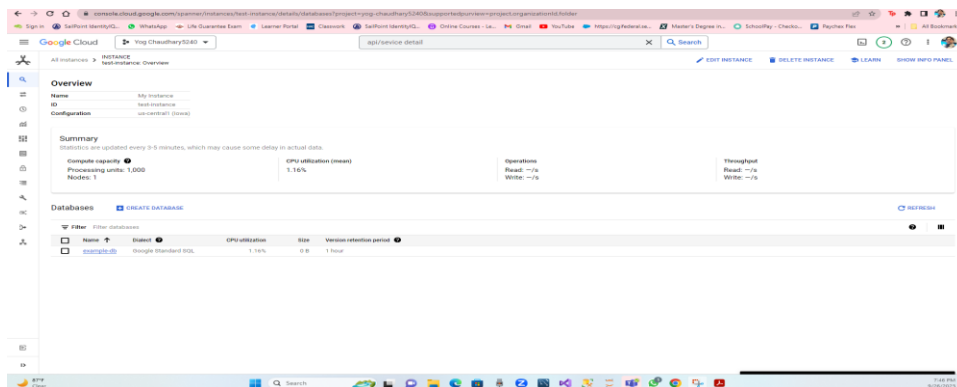2. Then I clicked on the spanner.

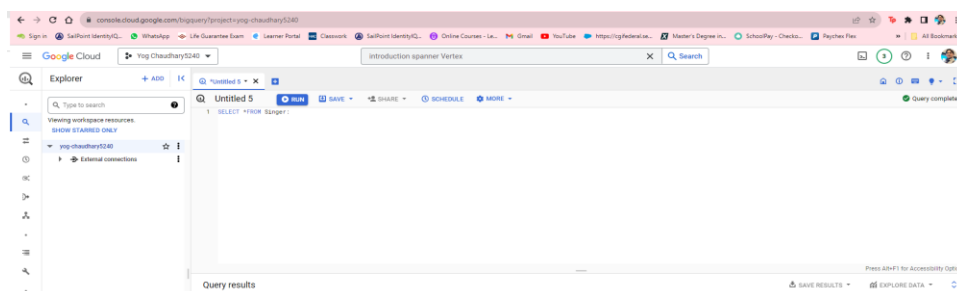- After clicking on spanner, I was taken to this page below.

- Clicked on my instance

- After Clicking on that gone through the page.

- Then I clicked on my database(example-db).
- In database(example-db) I clicked on singer after that I clicked on query.
- After clicking on query, I was redirected to the below page.
- I typed (SELECT * FROM Singers;)
- Then I clicked on run.ss
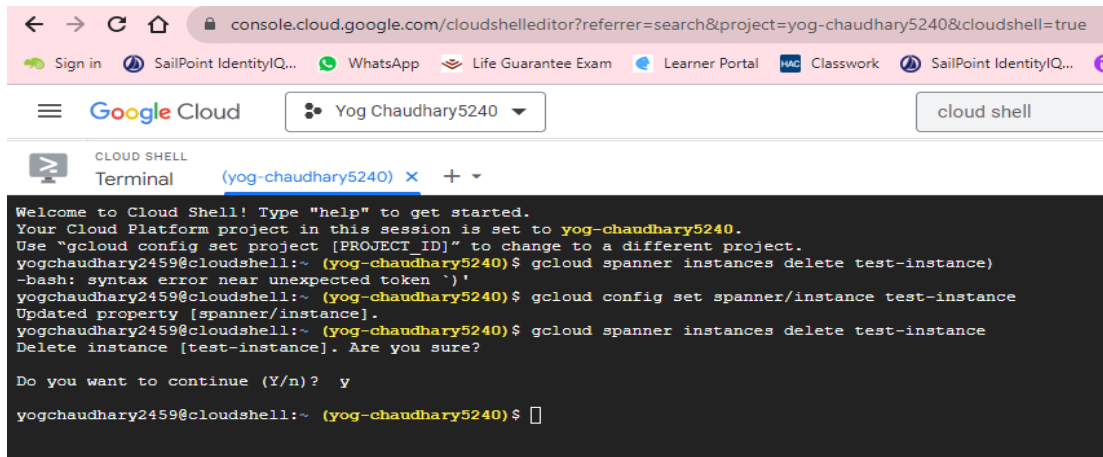

- Hence it shows that I have successfully entered data into the table singer
- Here is the screenshot of that

13. Clean and delete an instance:

- For avoiding additional charge to me google cloud account I have deleted the instance.

- (gcloud spanner instances delete test-instance)


```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to yog-chaudhary5240.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud spanner instances delete test-instance)
-bash: syntax error near unexpected token `)'
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud config set spanner/instance test-instance
Updated property [spanner/instance].
yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ gcloud spanner instances delete test-instance
Delete instance [test-instance]. Are you sure?

Do you want to continue (Y/n)?  y

yogchaudhary2459@cloudshell:~ (yog-chaudhary5240)$ []
```