University Of Engineering and Technology, Lahore
Computer Engineering Department

Course Name: Database Systems	**Course Code: CS363L**
Assignment Type: Lab	**Dated: 17-01-2022**
Semester: 6th	**Session: 2019**
Lab/Project/Assignment #: Lab 1	**CLOs to be covered: CLO3**
Lab Title: Introduction to DBMS and databases	**Teacher Name: Ms. Darakhshan**

Lab Evaluation:

CLO3	Derive physical model from conceptual design methods					
Levels (Marks)	**Level1**	**Level2**	**Level3**	**Level4**	**Level5**	**Level6**
Cognitive (5)						
Report Marks (5)						
					Total	**/10**

Rubrics for Current Lab:

Scale	Marks	Level	Rubric
Excellent	**5**	L1	Created GCP account and have explored GitHub dataset. + Rubric IV requirements
Very Good	**4**	L2	Generated database's scripts. + Rubrics III requirements
Good	**3**	L3	Created a new database. + Rubrics II requirements
Basic	**2**	L4	Installed SQL server and Management Studio and restored Northwind schema.
Barely Acceptable	**1**	L5	Only installed MS SQL server
Not Acceptable	**0**	L6	Did not attempt anything

Rubrics for Homework

Scale	Marks	Level	Rubric
Excellent	**5**	L1	Properly formatted, less than 5% plagiarism. More than 1000 words. Downloaded the tool and have used it. Created sample databases. Have added all the working in the lab report with the help of screenshots. Have explained how the tool works.
Good	**3**	L2	Properly formatted. Less than 5% plagiarism. More than 1000 words. Explored the tool and have understand it. Have explained the tool in the document with the help of screenshots and text.
Barely Acceptable	**1**	L3	Poorly formatted. Less than 5% plagiarism. Less than 500 words. Less than 2-page document.
Not Acceptable	**0**	L6	Did not submit the report

LAB DETAILS:

Lab Goals/Objectives:

- Installation of DBMS
- Registration on BigQuery
- Google Cloud Platform Creation and reloading of database tables on DBMS

Theory/Relevant Material:

Chap 1, TSQL Fundamentals – Professional (latest Ed.) by Itzik Ben-Gan

Lab Tasks:

Part 1

Installation of SQL Server

- Download and Install MS SQL Server 2019 Express edition from https://www.microsoft.com/en-us/sql-server/sql-server-downloads
- Install the latest version of SQL Server Management Studio from Download SQL Server Management Studio (SSMS) - SQL Server Management Studio (SSMS) | Microsoft Docs
- Instance of SQL Server should support both Windows based authentication and SQL Server Authentication.

Create a New Database

- Create a new database named Northwind. The steps are as follows
  - Step 1
    Open Microsoft SQL server management studio and connect it with the SQL server using Window based authentication as shown below

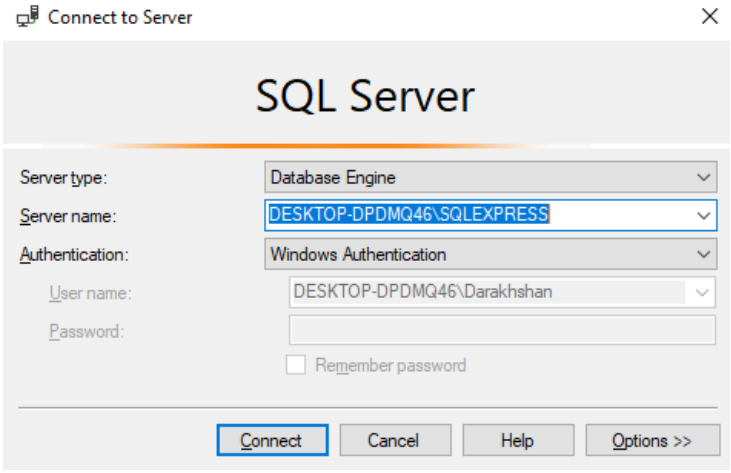

Figure 1

  - Step 2
    Right click on Databases and click on 'New Database'

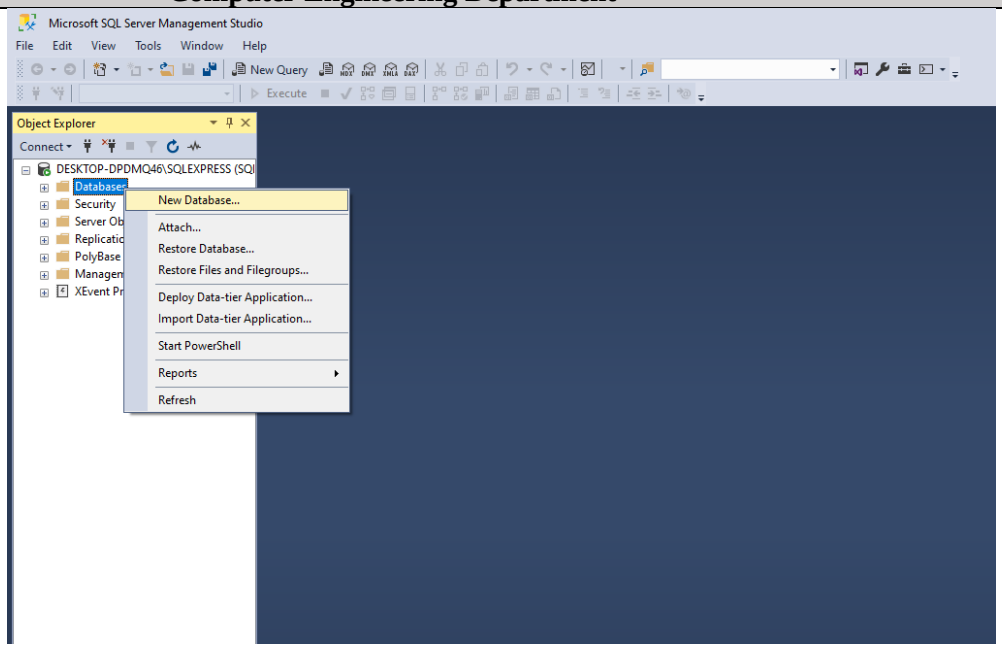

Figure 2

- Step 3
  Choose a database name such as 'Northwind' and click 'OK'

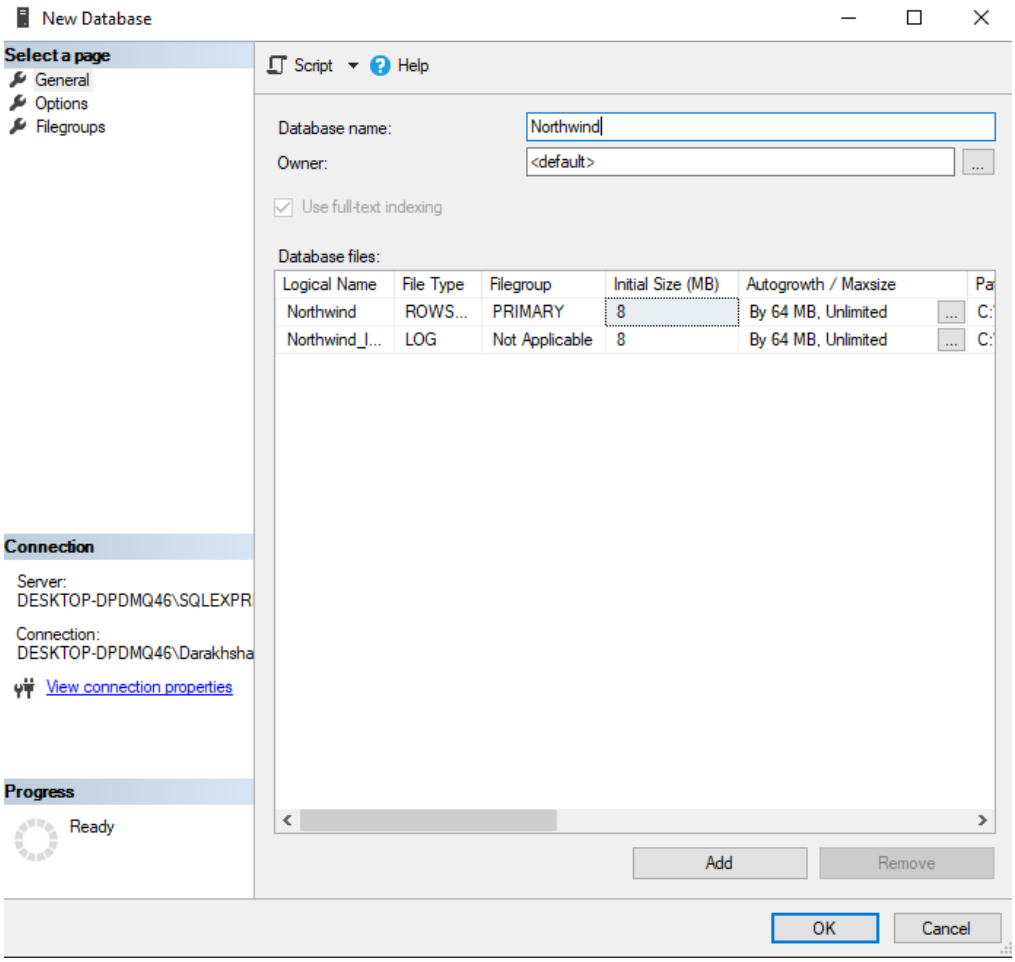

Figure 3

- Restore Schema using scripts northwind.sql available at https://drive.google.com/file/d/1V66pnAgWgJo6Y76XwkTTWrq0KdZGp-x9/view?usp=sharing. The steps are as follows
  - Step 1
    Download the script from the above mentioned link
  - Step 2
    Right click on the Northwind database and select New Query

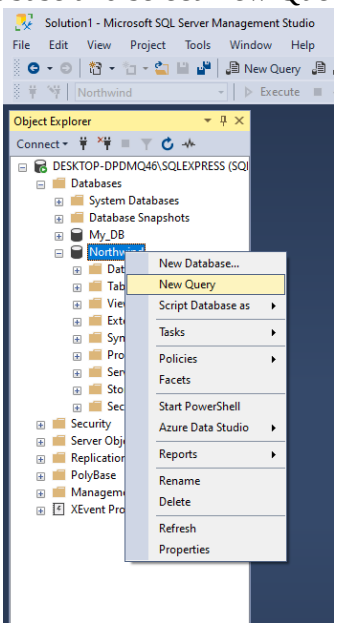

Figure 4

  - Step 3
    Open the downloaded northwind.sql script in any editor (say Notepad) and copy the script in the newly created query window

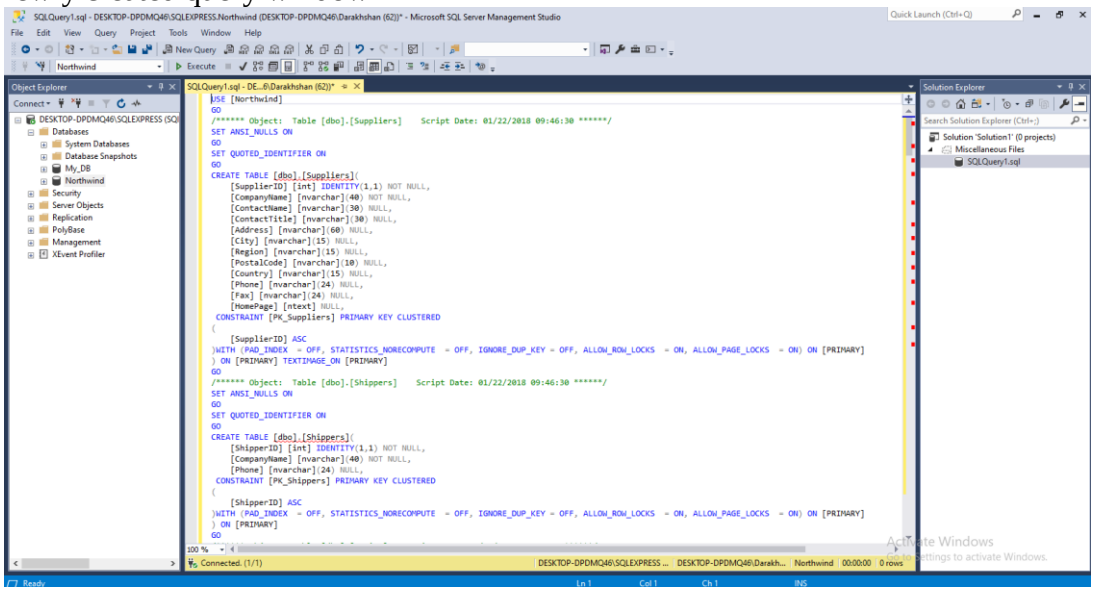

Figure 5

  - Step 4
    Execute the script by clicking on ‘Execute’ button

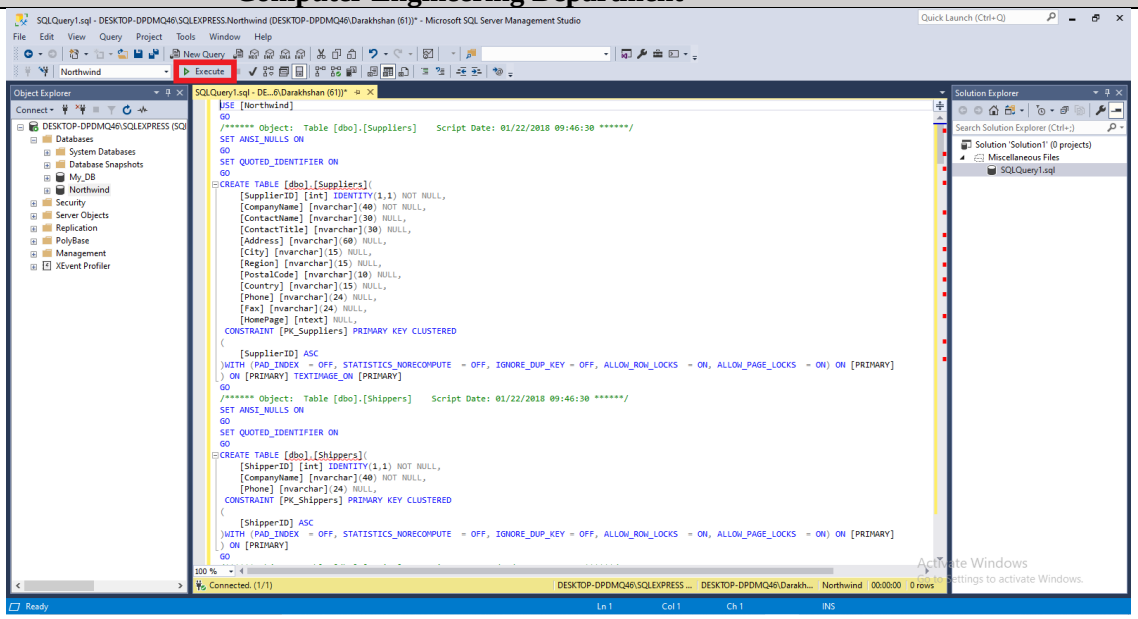

Figure 6

- Restore schema data using northwind_data.sql available at https://drive.google.com/file/d/1wS9soGuKHe0LNrYZiiroXQHusJzGTCCf/view?usp=sharing. The steps are as follows
  - Step 1
    Download the script from the above mentioned link
  - Step 2
    Right click on the Northwind database and select New Query

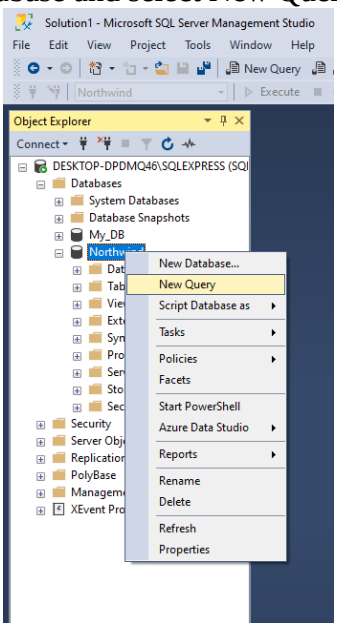

Figure 7

  - Step 3
    Open the downloaded northwind_ data.sql script in any editor (say Notepad) and copy the script in the newly created query window

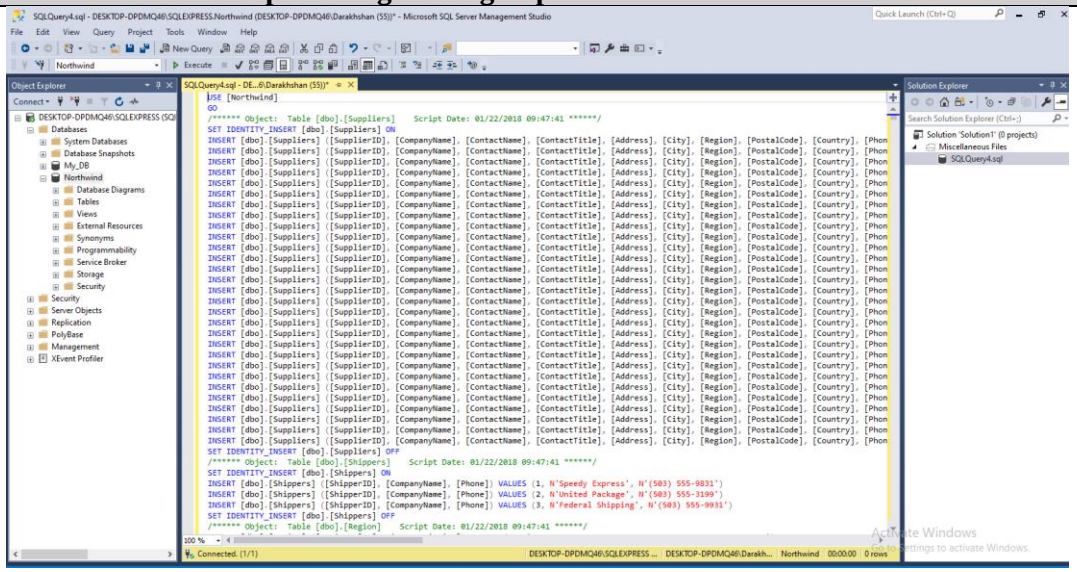

Figure 8

- Step 4
  Execute the script by clicking on 'Execute' button

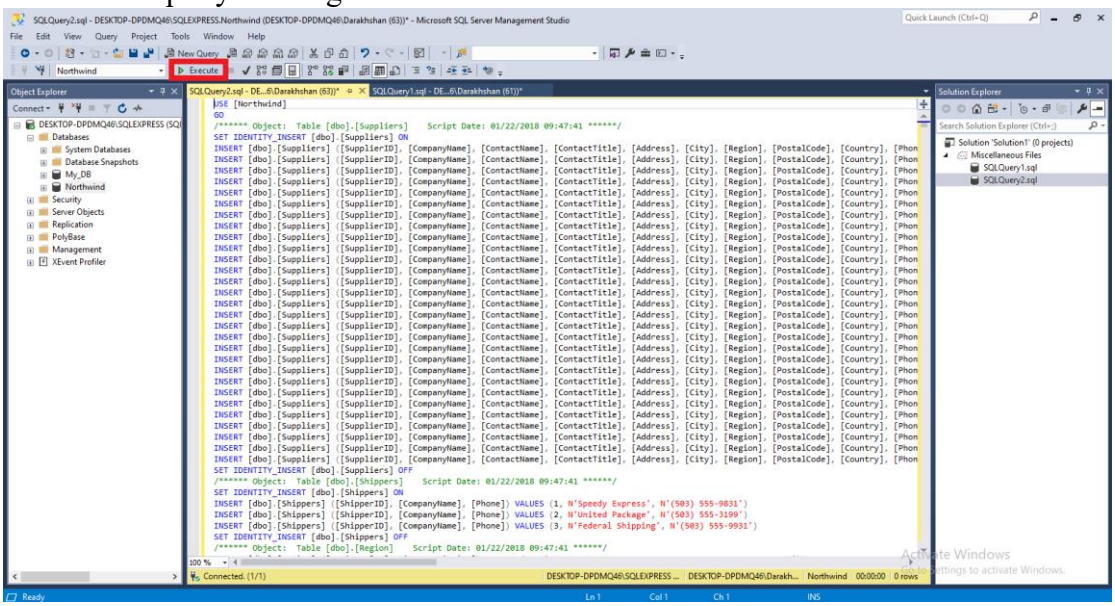

Figure 9

Generate Scripts of a schema

- Step 1
  Right click on your database and select Task -> generate script.

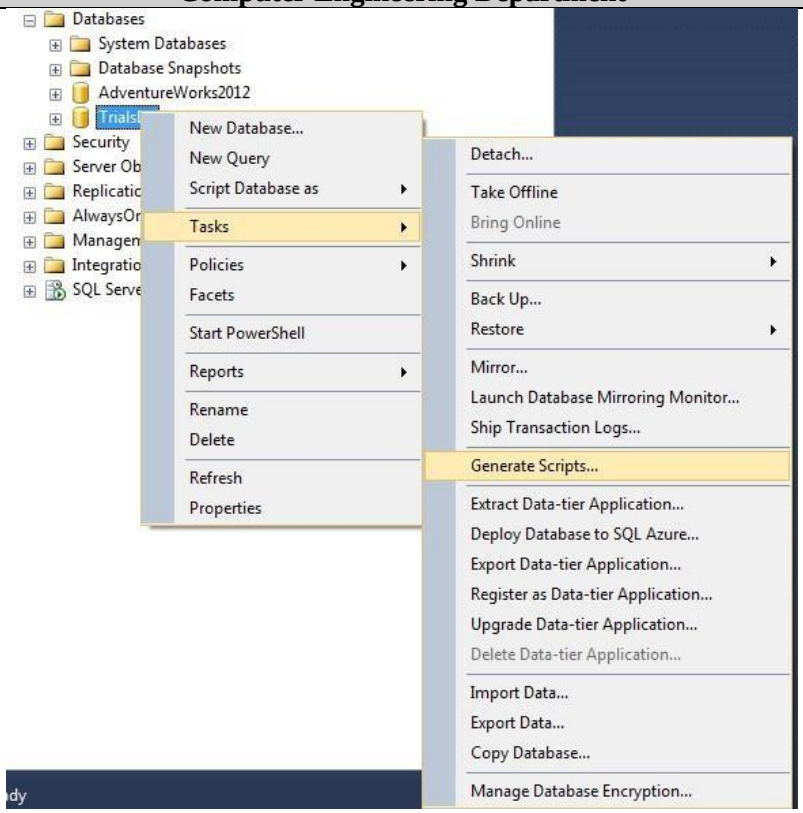

Figure 10

Figure 1 Database_Scripts_With_Data_Select_Option

- Step 2
  Click next in the introduction screen

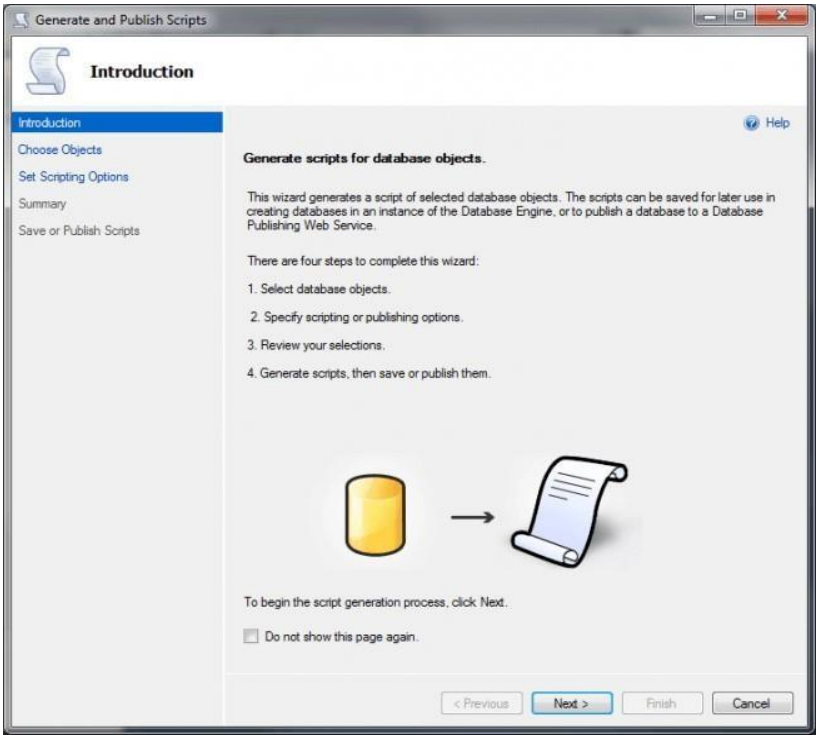

Figure 11 ***Database_Scripts_With_Data_Introduction***

- Step 3

  Select the database object which you are all you need and then click next.

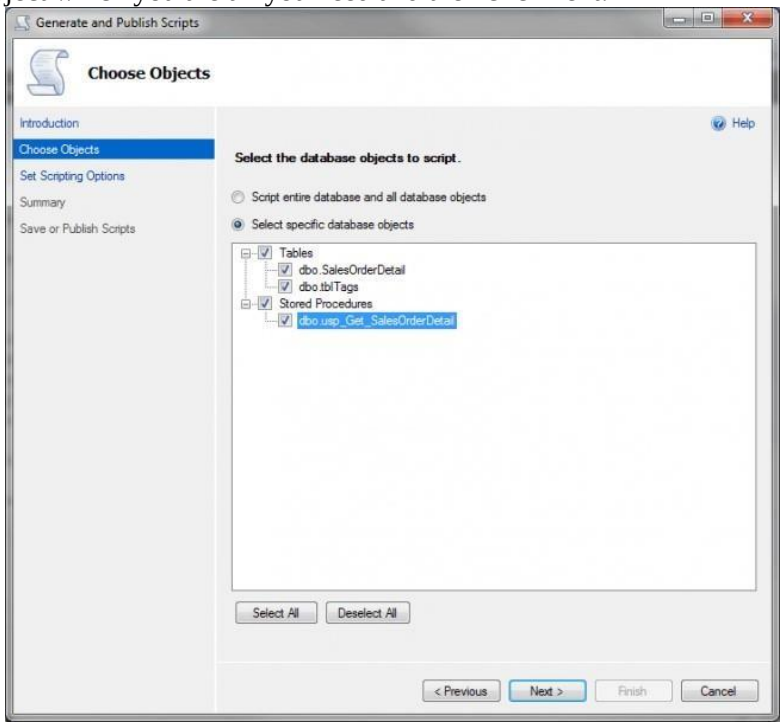

Figure 12

- Step 4

  Now you will be shown a window which asks you about how your script should be published.

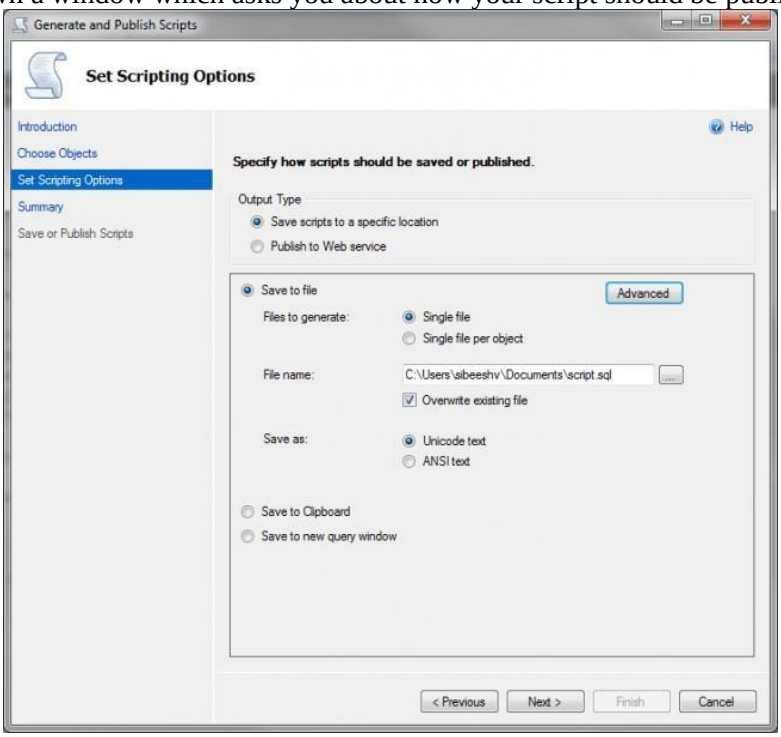

Figure 13 ***Database_Scripts_With_Data_Publish_Options***

Click advanced in that window.

- Step 5

Select 'Schema and data' from type of data to script option and then click OK.

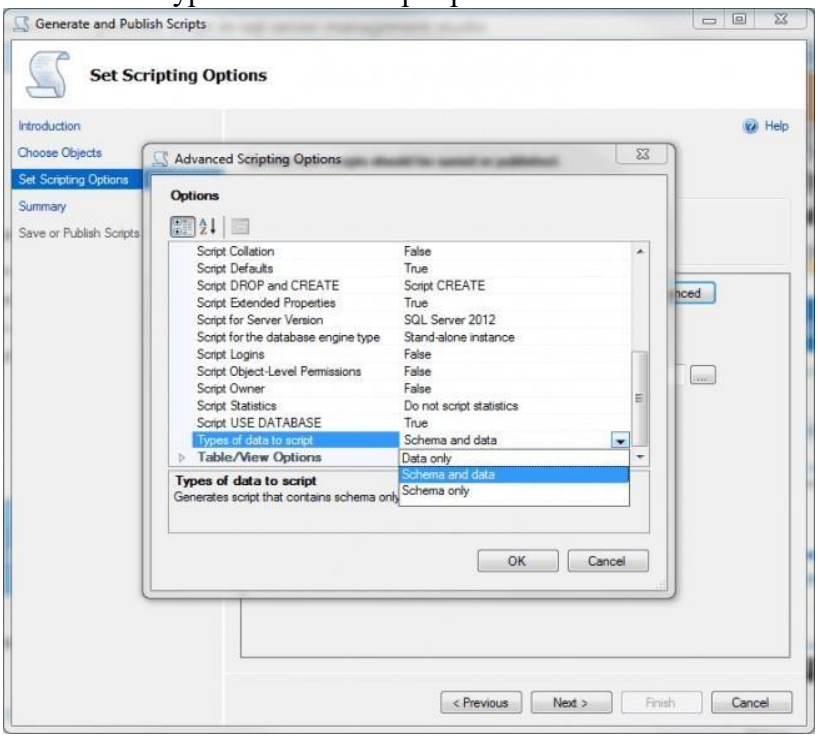

Figure 14 ***Database_Scripts_With_Data_Advanced***

Click next.

- Step 6

  Click finish, now check the script file, it must be having the insert queries too.

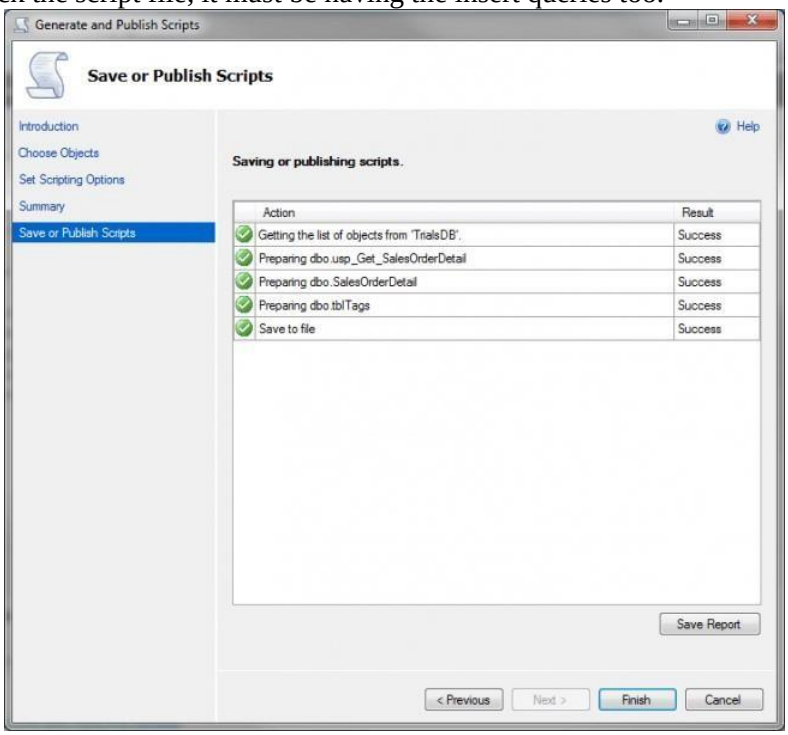

Figure 15 ***Database_Scripts_With_Data_Finish***

Now what else is pending, go ahead and run your script.

Task 1

1. Create a new database named TestDB_2019_CE_X
2. Create a new table named student using some attributes
3. Generate Scripts of your database
4. Restore your schema to another machine
5. Generate scripts of data
6. Restore data to other system as well

Task 2

- Google Cloud Platform (GCP) provides the cloud services for writing queries. Create an account on GCP big query. The steps are as follows
  - Step 1
    Go to the link Google Cloud Platform to create an account on GCP bigquery
  - Step 2
    Click on 'Select a project' button

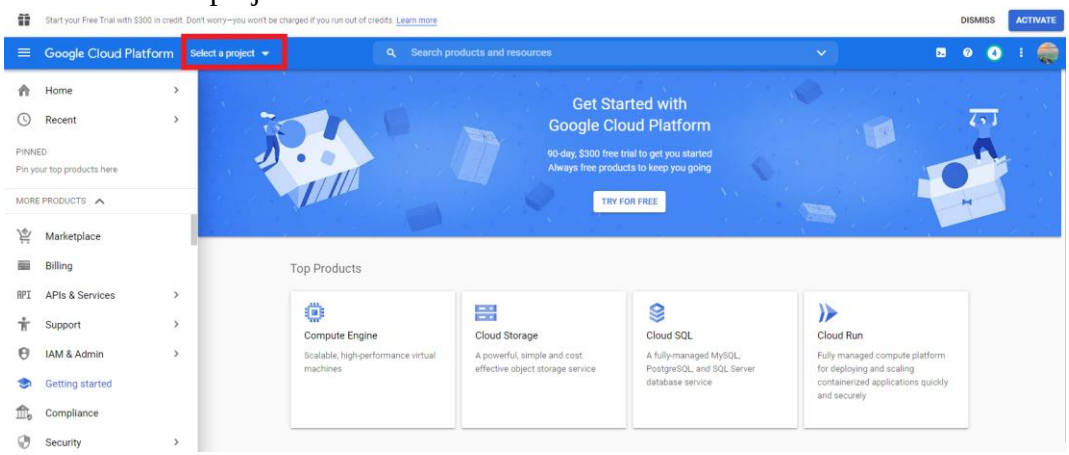

Figure 16

  - Step 3
    Create New Project

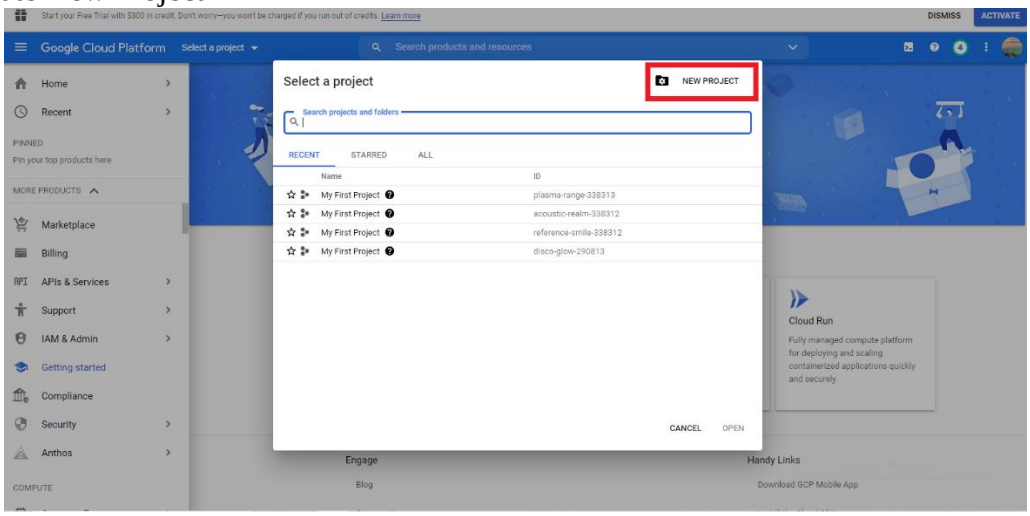

Figure 17

  - Step 4
    Now again click on "Select a project" to choose the created project to work with

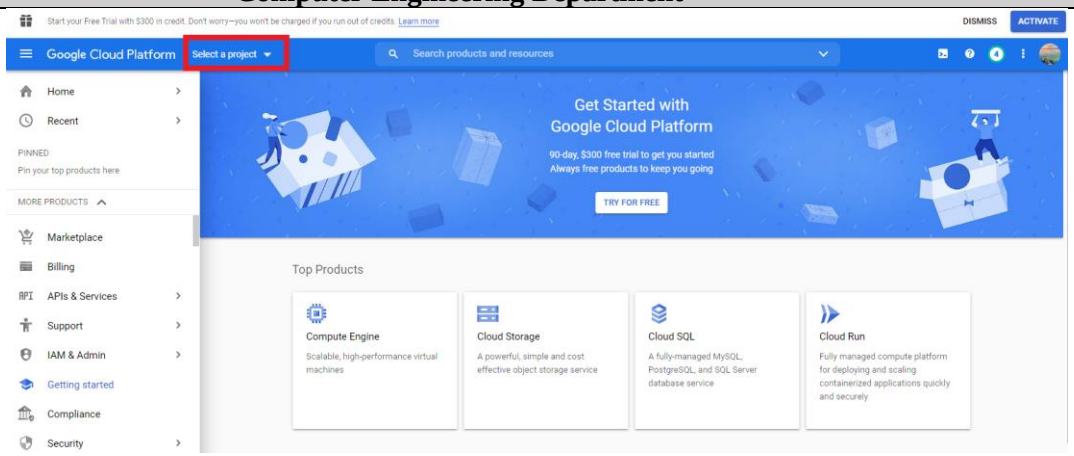

Figure 18

- Step 5
  Select the created project from the project's list

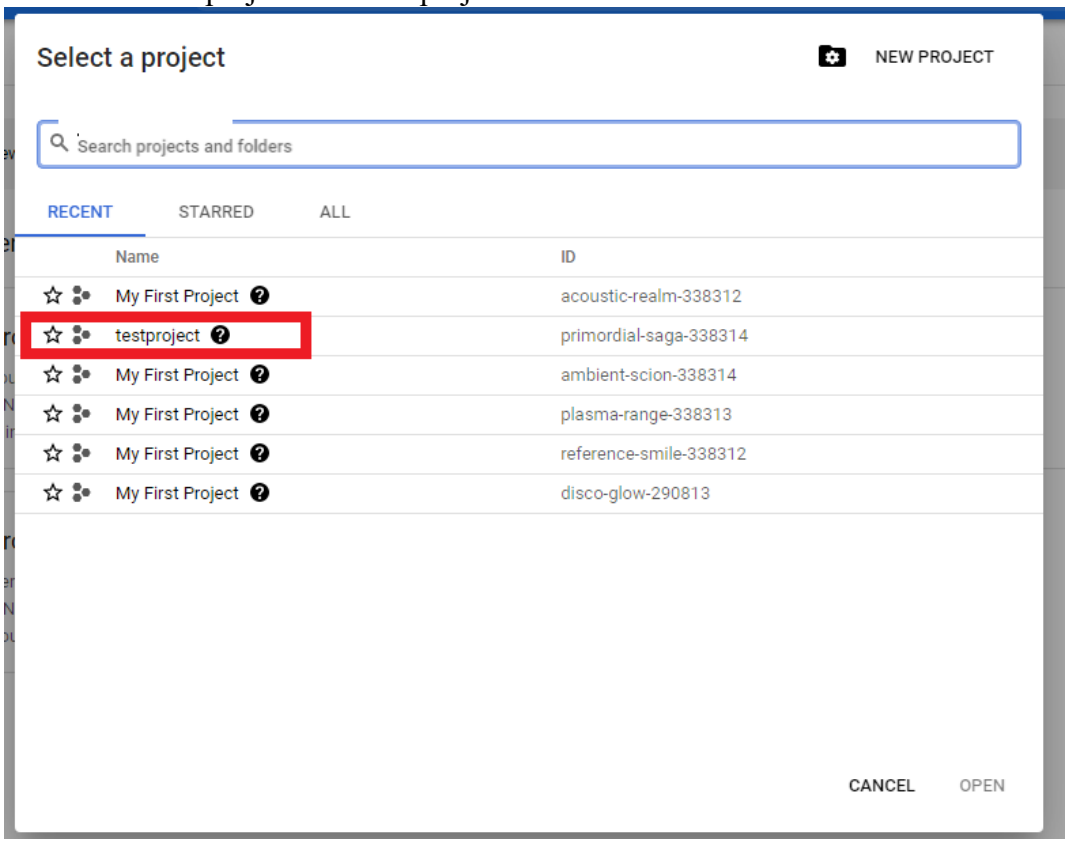

Figure 19

- Step 6
  Click on BigQuery resource

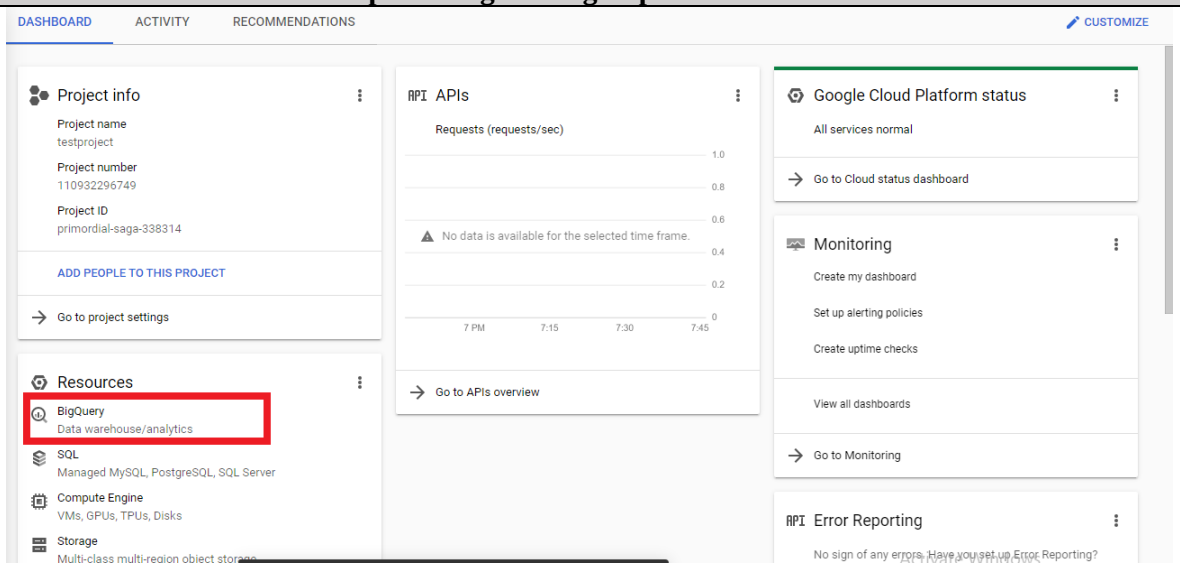

Figure 20

- Step 7
  You may read the available BigQuery guide or click on Done

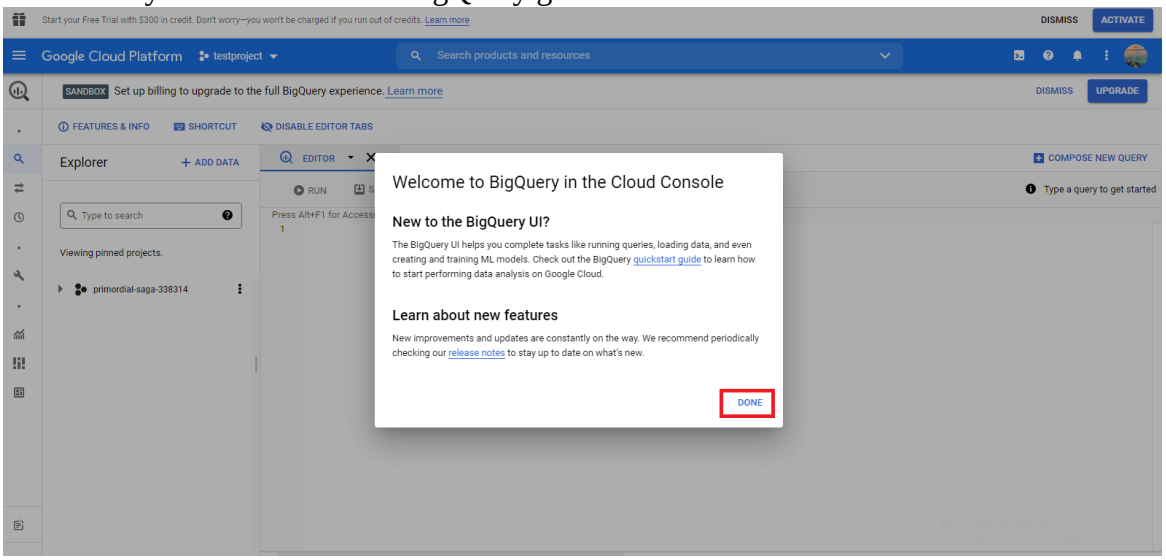

Figure 21

- Step 8
  Here is the workspace overview where you will explore about BigQuery

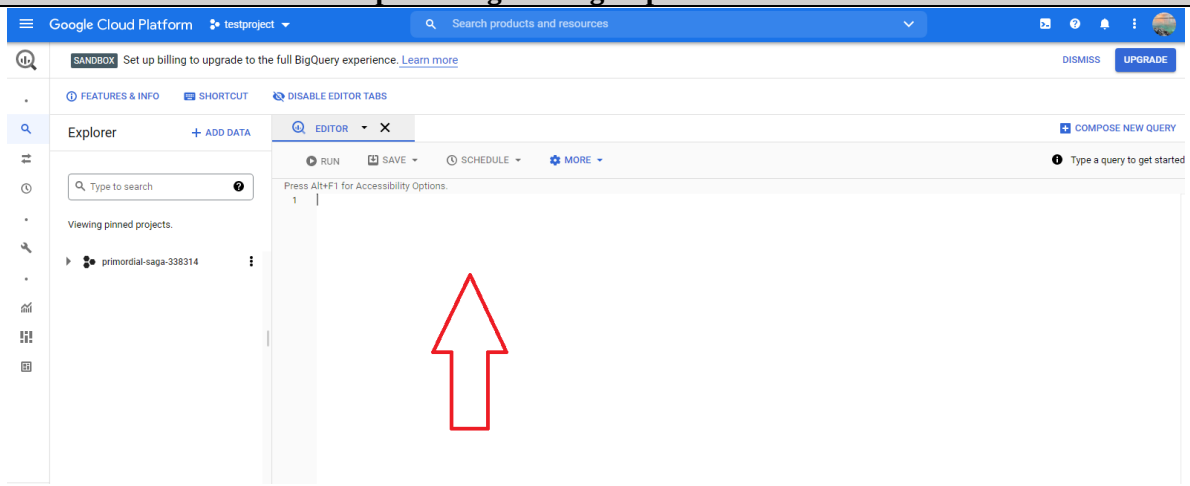

Figure 22

- Explore Bigquery sandbox.
- Explore public datasets
- Explore Github dataset

Homework Questions:

- Write your understanding related to Bigquery and Github dataset in the file GCP_2019_CE_X.docx and submit on google classroom.
- Explore one additional tool for database models, run it on your machine and write your learning experience in a document named as DBtool_2019_CE_X.docx format.

Submission Instructions:

- Submit your homework in .docx files format by Sunday, 23rd January, 2022 9 P.M