Exercise – 9

Due date: Sunday, October 22, 23:55 Hrs.

This is a mandatory assignment. It will count towards "timely submissions of assignments".

The Google Cloud VM runs a MySQL server, and it has a database **stockdata**. This database contains a single Table **nsedata**. You are required to learn SQL commands to perform tasks on this Table (the tasks are listed later in this document).

Resources for learning SQL

- https://www.mysqltutorial.org/mysql-basics/
- https://www.educative.io/blog/mysql-tutorial
- https://www.w3schools.com/mysql/default.asp
- https://www.w3schools.com/mysql/mysql_examples.asp

Suggested learning steps

- Browse the above links, especially the first one, to gain a quick understanding of the DML and DDL statements, their syntax, and usage.
- Using ChatGPT prompts generate SQL code for the examples illustrated in the links. Apply this skill, where necessary, to the tasks listed later.

Submission requirements

Your submission should be a single PDF document with the following captured for each task:

1. The statement of the task
2. The SQL statement used to complete the task. If you feel a task is too complex for a single SQL statement, you are free to break it down into sub tasks, and document all of them.
3. The outcome generated by the SQL statements. You can capture images of the output / portions of the output from the screen into your document.
4. ChatGPT prompts, if used.

Suggestion: Create a landscape mode document and organize all this in a Table, to make it more comprehensible.

The tasks

Tasks to be performed on the database **stockdata** and table **nsedata** using SQL statements.

1. Do a manual review of the table **nsedata** and describe its contents (no SQL to be executed for this task)
2. Select the database **stockdata** using SQL
3. Get a schema dump of the table **nsedata**
4. Get a count of the total number of records in **nsedata**
5. Get the total count of the records for the month “October 2012”
6. Repeat ‘4’, but only for the stock with symbol “GEOMETRIC”
7. Repeat ‘6’, but only display the first 10 records
8. Totally, how many records of “INFY” does the table contain?

9. Get a listing of the first 10 records of “3IINFOTECH”, but the listing should contain only the following columns: symbol, open, high, low, close, and timestamp
10. Repeat '9', but this time use the results to create a temporary table **t1**
11. Using **t1** find out the following for the column **close**: max, min, mean. standard deviation and variance
12. How will you find out the value of the median?
13. Delete table **t1**
14. Use **nsedata**. Using the GROUP BY functionality of SQL create a table **t2** containing the average value of **close** for each and every symbol in the table. Hint: the table will have the columns: **symbol, average**
15. Create a table **t3** such that it contains the following columns: symbol, open, close, "average of open and close". Fill up this table for the company GEOMETRIC, for the month of October 2012.
16. It is required to create a table **t4** such that it contains the data for two companies **GEOMETRIC** and **TCS**. The columns of this table should be as follows: timestamp, close_tcs, close_geometric. Hint: use JOIN
17. Find out the maximum and minimum difference in the daily closing prices of these two companies.
18. Based on **t4** can you identify those days on which the difference in their closing price was more than the average of the minimum and maximum difference.
19. Based on **nsedata,** create table **t5** such that it contains the average **close** price of each company traded in the month of April 2012. The table should be sorted in descending order of the average close price.
20. Not all companies are traded every day. It is required to create a table that contains a count of the days each company has been traded. The table should be sorted in descending order of the count.

***