Practical 7 – Aggregation

Objectives of this practical

- To retrieve summarized data via aggregate functions
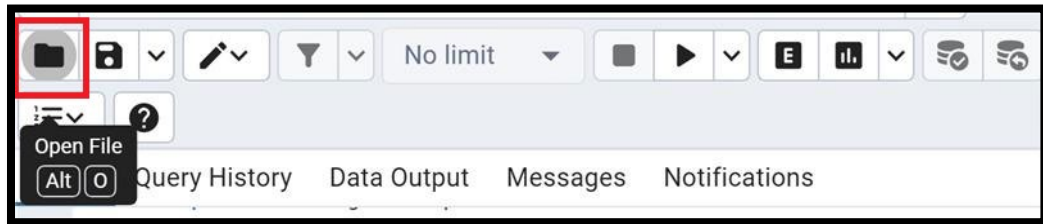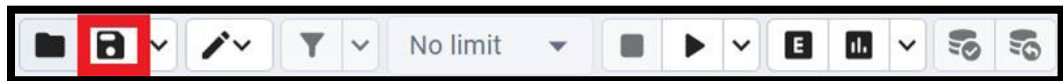
Contents

BrightSpace Submission

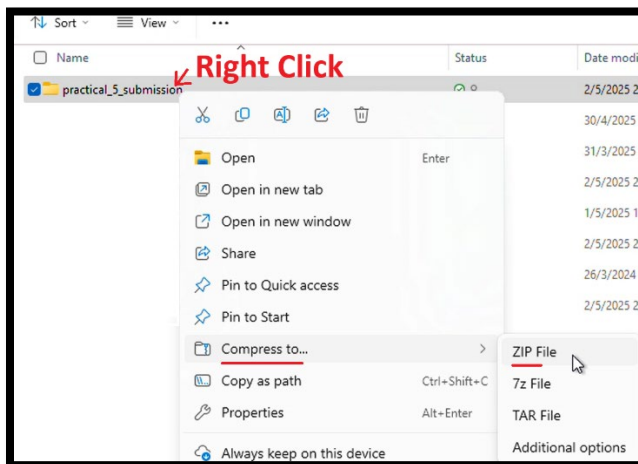You are required to **submit** your answers for the **MCQ Section** & **all parts of Section A Question 1.**

- Download the practical_7_submission.zip from BrightSpace.
- **Unzip** the zip file. There will be a root folder with the necessary files.
- Do **NOT** rename the file's name or file's extension.
- **Use** the files **directly,** do not create copies.
- Fill the answers to the MCQs using the **mcq.xlsx file**.
- Fill the sql query to each question using the provided **.sql files**.
- Input **only one** statement for each .sql file.
  - You can open the .sql file directly in PgAdmin using the Query Tool

  To save the file:

- Upon completion, zip up the **root folder**. (Do not zip at any higher-level folder)

- Submit the zip file on BrightSpace using the submission link.

MCQ Section:

1. Which function returns the number of rows in a table?
   a) SUM()
   b) COUNT()
   c) AVG()
   d) TOTAL()

2. Which function gives the highest value in a column?
   a) MAX()
   b) MIN()
   c) TOP()
   d) HIGHEST()

3. What does SELECT AVG(salary) FROM employees; return?
    a) Total salary
    b) Number of salaries
    c) Minimum salary
    d) Average salary

Section A: Aggregation

Average Function

1.
    a)

Write the SQL statement to find the average lab fee of all courses. Label the output column as 'Mean Lab Fee'.

    Compare how the outputs are different between
    1. leaving the null values as is
    2. handling the null values as 0 [Consider COALESCE]

Mean Lab Fee numeric	🔒
1	437.5000000000000000

Mean Lab Fee numeric	🔒
1	291.6666666666666667

    b)

What is the mean of the total fee for all the courses?

    Note:
    - Treat the null values as zero.
    - The total fee of a course is defined as course fee plus lab fee.

Mean Total Fee numeric	🔒
1	1050.0000000000000000

Sum Function

2.
    a)

Write the SQL statement to list following output and derive how the results are computed.

    Note:
    - The column labels

sum(pay) + sum(allowance) numeric	🔒	sum(pay + allowance) numeric	🔒
89130.00		79180.00	

Count Function

3.

a)

How many **full-time** staff are there in the University?

	Number of FT Staff bigint 🔒
1	14

b)

How many courses charge lab fee?

	Number of course with lab fee bigint 🔒
1	4

c)

There are different hourly rates paid out. How many **distinct** ones are there?

	Number of different hourly rate bigint 🔒
1	2

Max/Min Functions

4.

What is the highest and the lowest pay of staff from **School of Computing**?

	Highest Pay in SOC numeric 🔒	Lowest Pay in SOC numeric 🔒
1	7070.00	2000.00