Practical 10 – JOIN

Objectives of this practical

- To query data from multiple tables via JOIN
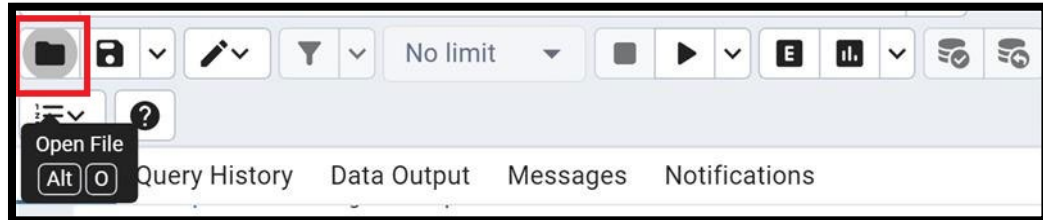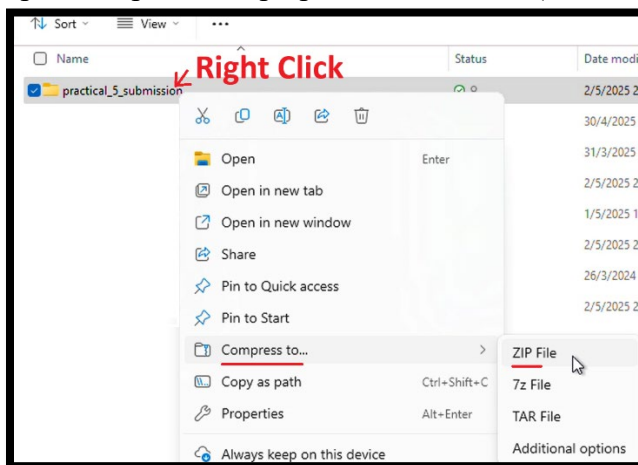
Contents

BrightSpace Submission

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

- Download the practical_10_submission.zip from BrightSpace.
- **Unzip** the zip file. There will be a root folder with the necessary files.
- Fill the answers to the MCQs using the **mcq.xlsx file**.
- Fill the sql query to each question using the provided **.sql files**. (Only one answer for each file)
  - You can open the .sql file directly in PgAdmin using the Query Tool

  - Alternatively, you can open the .sql file with visual studio, paste your answer from the Query Tool and save the .sql 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. What is required to perform a JOIN between two tables?
   a) The same number of columns
   b) A common column or condition
   c) Identical column names
   d) Primary keys in both tables

2. What clause is commonly used to specify the condition for a JOIN?
   a) ON
   b) WHERE
   c) HAVING
   d) USING

3. What is the result of this query?

   ```
   SELECT a.id, b.name
   FROM table_a a
   JOIN table_b b ON a.id = b.a_id;
   ```

a) All rows from both tables
b) Matching rows where a.id = b.a_id
c) Only rows from table_b
d) Rows where id is NULL

Section A: Joining Tables
Joining 2 Tables

1.
a)

List the staff with their dependents and relationship.

	staff_name character varying (100)	dependent_name character varying (30)	relationship character varying (20)
1	Charles	Yan Chin	Daughter
2	Charles	Xiu Mei	Wife
3	Charles	Yang Xi	Son
4	Dawn	Min Li	Wife
5	Edison	Candice	Wife
6	Edison	Mei Mei	Daughter
7	Edison	Pamela	Daughter
8	Gideon	Judith	Wife
9	Lionel	Nelson	Son
10	Jason	Felicia	Wife
11	Jason	Jamie	Daughter
12	Jason	Janet	Daughter
13	Jason	Janny	Daughter
14	Jason	Jerome	Son
15	Jason	Judith	Daughter
16	Andy	Jamie	Wife
17	Edwin	Mark	Son
18	Edwin	Shyna	Wife
19	Ruth	Mike	Husband

b)

List the department name, "Course Name" and "Total Semester Fee" (course fee plus lab fee) sorted by ascending order of department name and descending order of total semester fee.

	dept_name character varying (100)	Course Name character varying (100)	Total Semester Fee numeric
1	School of Business	Diploma in Financial Informatics	800.00
2	School of Business	Diploma in Business Administration	500.00
3	School of Computing	Diploma in Applied AI and Analytics	1900.00
4	School of Computing	Diploma in Cybersecurity	1200.00
5	School of Computing	Diploma in Information Technology	1100.00
6	School of Computing	Diploma in Business and Information Technology	800.00

Joining 3 or More Tables

2.

a)

> List the "Module Name" with their pre-requisite modules as "Pre-Requisite ModuleName". Sort the result in ascending order of the module name and the name of its pre-requisite module.

	Module Name character varying (100) 🔒	Pre-Requisite ModuleName character varying (100) 🔒
1	Accounting Informatics Project	Accounting Information System
2	Accounting Information System	Database Management System
3	Accounting Information System	Java Programming
4	Accounting Information System	Software Development Technique
5	Customer Relationship Managem...	Database Management System
6	Data Mining	Database Management System
7	Software Application Development	Java Programming
8	Software Application Development	Network Fundamentals
9	Software Application Development	Software Development Technique
10	Software Application Development	Web Client Development
11	Software Development Technique	Database Management System

b)

> List the name of department, course, student, and the age of student as "Age of Student". Sort the result in descending order of age of student within ascending order of course name within ascending order of department name.

	dept_name character varying (100) 🔒	crse_name character varying (100) 🔒	stud_name character varying (30) 🔒	Age of Student numeric 🔒
1	School of Business	Diploma in Financial Informatics	Derrick	18
2	School of Business	Diploma in Financial Informatics	Denise	18
3	School of Business	Diploma in Financial Informatics	Joshua	18
4	School of Computing	Diploma in Applied AI and Analytics	Adeline	19
5	School of Computing	Diploma in Applied AI and Analytics	Keith	18
6	School of Computing	Diploma in Applied AI and Analytics	Heidi	18
7	School of Computing	Diploma in Business and Information Technology	Anita	19
8	School of Computing	Diploma in Cybersecurity	Peter	19
9	School of Computing	Diploma in Cybersecurity	Peter	19
10	School of Computing	Diploma in Information Technology	Mike	19
11	School of Computing	Diploma in Information Technology	Janice	18

c)

> List the names of staff alongside his/her supervisor.

(Hint: self-join)

	staff_name character varying (100) 🔒	Supervisor character varying (100) 🔒
1	Edwin	Andy
2	Apple	Anita
3	Charles	Anita
4	Edison	Apple
5	Dawn	Apple
6	Ruth	Bruce
7	Eleanor	Dawn
8	Titus	Dawn
9	Derrick	Edison
10	Florence	Edison
11	Gideon	Fann
12	Andy	Gideon
13	Lionel	Gideon
14	Jason	Lionel
15	Lee	Lionel
16	Anita	Ruth
17	Fann	Ruth

Section B: Group with Join Query

3.

a)

List the number of staff by department name, ordered in descending order of number of staff.
[In this question, the number of staff refers to the number of records in the staff table for each department, not the no_of_staff column in the department table]

	dept_name character varying (100) 🔒	number of staff bigint 🔒
1	School of Computing	9
2	School of Business	7
3	Principal's office	1
4	Deputy Principal's Office	1