

LAB REPORT

CSE312: Database Management System Lab

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| 04 [Report Number] |

**Topic:** **Implementing Subqueries and Set Operations in SQL**

Submitted To

Shadman Rabby (SHR)

Lecturer

Department of CSE, Daffodil International University

Submitted By

Student ID: 221-15-5261

Section: 61\_J2

Student Name: Munna Biswas

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| Experiment No: 04 | Mapping: CO1 and CO2 |
| Experiment Name | Implementing Subqueries and Set Operations in SQL |

**Experiment Details**

**Objective**

* To demonstrate the use of subqueries and set operations in SQL for efficient data manipulation and extraction.

**Equipment**

* DBMS Tool: MySQL Workbench or any equivalent SQL platform.
* Sample Database Schema:
  + ***Products*** *(ProductID, ProductName, Price,y)*
  + ***Orders*** *(OrderID, ProductID, Quantity,* *ProductID)*
  + ***Suppliers*** *(SupplierID, SupplierName)*
  + ***Supplies*** *(SupplierID, ProductID)*

**Database Schema and Table Creation Code:**

A screenshot of a computer code

Description automatically generated

A screenshot of a computer code

Description automatically generated

A screenshot of a computer code

Description automatically generated

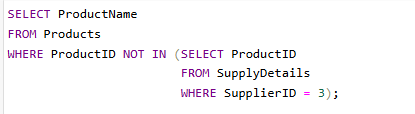
**SQL Code:**

**Find the Second Most Expensive Product:**A white background with black dots

Description automatically generated

**Output:**



**Find All Products Supplied by Both 'Supplier A' and 'Supplier B':** 

**Output**:

A screenshot of a computer

Description automatically generated

**Find Orders That Were Placed for Products Supplied by 'Supplier B':** A screenshot of a computer screen

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**Output**:

A close up of a number

Description automatically generated

**List All Suppliers Who Have Supplied Furniture Products:**

A screenshot of a computer

Description automatically generated

**Output**:

A screenshot of a computer

Description automatically generated

**Alternative Steps/Solution (If any):**

* Use of advanced indexing techniques for optimizing queries.
* Replace subqueries with joins where possible for better performance in large datasets.

**Observation/ Comments:**

* Subqueries provide a modular approach to query construction and simplify complex relational queries.
* Set operations like INTERSECT and EXCEPT help filter and compare datasets effectively.
* Proper schema design is essential to ensure accurate and efficient query execution.

**Appendix**

Course Outcomes, Complex Engineering Problems (EP), and Complex Engineering Activities (EA) Addressing.

**COs Mapped:**

* **CO1:** Demonstrate the use of subqueries in solving relational data challenges.
* **CO2:** Apply set operations for relational data analysis and optimization.

Engineering Problem: EP1, EP2