**EXPERIMENT - 8**

**Aim:** Study, write, and use the set operations, sub-queries, correlated sub-queries in SQL.

**Introduction:**

**UNION:**

* The SQL Union operation is used to combine the result of two or more SQL SELECT queries.
* In the union operation, all the number of datatype and columns must be same in both the tables on which UNION operation is being applied.
* The union operation eliminates the duplicate rows from its resultset.

**INTERSECT**

* It is used to combine two SELECT statements. The Intersect operation returns the common rows from both the SELECT statements.
* In the Intersect operation, the number of datatype and columns must be the same.
* It has no duplicates and it arranges the data in ascending order by default.

**MINUS:**

* It combines the result of two SELECT statements. Minus operator is used to display the rows which are present in the first query but absent in the second query.
* It has no duplicates and data arranged in ascending order by default.

**Examples:**

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| **Set Operations** | **Ishan** | **Khush** | **Alister** |
| UNION | List the info about the items and also the sensors of the items that have been analyzed.  **SELECT** sensor\_id, g\_id  **FROM** analysis\_gdata  **UNION**  **SELECT** sensor\_id item\_id  **FROM**  analysis\_sdata; |  |  |
| INTERSECT | List all sensors that are currently occupied by the front  **SELECT** sensor\_id, loaction\_spot  **FROM** front  **INTERSECT**  **SELECT** sensor\_id,loction\_spot  **FROM**  sensors |  |  |
| MINUS | **SELECT** item\_id **FROM** shopping\_list where list\_id **IS NOT NULL**  **MINUS**  **SELECT** item\_id **FROM** analysis\_sdata |  |  |

**SUBQUERIES:**

A subquery is a query that is nested inside a SELECT , INSERT , UPDATE , or DELETE statement, or inside another subquery. A subquery can be used anywhere an expression is allowed.

**CORRELATED SUBQUERIES:**

Correlated Subqueries are used to select data from a table referenced in the outer query. The subquery is known as a correlated because the subquery is related to the outer query. In this type of query, a table alias (also called a correlation name) must be used to specify which table reference is to be used.

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| **Query** | **Ishan** | **Khush** | **Alister** |
| Co-related | **Show the prices of the third most expensive item bought by the customers.**  **SELECT** item\_cost\_in\_rupees  **FROM** shopping\_lists **AS** S  **WHERE** 2 =  (  **SELECT COUNT**((item\_cost\_in\_rupees))**DISTINCT**  **FROM** shopping\_lists **AS** T  **WHERE** T.item\_cost\_in\_rupees>S.item\_cost\_in\_rupees  ) |  |  |
| Subquery | **List sensor\_id and sensor\_status of the sensors that have the same location.**  **SELECT** sensor\_id,sensor\_status  **FROM** senors  **WHERE** sensor\_id IN  (  **SELECT** A.sensor\_ID **AS** sensorid1, B.sensor\_ID AS sensorid2, A.location\_spot  **FROM** sensors A, sensors B  **WHERE** A.sensor\_id <> B.sensor\_id  **AND** A.location\_spot = B.location\_spot  **ORDER BY** A.location\_spot;  ) |  |  |