



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
DEHRADUN

DATABASE SYSTEMS LAB

LAB 5

SQL Constraints

MTECH-COMPUTER SCIENCE
ENGINEERING
CYBER SECURITY AND FORENSICS

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Title : To understand and use SQL Sub-Query

Objective: To understand the use of sql subquery.

TASK 1: Create the following table. Supplier-(scode,sname,scity,turnover)
Part-(pcode,weigh,color,cost,sellingprice) Supplier_Part-(scode,pcode,qty)

```
1  -- EXPERIMENT-5: SQL SUB-QUERY IMPLEMENTATION
2  -- Author: Jigesh Sheoran
3
4  DROP DATABASE IF EXISTS Lab5DB;
5  CREATE DATABASE Lab5DB;
6  USE Lab5DB;
7  SHOW DATABASES;
8
9  CREATE TABLE Supplier (
10     scode VARCHAR(10) PRIMARY KEY,
11     sname VARCHAR(30) NOT NULL,
12     scity VARCHAR(30),
13     turnover INT
14 );
15
16 CREATE TABLE Part (
17     pcode VARCHAR(10) PRIMARY KEY,
18     weigh INT,
19     color VARCHAR(10),
20     cost DECIMAL(10,2),
21     sellingprice DECIMAL(10,2)
22 );
23
24 CREATE TABLE Supplier_Part (
25     scode VARCHAR(10),
26     pcode VARCHAR(10),
27     qty INT,
28     PRIMARY KEY (scode,pcode),
29     FOREIGN KEY (scode) REFERENCES Supplier(scode),
30     FOREIGN KEY (pcode) REFERENCES Part(pcode)
31 );
```

TASK 2: Populate the table

```

32
33 • INSERT INTO Supplier VALUES
34   ('S101', 'Sheoran & Sons', 'Bombay', '10000000'),
35   ('S102', 'Hindustan Motors', 'Ahemdabad', '5000000'),
36   ('S103', 'KPMG', 'Abu Dhabi', '7500000'),
37   ('S104', 'Deloitte', 'London', '15000000'),
38   ('S105', 'Oracle', 'New Jersey', '700000000');
39
40 • INSERT INTO Part VALUES
41   ('P101', '25', 'Green', '75', '999'),
42   ('P102', '32', 'Blue', '25', '2199'),
43   ('P103', '78', 'Yellow', '49', '1199'),
44   ('P104', '55', 'Pink', '61', '599'),
45   ('P105', '60', 'White', '80', '1499');
46
47
48 • INSERT INTO Supplier_Part VALUES
49   ('S101', 'P101', '145'),
50   ('S102', 'P102', '89'),
51   ('S103', 'P103', '602'),
52   ('S104', 'P104', '321'),
53   ('S105', 'P105', '11'),
54   ('S103', 'P105', '91');
55

```

TASK 3: Write appropriate SQL Statement for the following:

1. Get the supplier number and part number in ascending order of supplier number

```

55
56 • SELECT scode, pcode
57   FROM Supplier_Part
58   ORDER BY scode ASC;
59

```

60

100% 20:58

Result Grid Filter Rows: Search Edit:

| | scode | pcode |
|--|-------|-------|
| | S101 | P101 |
| | S102 | P102 |
| | S103 | P103 |
| | S103 | P105 |
| | S104 | P104 |
| | S105 | P105 |
| | NULL | NULL |

2. Get the details of supplier who operate from Bombay with turnover 50.

```

56 SELECT *
57 FROM Supplier
58 WHERE scity = 'Bombay' AND turnover = 50;

```

100% 24:50

Result Grid Filter Rows: Search Edit: Export/Import:

| scode | sname | scity | turnover |
|-------|-------|-------|----------|
| NULL | NULL | NULL | NULL |

Result 8 Supplier 9

Action Output

| | Time | Action | Response |
|----|----------|---|-------------------|
| 54 | 20:59:12 | SELECT * FROM Supplier WHERE scity = 'Bombay' AND turnover = 50 LIMIT 0, 1000 | 0 row(s) returned |

Query returned NULL because we have a supplier who operate from bombay but turnover is not 50. To get a valid result we can modify our query in two ways.

Method a:

```

56 SELECT *
57 FROM Supplier
58 WHERE scity = 'Bombay' AND turnover = 10000000;

```

100% 48:58

Result Grid Filter Rows: Search Edit: Export/Import:

| scode | sname | scity | turnover |
|-------|----------------|--------|----------|
| S101 | Sheoran & Sons | Bombay | 10000000 |

Method b:

```

56 SELECT *
57 FROM Supplier
58 WHERE scity = 'Bombay' ;

```

100% 25:58

Result Grid Filter Rows: Search Edit: Export/Import:

| scode | sname | scity | turnover |
|-------|----------------|--------|----------|
| S101 | Sheoran & Sons | Bombay | 10000000 |

3. Get the total number of supplier.

| | |
|--|--------------------------|
| 56 | SELECT COUNT(*) AS total |
| 57 | FROM Supplier; |
| 100% | 24:50 |
| Result Grid | |
| total | |
| 5 | |
| Result 20 | Result 21 |
| Action Output | |
| | Time |
| 120 | 21:06:29 |
| SELECT COUNT(*) AS total FROM Supplier LIMIT 0, 1000 | |
| Response | |
| 1 row(s) returned | |

4. Get the part number weighing between 25 and 35.

| | |
|--|--------------------------------|
| 56 | SELECT pcode |
| 57 | FROM Part |
| 58 | WHERE weigh BETWEEN 25 AND 35; |
| 100% | 31:58 |
| Result Grid | |
| pcode | |
| P101 | |
| P102 | |
| NULL | |
| Result 22 | Part 23 |
| Action Output | |
| | Time |
| 131 | 21:07:49 |
| SELECT pcode FROM Part WHERE weigh BETWEEN 25 AND 35 LIMIT 0, 1000 | |
| Response | |
| 2 row(s) returned | |

5. Get the supplier number whose turnover is null.

| | |
|---|-------------------------|
| 56 | SELECT sname |
| 57 | FROM Supplier |
| 58 | WHERE turnover IS NULL; |
| 100% | 24:58 |
| Result Grid | |
| sname | |
| | |
| Result 24 | Supplier 25 |
| Action Output | |
| | Time |
| 142 | 21:10:56 |
| SELECT sname FROM Supplier WHERE turnover IS NULL LIMIT 0, 1000 | |
| Response | |
| 0 row(s) returned | |

6. Get the part number that cost 20, 30 or 40 rupees.

```

56 SELECT pcode
57 FROM Part
58 WHERE cost IN (20, 30, 40);

```

100% 28:58

Result Grid Filter Rows: Search Edit: Export/Import:

| pcode |
|-------|
| P102 |

Result 27 Part 28

Action Output

| | Time | Action | Response |
|-------|----------|---|-------------------|
| ✓ 163 | 21:14:15 | SELECT pcode FROM Part WHERE cost IN (20, 30, 40) LIMIT 0, 1000 | 1 row(s) returned |

7. Get the total quantity of part 2 that is supplied.

```

56 SELECT SUM(qty)
57 FROM Supplier_Part
58 WHERE pcode = 'P102';

```

100% 25:51

Result Grid Filter Rows: Search Export:

| SUM(qty) |
|----------|
| 89 |

Result 29 Result 30

Action Output

| | Time | Action | Response |
|-------|----------|---|-------------------|
| ✓ 174 | 21:16:06 | SELECT SUM(qty) FROM Supplier_Part WHERE pcode = 'P102' LIMIT 0, 1000 | 1 row(s) returned |

8. Get the name of the supplier who supplies part 2.

```

56 SELECT sname
57 FROM Supplier
58 WHERE scode IN (SELECT scode FROM Supplier_Part WHERE pcode = 'P102');
59

```

100% 1:59

Result Grid Filter Rows: Search Export: Resets all sorted columns

| sname |
|------------------|
| Hindustan Motors |

Result 32 Supplier 33

Action Output

| | Time | Action | Response |
|-------|----------|---|-------------------|
| ✓ 196 | 21:19:45 | SELECT sname FROM Supplier WHERE scode IN (SELECT scode FROM Supplier_Part WHERE pcode = 'P102') LIMIT... | 1 row(s) returned |

9. Get the part number whose cost is greater than the average cost.

```

56 SELECT pcode
57 FROM Part
58 WHERE cost > (SELECT AVG(cost) FROM Part);

```

100% 11:35

Result Grid Filter Rows: Search Edit: Export/Import:

| pcode |
|-------|
| P101 |
| P104 |
| P105 |
| NULL |

Result 34 Part 35

Action Output

| | Time | Action | Response |
|-------|----------|--|-------------------|
| ✓ 207 | 21:21:08 | SELECT pcode FROM Part WHERE cost > (SELECT AVG(cost) FROM Part) LIMIT 0, 1000 | 3 row(s) returned |

10. Get the supplier number and turnover in descending order of turnover.

```

56 SELECT scode, turnover
57 FROM Supplier
58 ORDER BY turnover DESC;
59

```

100% 24:58

Result Grid Filter Rows: Search Edit: Export/Import:

| scode | turnover |
|-------|-----------|
| S105 | 700000000 |
| S104 | 150000000 |
| S101 | 100000000 |
| S103 | 75000000 |
| S102 | 50000000 |
| NULL | NULL |

Result 36 Supplier 37

Action Output

| | Time | Action | Response |
|-------|----------|---|-------------------|
| ✓ 218 | 21:22:25 | SELECT scode, turnover FROM Supplier ORDER BY turnover DESC LIMIT 0, 1000 | 5 row(s) returned |

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