



# ABES Engineering College, Ghaziabad

Department of Computer Science & Engineering

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Subject Code: NCS-502

Subject Name: DBMS

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## Assignment 1: SQL Queries using Various Operators

### A. Queries based on Conditional Retrieval of Rows

1. List department names and location from the department table.

```
mysql> Select Dname,Location from Dept;
+-----+-----+
| Dname | Location |
+-----+-----+
| CS    | Aryabhatta |
| IT    | Bhabha    |
| EC    | Bhabha    |
| ME    | Vishvkarma |
| CE    | Ramanajun |
+-----+-----+
5 rows in set (0.00 sec)
```

2. List the employees belonging to the department 20.

```
mysql> select * from emp where Dno=20;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SSN | Fname | Mname | Lname | Address | DOJ | DOB | Mgrssn | salary | Gender | Designation | Dno |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 7521 | Akshat | NULL | Kansal | Sector-2 noida | 2016-04-03 | 1993-02-24 | NULL | 400000.00 | m | Manager | 20 |
| 7786 | rishab | Kumar | Gupta | sector-05 noida | 1979-12-03 | 1947-09-30 | 7369 | 880.00 | m | Clerk | 20 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> _
```

3. List the name and salary of the employees whose salary is more than 1000.

```
mysql> Select CONCAT(FNAME, ' ', LNAME) as Name, salary from emp where salary>1000;
+-----+-----+
| Name | salary |
+-----+-----+
| Akansha Goel | 500000.00 |
| Akshat Kansal | 400000.00 |
| Ritu Goel | 99000.00 |
| Somya Kansal | 88000.00 |
| NULL | 20000.00 |
| Abhilasha Bhardwaj | 23440.00 |
+-----+-----+
6 rows in set (0.00 sec)

mysql> _
```

4. List the employee number and name of managers.

```
mysql> select ssn,mgrssn from emp;
+-----+-----+
| ssn | mgrssn |
+-----+-----+
| 7369 | 7788 |
| 7521 | NULL |
| 7588 | NULL |
| 7788 | 7521 |
| 7786 | 7369 |
| 7788 | 7369 |
| 7839 | 7521 |
| 7934 | 7369 |
+-----+-----+
8 rows in set (0.00 sec)

mysql> _
```

5. List the name of clerks working in the department 20.

```
mysql> select Fname from emp where dno=20 and designation='Clerk';
+-----+
| Fname |
+-----+
| rishab |
+-----+
1 row in set (0.00 sec)
```

6. List the names of analysts and salesmen.

```
mysql> select fname from emp where designation='Analyst' or designation='Salesmen';
+-----+
| fname |
+-----+
| Ritu |
| Somya |
| Priyanka |
+-----+
3 rows in set (0.00 sec)
```

7. List the details of the employees who have joined before the end of September 1981.

```
mysql> select * from emp where DOJ < '1981-9-30';
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SSN | Fname | Mname | Lname | Address | DOJ | DOB | Mgrssn | salary | Gender | Designation | Dno |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 7786 | rishab | Kumar | Gupta | sector-05 noida | 1979-12-03 | 1947-09-30 | 7369 | 880.00 | m | Clerk | 20 |
| 7788 | Naveen | NULL | Goyal | sector-21 noida | 1979-02-07 | 1947-08-17 | 7369 | 999.00 | m | Clerk | 50 |
| 7839 | Priyanka | NULL | NULL | sector-3 noida | 1980-02-23 | 1967-08-06 | 7521 | 20000.00 | f | Analyst | 30 |
| 7934 | Abhilasha | NULL | Bhardwaj | sector-23 noida | 1979-02-13 | 1957-08-07 | 7369 | 23440.00 | f | Salesman | 40 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

8. List the names of employees who are not managers.

```
mysql> Select Concat(Fname,' ',Lname) as name from emp where designation!='Manager';
+-----+
| name |
+-----+
| Ritu Goel |
| Somya Kansal |
| rishab Gupta |
| Naveen Goyal |
| NULL |
| Abhilasha Bhardwaj |
+-----+
6 rows in set (0.00 sec)
```

## B. Special Operators IN and BETWEEN

1. List the name of the employee whose employee numbers are 7369,7521,7839,7934, 7788.

```
mysql> Select Concat(Fname,' ',Lname) as name from emp where ssn in(7369,7521,7839,7934, 7788);
+-----+
| name |
+-----+
| Akansha Goel |
| Akshat Kansal |
| Naveen Goyal |
| NULL |
| Abhilasha Bhardwaj |
+-----+
5 rows in set (0.04 sec)

mysql>
```

2. List the employee details not belonging to the department 10,30 and 40.

```
mysql> Select * from emp where Dno Not in (10,30,40);
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SSN | Fname | Mname | Lname | Address | DOJ | DOB | Mgrssn | salary | Gender | Designation | Dno |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 7521 | Akshat | NULL | Kansal | Sector-2 noida | 2016-04-03 | 1993-02-24 | NULL | 400000.00 | m | Manager | 20 |
| 7786 | rishab | Kumar | Gupta | sector-05 noida | 1979-12-03 | 1947-09-30 | 7369 | 880.00 | m | Clerk | 20 |
| 7788 | Naveen | NULL | Goyal | sector-21 noida | 1979-02-07 | 1947-08-17 | 7369 | 999.00 | m | Clerk | 50 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.02 sec)
```

3. List the employee name and salary , whose salary is between 500 and 2000.

```
mysql> Select Concat(Fname,' ',Lname) as name ,salary from emp where salary between 500 and 2000;
+-----+-----+
| name | salary |
+-----+-----+
| rishab Gupta | 880.00 |
| Naveen Goyal | 999.00 |
+-----+-----+
2 rows in set (0.00 sec)
```

4. List employee names, who have joined before 30<sup>th</sup> june 81 and after December 81.

```
mysql> Select Concat(Fname,' ',Lname) as name from emp where DOJ not between 1981-6-30 and 1981-12-31;
+-----+
| name |
+-----+
| Akansha Goel |
| Akshat Kansal |
| Ritu Goel |
| Somya Kansal |
| rishab Gupta |
| Naveen Goyal |
| NULL |
| Abhilasha Bhardwaj |
+-----+
8 rows in set, 2 warnings (0.00 sec)
```

## C. DISTINCT Clause with SELECT

1. List the different jobs (designations) available in the emp table.

```
mysql> Select distinct Designation from emp;
+-----+
| Designation |
+-----+
| Manager     |
| Analyst     |
| Salesmen    |
| Clerk       |
| Salesmes    |
+-----+
5 rows in set (0.03 sec)
```

#### D. Working with NULL Values

1. List the employee names, who are not eligible for commission.

```
mysql> select Concat(Fname, ' ', Lname) from emp where commission is NULL;
+-----+
| Concat(Fname, ' ', Lname) |
+-----+
| Rishab Gupta              |
| Naveen Goyal              |
+-----+
2 rows in set (0.00 sec)
```

2. List the name of the employees and designation (job) of the employee, who does not report to anybody (manager is NULL).

```
mysql> Select Concat(Fname, ' ', Lname) as name, Designation from emp where mgrssn is NULL;
+-----+-----+
| name           | Designation |
+-----+-----+
| Akshat Kansal | Manager     |
| Ritu Goel     | Analyst     |
+-----+-----+
2 rows in set (0.00 sec)
```

3. List the employees not assigned to any department.

```
mysql> Select * from emp where Dno is NULL;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SSN | Fname | Mname | Lname | Address | DOJ | DOB | Mgrssn | salary | Gender | Designation | Dno |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 7934 | Abhilasha | NULL | Bhardwaj | sector-23 noida | 1979-02-13 | 1957-08-07 | 7369 | 23440.00 | f | Salesmes | NULL |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

4. List the employees who are eligible for commission.

```
mysql> select Concat(Fname, ' ', Lname) from emp where commission is not NULL;
+-----+
| Concat(Fname, ' ', Lname) |
+-----+
| Akansha Goel              |
| Akshat Kansal             |
| Ritu Goel                  |
| Somya Kansal               |
| NULL                       |
| Abhilasha Bhardwaj         |
+-----+
6 rows in set (0.00 sec)
```

5. List the details of employees, whose salary is greater than 2000 and commission is NULL.

```
mysql> select * from emp where salary > 2000 and commission is NULL;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SSN | Fname | Mname | Lname | Address | DOJ | DOB | Mgrssn | salary | Gender | Designation | Dno | Commission |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 7934 | Abhilasha | NULL | Bhardwaj | sector-23 noida | 1979-02-13 | 1957-08-07 | 7369 | 23440.00 | f | Salesmes | NULL | NULL |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

#### E. Matching Pattern with Column

1. List the employees whose names start with an "S".

```
mysql> select * from emp where fname like 'S%';
```

SSN	Fname	Mname	Lname	Address	DOJ	DOB	Mgrssn	salary	Gender	Designation	Dno
7780	Somya	Kumar	Kansal	sector-01 noida	1989-12-03	1967-09-30	7521	880000.00	f	Salesmen	30

2. List the employees names ending with an “a”.

```
mysql> Select Concat(Fname,' ',Lname) as name,Designation from emp where fname like '%a';
```

name	Designation
Akansha Goel	Manager
Somya Kansal	Salesmen
NULL	Analyst
Abhilasha Bhardwaj	Salesmes

4 rows in set (0.00 sec)

3. List the names of employees whose names have exactly 5 Characters.

```
mysql> Select Concat(Fname,' ',Lname) as name,Designation from emp where fname like '_____';
```

name	Designation
Somya Kansal	Salesmen

1 row in set (0.00 sec)

4. List the employee names having “l” as the second character.

```
mysql> Select Concat(Fname,' ',Lname) as name from emp where fname like '_l%';
```

name
Ritu Goel
rishab Gupta

2 rows in set (0.00 sec)

## F. Using Expression with Column

5. List the name , salary and PF amount of all the employees( PF is calculated as 10% of salary).

```
mysql> Select Concat(Fname,' ',Lname) as name,salary,(Salary*.10) as PF_Amount from emp ;
```

name	salary	PF_Amount
Akansha Goel	500000.00	50000.00
Akshat Kansal	400000.00	40000.00
Ritu Goel	99000.00	9900.00
Somya Kansal	880000.00	88000.00
rishab Gupta	880.00	88.00
Naveen Goyal	999.00	99.90
NULL	20000.00	2000.00
Abhilasha Bhardwaj	23440.00	2344.00

8 rows in set (0.07 sec)

6. List the names of employees , who are more than 2 years old in the organization.

```
mysql> select Concat(Fname,' ',Lname) from emp where EXTRACT(YEAR FROM Curdate()) - EXTRACT(YEAR FROM DOJ) > 02;
```

Concat(Fname,' ',Lname)
Somya Kansal
rishab Gupta
Naveen Goyal
NULL
Abhilasha Bhardwaj

5 rows in set (0.00 sec)

## G. Ordering the Results of a query

1. List the empno,ename,sal in ascending order of salary.

```
mysql> select ssn, Concat(Fname, ' ', Lname) as name ,Salary from emp order by salary;
```

ssn	name	Salary
7786	rishab Gupta	880.00
7788	Naveen Goyal	999.00
7839	NULL	20000.00
7934	Abhilasha Bhardwaj	23440.00
7588	Ritu Goel	99000.00
7521	Akshat Kansal	400000.00
7369	Akansha Goel	500000.00
7780	Somya Kansal	880000.00

8 rows in set (0.06 sec)

2. List the employee name and hiredate in descending order of Hiredate.

```
mysql> select Concat(Fname, ' ', Lname) as name , DOJ from emp order by DOJ;
```

name	DOJ
Naveen Goyal	1979-02-07
Abhilasha Bhardwaj	1979-02-13
rishab Gupta	1979-12-03
NULL	1980-02-23
Somya Kansal	1989-12-03
Ritu Goel	2015-01-23
Akansha Goel	2016-02-15
Akshat Kansal	2016-04-03

8 rows in set (0.00 sec)

3. List the employee name, salary , job and department No. in ascending order of Department No. in ascending order of Department No and then on descending descending order of salary.

```
mysql> select Concat(Fname, ' ', Lname) as name , Salary,DEsignation,Dno from emp order by Dno ,Salary desc;
```

name	Salary	DEsignation	Dno
Abhilasha Bhardwaj	23440.00	Salesmes	NULL
Akansha Goel	500000.00	Manager	10
Ritu Goel	99000.00	Analyst	10
Akshat Kansal	400000.00	Manager	20
rishab Gupta	880.00	Clerk	20
Somya Kansal	880000.00	Salesmen	30
NULL	20000.00	Analyst	30
Naveen Goyal	999.00	Clerk	50

8 rows in set (0.00 sec)