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**Practical 07: Order By and Indexing**

**Objective:**  Study and Implementation of Order by Clause and Indexing.

mysql> desc city;

+-------------+----------+------+-----+---------+----------------+

| Field | Type | Null | Key | Default | Extra |

+-------------+----------+------+-----+---------+----------------+

| ID | int | NO | PRI | NULL | auto\_increment |

| Name | char(35) | NO | | | |

| CountryCode | char(3) | NO | MUL | | |

| District | char(20) | NO | | | |

| Population | int | NO | | 0 | |

+-------------+----------+------+-----+---------+----------------+

5 rows in set (0.00 sec)

1. **ORDER BY:** Order By statement is used to sort the result in ascending or descending order.

mysql> select count(\*) as No\_of\_Cities , District from city where countrycode='IND' group by district order by district ;

+--------------+-------------------+

| No\_of\_Cities | District |

+--------------+-------------------+

| 35 | Andhra Pradesh |

| 4 | Assam |

| 13 | Bihar |

| 1 | Chandigarh |

| 7 | Chhatisgarh |

| 3 | Delhi |

| 21 | Gujarat |

| 12 | Haryana |

| 2 | Jammu and Kashmir |

| 8 | Jharkhand |

| 17 | Karnataka |

| 7 | Kerala |

| 21 | Madhya Pradesh |

| 35 | Maharashtra |

| 1 | Manipur |

| 1 | Meghalaya |

| 1 | Mizoram |

| 7 | Orissa |

| 1 | Pondicherry |

| 9 | Punjab |

| 14 | Rajasthan |

| 28 | Tamil Nadu |

| 1 | Tripura |

| 43 | Uttar Pradesh |

| 3 | Uttaranchal |

| 46 | West Bengali |

+--------------+-------------------+

26 rows in set (0.00 sec)

mysql> select count(\*) as No\_of\_Cities , District from city where countrycode='IND' group by district order by No\_of\_cities desc;

+--------------+-------------------+

| No\_of\_Cities | District |

+--------------+-------------------+

| 46 | West Bengali |

| 43 | Uttar Pradesh |

| 35 | Maharashtra |

| 35 | Andhra Pradesh |

| 28 | Tamil Nadu |

| 21 | Gujarat |

| 21 | Madhya Pradesh |

| 17 | Karnataka |

| 14 | Rajasthan |

| 13 | Bihar |

| 12 | Haryana |

| 9 | Punjab |

| 8 | Jharkhand |

| 7 | Kerala |

| 7 | Chhatisgarh |

| 7 | Orissa |

| 4 | Assam |

| 3 | Delhi |

| 3 | Uttaranchal |

| 2 | Jammu and Kashmir |

| 1 | Chandigarh |

| 1 | Pondicherry |

| 1 | Manipur |

| 1 | Tripura |

| 1 | Mizoram |

| 1 | Meghalaya |

+--------------+-------------------+

26 rows in set (0.00 sec)

1. **Indexing**: Indexing is a way to get an unordered table into an order that will maximize the query’s efficiency while searching.

mysql> CREATE INDEX idx ON employee(empName ASC, deptNo DESC);

Query OK, 0 rows affected (1.70 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> show index from employee;

+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| Table | Non\_unique | Key\_name | Seq\_in\_index | Column\_name | Collation | Cardinality | Sub\_part | Packed | Null | Index\_type | Comment | Index\_comment | Visible | Expression |

+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

| employee | 0 | PRIMARY | 1 | empID | A | 9 | NULL | NULL | | BTREE | | | YES | NULL |

| employee | 1 | deptNo | 1 | deptNo | A | 9 | NULL | NULL | YES | BTREE | | | YES | NULL |

| employee | 1 | idx | 1 | empName | A | 9 | NULL | NULL | YES | BTREE | | | YES | NULL |

| employee | 1 | idx | 2 | deptNo | D | 9 | NULL | NULL | YES | BTREE | | | YES | NULL |

+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+---------+------------+

4 rows in set (0.53 sec)

mysql>

mysql> select\* from employee;

+-------+---------+--------+------------+

| empID | empName | deptNo | empContact |

+-------+---------+--------+------------+

| 1 | Amit | 11 | 12345 |

| 2 | Rohan | 12 | 67892 |

| 3 | Sham | 13 | 23499 |

| 4 | Riya | 14 | 79282 |

| 5 | Harman | 15 | 57123 |

| 6 | Parth | 16 | 45721 |

| 7 | Naveen | 17 | 59231 |

| 8 | Adarsh | 18 | 57781 |

| 9 | Teena | 19 | 23491 |

+-------+---------+--------+------------+

9 rows in set (0.00 sec)

mysql> select\* from employee ORDER BY empName, deptNo;

+-------+---------+--------+------------+

| empID | empName | deptNo | empContact |

+-------+---------+--------+------------+

| 8 | Adarsh | 18 | 57781 |

| 1 | Amit | 11 | 12345 |

| 5 | Harman | 15 | 57123 |

| 7 | Naveen | 17 | 59231 |

| 6 | Parth | 16 | 45721 |

| 4 | Riya | 14 | 79282 |

| 2 | Rohan | 12 | 67892 |

| 3 | Sham | 13 | 23499 |

| 9 | Teena | 19 | 23491 |

+-------+---------+--------+------------+

9 rows in set (0.02 sec)