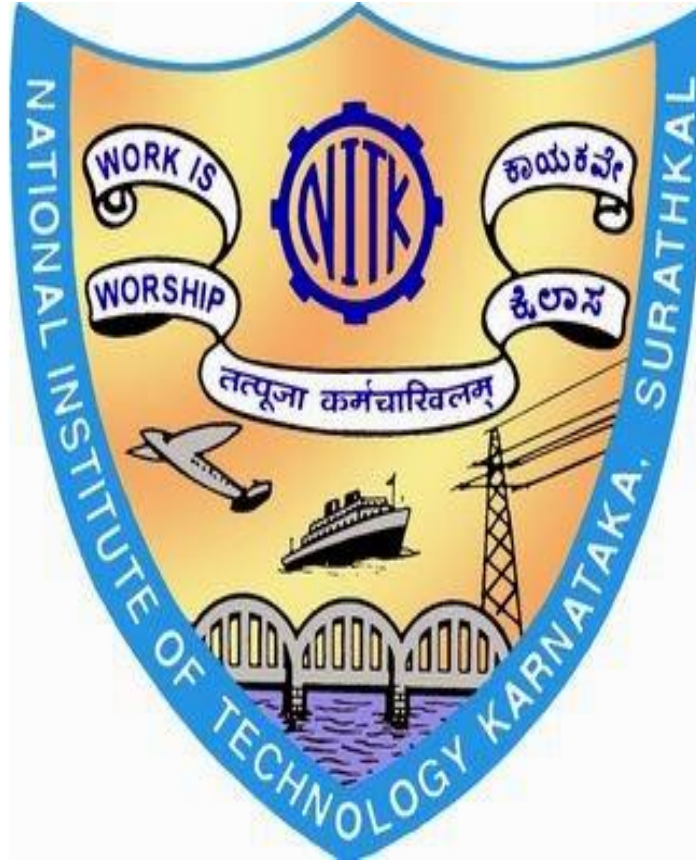# NATIONAL INSTITUTE OF TECHNOLGY

KARNATAKA

DATABASE SYSTEM LAB

REPORT : 1

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Q1) Create table called 'Employee'

```
mysql> SELECT *FROM Employee;
+--------+--------------+--------+------+------------+
| Empno  | EmpName      | Job    | Mgr  | sal        |
+--------+--------------+--------+------+------------+
|      1 | Robert Downy | Actor  |  321 | 1000000000 |
+--------+--------------+--------+------+------------+
1 row in set (0.00 sec)
```

a) Add column 'Commission' with Domain to the table.

```
mysql> ALTER TABLE Employee ADD Commission INT;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Employee;
+--------+--------------+--------+------+------------+------------+
| Empno  | EmpName      | Job    | Mgr  | sal        | Commission |
+--------+--------------+--------+------+------------+------------+
|      1 | Robert Downy | Actor  |  321 | 1000000000 |       NULL |
+--------+--------------+--------+------+------------+------------+
```

b) Insert any five records to the table:

```
mysql> SELECT * FROM Employee;
+-------+--------------+-------------+------+------------+------------+
| Empno | EmpName      | Job         | Mgr  | sal        | Commission |
+-------+--------------+-------------+------+------------+------------+
|     1 | Robert Downy | Actor       |  321 | 1000000000 |       NULL |
|     2 | Virat Kohli  | Cricketer   |  101 |  673000675 |      10000 |
|     3 | Ratan Tata   | Bussinessmen|  786 | 2137869080 |     500000 |
|     4 | Ronaldo      | Footbaler   |  506 | 2140000000 |      50000 |
|     5 | Modi ji      | PM          | 1010 |     100000 |      99999 |
+-------+--------------+-------------+------+------------+------------+
5 rows in set (0.00 sec)
```

C) Update the column details of 'Job':

```
mysql> SELECT * FROM Employee;
+-------+--------------+-----------+------+------------+------------+
| Empno | EmpName      | Job       | Mgr  | sal        | Commission |
+-------+--------------+-----------+------+------------+------------+
|     1 | Robert Downy | Actor     |  321 | 1000000000 |       NULL |
|     2 | Virat Kohli  | Singer    |  101 |  673000675 |      10000 |
|     3 | Ratan Tata   | PM        |  786 | 2137869080 |     500000 |
|     4 | Ronaldo      | Footbaler |  506 | 2140000000 |      50000 |
|     5 | Modi ji      | CM        | 1010 |     100000 |      99999 |
|    19 | Denver       | Actor     |  100 |    1000000 |        999 |
+-------+--------------+-----------+------+------------+------------+
```

d) Rename the column of Employee table using 'ALTER ' command:

```
mysql> ALTER TABLE Employee CHANGE COLUMN EmpName Stu_Name VARCHAR(25);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT *FROM Employee;
+-------+--------------+-----------+------+------------+------------+
| Empno | Stu_Name     | Job       | Mgr  | sal        | Commission |
+-------+--------------+-----------+------+------------+------------+
|     1 | Robert Downy | Actor     |  321 | 1000000000 |       NULL |
|     2 | Virat Kohli  | Singer    |  101 |  673000675 |      10000 |
|     3 | Ratan Tata   | PM        |  786 | 2137869080 |     500000 |
|     4 | Ronaldo      | Footbaler |  506 | 2140000000 |      50000 |
|     5 | Modi ji      | CM        | 1010 |     100000 |      99999 |
|    19 | Denver       | Actor     |  100 |    1000000 |        999 |
+-------+--------------+-----------+------+------------+------------+
```

e) Delete the employee whose Empno is 19:

```
mysql> DELETE FROM Employee WHERE Empno=19;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT *FROM Employee;
+-------+--------------+-----------+------+------------+------------+
| Empno | Stu_Name     | Job       | Mgr  | sal        | Commission |
+-------+--------------+-----------+------+------------+------------+
|     1 | Robert Downy | Actor     |  321 | 1000000000 |       NULL |
|     2 | Virat Kohli  | Singer    |  101 |  673000675 |      10000 |
|     3 | Ratan Tata   | PM        |  786 | 2137869080 |     500000 |
|     4 | Ronaldo      | Footbaler |  506 | 2140000000 |      50000 |
|     5 | Modi ji      | CM        | 1010 |     100000 |      99999 |
+-------+--------------+-----------+------+------------+------------+
```

Q2)   Create table name 'Department' :

```
mysql> SELECT * FROM Department;
+--------+----------+----------------------+
| DeptNo | DeptName | Location             |
+--------+----------+----------------------+
|      1 | CSE      | Near NITK_Guesthouse |
+--------+----------+----------------------+
1 row in set (0.00 sec)
```

a) Add column 'Designation' to the table:

```
mysql> SELECT * FROM Department;
+--------+----------+----------------------+-------------+
| DeptNo | DeptName | Location             | Designation |
+--------+----------+----------------------+-------------+
|      1 | CSE      | Near NITK_Guesthouse | NULL        |
+--------+----------+----------------------+-------------+
```

b) Insert values into table:

```
mysql> SELECT * FROM Department;
+--------+----------+----------------------+------------------------+
| DeptNo | DeptName | Location             | Designation            |
+--------+----------+----------------------+------------------------+
|      1 | CSE      | Near NITK_Guesthouse | NULL                   |
|      2 | IT       | Near LHC -c          | Information Technology  |
|      3 | MECH     | Near TT court        | Mechanical engineering  |
|      4 | CV       | Near Girls Hostel    | Civil Engineering       |
|      5 | MT       | Behind Main Building  | Meta Engineering        |
|      9 | EE       | Near LHc-c           | Electrical Engineering  |
+--------+----------+----------------------+------------------------+
```

c) List the records of employee table grouped by DeptNo:

```
mysql> SELECT * FROM Department WHERE DeptNo BETWEEN 3 AND 5;
+--------+----------+---------------------+------------------------+
| DeptNo | DeptName | Location            | Designation            |
+--------+----------+---------------------+------------------------+
|      3 | MECH     | Near TT court       | Mechanical engineering |
|      4 | CV       | Near Girls Hostel   | Civil Engineering      |
|      5 | MT       | Behind Main Building | Meta Engineering      |
+--------+----------+---------------------+------------------------+
```

d) Update the record where DeptNo is 9:

```
mysql> UPDATE Department SET DeptName='EC',Designation='Electronic Communication
' WHERE DeptNo=9;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM Department;
+--------+----------+---------------------+-------------------------+
| DeptNo | DeptName | Location            | Designation             |
+--------+----------+---------------------+-------------------------+
|      1 | CSE      | Near NITK_Guesthouse | NULL                   |
|      2 | IT       | Near LHC -c         | Information Technology   |
|      3 | MECH     | Near TT court       | Mechanical engineering  |
|      4 | CV       | Near Girls Hostel   | Civil Engineering       |
|      5 | MT       | Behind Main Building | Meta Engineering       |
|      9 | EC       | Near LHc-c          | Electronic Communication |
+--------+----------+---------------------+-------------------------+
```

e) Delete any column data from table:

```
mysql> ALTER TABLE Department DROP COLUMN location;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Department;
+--------+----------+--------------------------+
| DeptNo | DeptName | Designation              |
+--------+----------+--------------------------+
|      1 | CSE      | NULL                     |
|      2 | IT       | Information Technology   |
|      3 | MECH     | Mechanical engineering   |
|      4 | CV       | Civil Engineering        |
|      5 | MT       | Meta Engineering         |
|      9 | EC       | Electronic Communication |
+--------+----------+--------------------------+
```

Q3) Create table name 'Customer' :

a) Insert records into the table:

```
mysql> SELECT * FROM Customer;
+-------------+------------------+-----------+
| Cust_Name   | Cust_Street      | Cust_City |
+-------------+------------------+-----------+
| Abhinav     | Golgumbad        | HYD       |
| John        | Debra 401,US     | California|
| Krishana    | Andheri west 010 | Mumbai    |
| Naman       | IT HubStreet     | HYD       |
| Subramanyam | Madurai IT Park30| Chennai   |
| Vivek       | Cent Xavier 401  | Benguluru |
+-------------+------------------+-----------+
```

b) Add 'Salary' column to the table:

```
mysql> ALTER TABLE Customer  ADD Salary INT;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Customer;
+-------------+------------------+-----------+--------+
| Cust_Name   | Cust_Street      | Cust_City | Salary |
+-------------+------------------+-----------+--------+
| Abhinav     | Golgumbad        | HYD       |   NULL |
| John        | Debra 401,US     | California|   NULL |
| Krishana    | Andheri west 010 | Mumbai    |   NULL |
| Naman       | IT HubStreet     | HYD       |   NULL |
| Subramanyam | Madurai IT Park30| Chennai   |   NULL |
| Vivek       | Cent Xavier 401  | Benguluru |   NULL |
+-------------+------------------+-----------+--------+
```

c) Drop the 'Salary' column of the table:

```
mysql> ALTER TABLE Customer DROP COLUMN Salary;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Customer;
+-------------+------------------+-----------+
| Cust_Name   | Cust_Street      | Cust_City |
+-------------+------------------+-----------+
| Abhinav     | Golgumbad        | HYD       |
| John        | Debra 401,US     | California|
| Krishana    | Andheri west 010 | Mumbai    |
| Naman       | IT HubStreet     | HYD       |
| Subramanyam | Madurai IT Park30| Chennai   |
| Vivek       | Cent Xavier 401  | Benguluru |
+-------------+------------------+-----------+
```

d) Delete the rows of 'Customer' table where Cust_City is 'HYD' :

```
mysql> DELETE FROM Customer WHERE Cust_City='HYD';
Query OK, 2 rows affected (0.00 sec)

mysql> SELECT * FROM Customer;
+-------------+------------------+-----------+
| Cust_Name   | Cust_Street      | Cust_City |
+-------------+------------------+-----------+
| John        | Debra 401,US     | California|
| Krishana    | Andheri west 010 | Mumbai    |
| Subramanyam | Madurai IT Park30| Chennai   |
| Vivek       | Cent Xavier 401  | Benguluru |
+-------------+------------------+-----------+
```

Q4) Create table 'Branch':

```
mysql> SELECT * FROM Branch;
+-----------------+--------------+---------+
| Branch_Name     | Branch_City  | Asserts |
+-----------------+--------------+---------+
| Andheri west    | Mumbai       |   10000 |
| Farrukhabad     | Fatehgarh    |    1500 |
| NITK-Surathkal  | Manglore     |   20000 |
| Robert Lin      | Maxico       |    7000 |
+-----------------+--------------+---------+
4 rows in set (0.00 sec)
```

a) Increse the size of data type for 'Asserts' to the Branch:

```
mysql> CREATE TABLE Branch(Branch_Name VARCHAR(20),Branch_City VARCHAR(20),Asserts INT(100),PRIMARY KEY(Branch_Name));
Query OK, 0 rows affected (0.01 sec)

mysql> ALTER TABLE Branch MODIFY Asserts INT(255);
Query OK, 0 rows affected (0.00 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

b) Add and Drop a column to the Branch table:

Adding:

```
mysql> ALTER TABLE Branch ADD Cust_id INT;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Branch;
+----------------+-------------+---------+---------+
| Branch_Name    | Branch_City | Asserts | Cust_id |
+----------------+-------------+---------+---------+
| Andheri west   | Mumbai      |   10000 |    NULL |
| Farrukhabad    | Fatehgarh   |    1500 |    NULL |
| NITK-Surathkal | Manglore    |   20000 |    NULL |
| Robert Lin     | Maxico      |    7000 |    NULL |
+----------------+-------------+---------+---------+
```

Dropping:

```
mysql> ALTER TABLE Branch DROP COLUMN Branch_City;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Branch;
+----------------+---------+---------+
| Branch_Name    | Asserts | Cust_id |
+----------------+---------+---------+
| Andheri west   |   10000 |    NULL |
| Farrukhabad    |    1500 |    NULL |
| NITK-Surathkal |   20000 |    NULL |
| Robert Lin     |    7000 |    NULL |
+----------------+---------+---------+
```

c) Insert values to the table:

```
mysql> SELECT * FROM Branch;
+----------------+---------+---------+
| Branch_Name    | Asserts | Cust_id |
+----------------+---------+---------+
| Andheri west   |   10000 |    NULL |
| Farrukhabad    |    1500 |    NULL |
| Jahanganj      |    2300 |       2 |
| Madurai        |   30000 |       1 |
| NITK-Surathkal |   20000 |    NULL |
| Robert Lin     |    7000 |    NULL |
+----------------+---------+---------+
6 rows in set (0.00 sec)
```

d) Update the Branch_Name column:

```
mysql> UPDATE Branch SET Branch_Name='Vasington' WHERE Asserts=7000;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT *FROM Branch;
+----------------+---------+---------+
| Branch_Name    | Asserts | Cust_id |
+----------------+---------+---------+
| Andheri west   |   10000 |    NULL |
| Farrukhabad    |    1500 |    NULL |
| Jahanganj      |    2300 |       2 |
| Madurai        |   30000 |       1 |
| NITK-Surathkal |   20000 |    NULL |
| Vasington      |    7000 |    NULL |
+----------------+---------+---------+
```

e) Delete any two column from table:

```
mysql> ALTER  TABLE Branch DROP COLUMN Cust_id,DROP COLUMN Asserts;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT *FROM Branch;
+----------------+
| Branch_Name    |
+----------------+
| Andheri west   |
| Farrukhabad    |
| Jahanganj      |
| Madurai        |
| NITK-Surathkal |
| Vasington      |
+----------------+
```

Q5) Create table 'Sailor':

```
+-----+--------+--------+
| Sid | Sname  | Rating |
+-----+--------+--------+
| 101 | Swiggy | 6      |
+-----+--------+--------+
```

a) Add column 'Age' to the table:

```
mysql> ALTER TABLE Sailor ADD Age INT;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Sailor;
+-----+--------+--------+------+
| Sid | Sname  | Rating | Age  |
+-----+--------+--------+------+
| 101 | Swiggy | 6      | NULL |
+-----+--------+--------+------+
```

b) Insert values into table:

```
mysql> SELECT * FROM Sailor;
+-----+----------+--------+------+
| Sid | Sname    | Rating | Age  |
+-----+----------+--------+------+
| 101 | Swiggy   | 6      | NULL |
| 286 | Amazon   | 8      |   20 |
| 305 | Zomato   | 7      |   10 |
| 420 | Flipkart | 9      |   25 |
| 786 | Myntra   | 8      |    8 |
+-----+----------+--------+------+
```

c) Delete the row with Rating>8 :

```
mysql> DELETE FROM Sailor WHERE Rating >8;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Sailor;
+------+--------+--------+------+
| Sid  | Sname  | Rating | Age  |
+------+--------+--------+------+
| 101  | Swiggy | 6      | NULL |
| 286  | Amazon | 8      |   20 |
| 305  | Zomato | 7      |   10 |
| 786  | Myntra | 8      |    8 |
+------+--------+--------+------+
```

d) Update the column details of 'Sailor' :

```
mysql> UPDATE Sailor SET Rating='10';
Query OK, 4 rows affected (0.00 sec)
Rows matched: 4  Changed: 4  Warnings: 0

mysql> SELECT * FROM Sailor;
+------+--------+--------+------+
| Sid  | Sname  | Rating | Age  |
+------+--------+--------+------+
| 101  | Swiggy | 10     | NULL |
| 286  | Amazon | 10     |   20 |
| 305  | Zomato | 10     |   10 |
| 786  | Myntra | 10     |    8 |
+------+--------+--------+------+
```

e) Insert NULL values to the table :

```
mysql> UPDATE Sailor  SET Age=NULL WHERE Sid=286 OR Sid=786;
Query OK, 2 rows affected (0.00 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> SELECT * FROM Sailor;
+-----+--------+--------+------+
| Sid | Sname  | Rating | Age  |
+-----+--------+--------+------+
| 101 | Swiggy | 10     | NULL |
| 286 | Amazon | 10     | NULL |
| 305 | Zomato | 10     |   10 |
| 786 | Myntra | 10     | NULL |
+-----+--------+--------+------+
```

Q6) Create table name 'Reserves' :

a) Insert values to the table:

```
mysql> SELECT * FROM Reserves;
+---------+------+------+
| Boat_id | S_id | Day  |
+---------+------+------+
|      10 | 9999 |    1 |
|      12 |   99 |    4 |
|      15 | 1024 |    2 |
|      16 |  121 |    3 |
|      31 | 1010 |    6 |
+---------+------+------+
```

b) Add column 'time' to the table:

```
mysql> ALTER TABLE Reserves ADD time TIME;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT *FROM Reserves;
+---------+------+------+------+
| Boat_id | S_id | Day  | time |
+---------+------+------+------+
|      10 | 9999 |    1 | NULL |
|      12 |   99 |    4 | NULL |
|      15 | 1024 |    2 | NULL |
|      16 |  121 |    3 | NULL |
|      31 | 1010 |    6 | NULL |
+---------+------+------+------+
```

c) Alter the column 'Day' data type to DATE:

```
mysql> ALTER TABLE Reserves DROP COLUMN Day;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE Reserves ADD Day DATE;
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

d) Drop the column 'time' in the table:

```
mysql> ALTER TABLE Reserves DROP COLUMN time;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Reserves;
+---------+------+------+
| Boat_id | S_id | Day  |
+---------+------+------+
|      10 | 9999 | NULL |
|      12 |   99 | NULL |
|      15 | 1024 | NULL |
|      16 |  121 | NULL |
|      31 | 1010 | NULL |
+---------+------+------+
```

e) Delete the row of the table with some condition:

```
mysql> DELETE FROM Reserves WHERE S_id=99;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Reserves;
+---------+------+------+
| Boat_id | S_id | Day  |
+---------+------+------+
|      10 | 9999 | NULL |
|      15 | 1024 | NULL |
|      16 |  121 | NULL |
|      31 | 1010 | NULL |
+---------+------+------+
```