Group Assignment

(Batch 1)

Topic: SQL fundamentals Retrieving Data Using the SQL SELECT Statement, Restricting and Sorting Data

Team members:

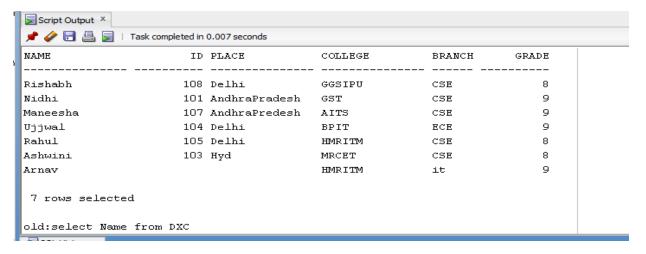- **Rahul Veer Singh**
- **Ashwini Janthe**
- **M. Maneesha**
- **Rishabh Singh**
- **Madhurima Nidhi Sree K**
- **Ujjwal Pandey**

Tables:

1. Rahul's table:

```
NAME                      ID PLACE       COLLEGE              BRANC      GRADE
-------------------- ---------- ---------- -------------------- ----- ----------
Rahul                    101 Delhi       GGSIPU               CSE            9
Ashwini                  102 Hyd         MRCET                CSE            8
Maneesha                 103 Andhra      AITS                 CSE            9
Nidhi                    104 Andhra      GST                  CSE            9
Rishabh                  105 Delhi       GGSIPU               CSE            8
Ujjwal                   106 Delhi       GGSIPU               ECE            9

6 rows selected.
```

2. Rishabh's table:

```
Script Output  ×
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NAME               ID PLACE            COLLEGE           BRANCH     GRADE
--------------- ---------- --------------- --------------- ------ ----------
Rishabh            108 Delhi            GGSIPU            CSE           8
Nidhi              101 AndhraPradesh    GST               CSE           9
Maneesha           107 AndhraPredesh    AITS              CSE           9
Ujjwal             104 Delhi            BPIT              ECE           9
Rahul              105 Delhi            HMRITM            CSE           8
Ashwini            103 Hyd              MRCET             CSE           8
Arnav                                   HMRITM            it            9

 7 rows selected

old:select Name from DXC
```

3. Madhurima's table:

NAME	ID	PLACE	COLLEGE	BRANCH	GRADES
Rishab	102	DELHI	CGSIPU	CSE	9
Maneesha	101	AP	AITS	CSE	9
UJWAL	103	DELHI	BPIT	ECE	8
Nidhi	104	AP	GST	CSE	9
Rahul	105	DELHI	HMRITM	CSE	9
Ashwini	106	AP	MRCET	CSE	8

6 rows returned in 0.01 seconds   Download

4. Maneesha's table:

SQL Plus

NAME	PLACE	COLLEGE	ID	BRANCH	GRADE
MANEESHA	AP	AITS	101	CSE	9
RAHUL	DELHI	GGSIPU	102	CSE	9
RAHUL	DELHI	GGSIPU	103	CSE	8
NIDHI	AP	GST	104	CSE	8
RISHAB	DELHI	GGSIPU	105	CSE	9
UJWAL	DELHI	GGSIPU	106	ECE	9

6 rows selected.

5. Ashwini's table:

SQL> select * from batch1;

NAME	ID	PLACE	COLLEGE	BRANCH	GRADE
Maneesha	107	Andra	AITS	CSE	9
Rishabh	108	delhi	CGSIPU	CSE	8
Ujjwal	104	Delhi	BPIT	ECE	9
Nidhi	101	Andra	GST	CSE	9
rahul	105	Delhi	HMRITM	CSE	8
ashwini	103	telang	MRCET	CSE	8

6 rows selected.

6. Ujjwal's table:

```
SQL> select * from employee;

        ID NAME                    AGE ADDRESS            SALARY
---------- ---------- ---------- ---------- ----------
         1 Ujjwal                  20 Delhi               50000
         2 Neha                    25 Noida               90000
         3 Neha                    22 Delhi               40000
         4 Diksha                  24 Jammu               20000
         5 Lakshmi                 30 Chennai             60000
         6 Rahul                   28 Bangalore           70000
         7 Divya                   35 Mumbai             100000
         8 Ajay                    40 Bangalore          100000

8 rows selected.
```

Commands and Outputs:

1) **Rahul's Commands:** Restricting data of table with the use of 'WHERE' clause

- **ARITHMETIC OPERATIONS:** select * from DXC where ID = 101;

```
SQL> select * from DXC where ID = 101;

NAME                       ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Rahul                     101 Delhi      GGSIPU               CSE            9
```

- **ARITHMETIC OPERATIONS:** select * from DXC where grade<9;

```
SQL> select * from DXC where grade<9;

NAME                       ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Ashwini                   102 Hyd        MRCET                CSE            8
Rishabh                   105 Delhi      GGSIPU               CSE            8
```

- **ARITHMETIC OPERATIONS:** select * from DXC where grade>8;

```
NAME                       ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Rahul                     101 Delhi      GGSIPU               CSE            9
Maneesha                  103 Andhra     AITS                 CSE            9
Nidhi                     104 Andhra     GST                  CSE            9
Ujjwal                    106 Delhi      GGSIPU               ECE            9
```

- **ARITHMETIC OPERATIONS:** select * from DXC where ID != 104;

```
SQL> select * from DXC where ID != 104;

NAME                        ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Rahul                      101 Delhi      GGSIPU               CSE            9
Ashwini                    102 Hyd        MRCET                CSE            8
Maneesha                   103 Andhra     AITS                 CSE            9
Rishabh                    105 Delhi      GGSIPU               CSE            8
Ujjwal                     106 Delhi      GGSIPU               ECE            9
```

- **BETWEEN:** select * from DXC where ID between 102 and 104;

```
SQL> select * from DXC where ID between 102 and 104;

NAME                        ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Ashwini                    102 Hyd        MRCET                CSE            8
Maneesha                   103 Andhra     AITS                 CSE            9
Nidhi                      104 Andhra     GST                  CSE            9
```

- **IN:** select * from DXC where ID in (102,104);

```
SQL> select * from DXC where ID in (102,104);

NAME                        ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Ashwini                    102 Hyd        MRCET                CSE            8
Nidhi                      104 Andhra     GST                  CSE            9
```

- **LIKE (PREFIX):** select * from DXC where COLLEGE like 'GGS%';

```
SQL> select * from DXC where COLLEGE like 'GGS%';

NAME                        ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Rahul                      101 Delhi      GGSIPU               CSE            9
Rishabh                    105 Delhi      GGSIPU               CSE            8
Ujjwal                     106 Delhi      GGSIPU               ECE            9
```

- **LIKE (BASED ON SECOND LETTER):** select * from DXC where COLLEGE like '_I%';

```
SQL> select * from DXC where COLLEGE like '_I%';

NAME                        ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Maneesha                   103 Andhra     AITS                 CSE            9
```

- **LIKE (SUFFIX):** select * from DXC where COLLEGE like '%T';

```
SQL> select * from DXC where COLLEGE like '%T';

NAME                        ID PLACE      COLLEGE              BRANC      GRADE
------------------- ---------- ---------- -------------------- ----- ----------
Ashwini                    102 Hyd        MRCET                CSE            8
Nidhi                      104 Andhra     GST                  CSE            9
```
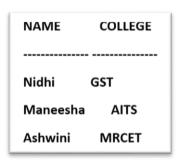
2) **Rishabh's Commands:** use of logical operators in table operations

- **AND:** select Name from DXC where Place = 'Delhi' and Name like 'R%';

```
NAME

---------------

Rishabh

Rahul
```

- **OR:** select Name from DXC where Place = 'Delhi' or Name like 'R%';

```
NAME

---------------

Rishabh

Ujjwal

Rahul
```

- **NOT:** select Name, College from DXC where not (id is null) and not (place = 'Delhi');

```
NAME           COLLEGE

--------------- ----------------

Nidhi       GST

Maneesha     AITS

Ashwini     MRCET
```

3) **Madhurima's Commands:** use of comparision operators in table operations

- **COUNT:** select count(*) as no_of_students_with_grades_9 from dxc where grades=9;

```
NO_OF_STUDENTS_WITH_GRADES_9

4
```
1 rows returned in 1.00 seconds   Download

- **LIKE (SUFFIX):** select * from dxc where branch like 'E%';

NAME	ID	PLACE	COLLEGE	BRANCH	GRADES
UJWAL	103	DELHI	BPIT	ECE	8

1 rows returned in 0.02 seconds   Download

- **LIKE (FOR 5 LETTER NAME):** select * from dxc where name like '_____';

NAME	ID	PLACE	COLLEGE	BRANCH	GRADES
UJWAL	103	DELHI	BPIT	ECE	8
Nidhi	104	AP	GST	CSE	9
Rahul	105	DELHI	HMRITM	CSE	9

3 rows returned in 0.01 seconds   Download

- **NOT EQUAL:** select name from dxc where id <> 105;

NAME
Rishab
Maneesha
UJWAL
Nidhi
Ashwini

5 rows returned in 0.02 seconds   Download

- **LESS THAN AND EQUAL TO:** select * from dxc where grades<=8;

NAME	ID	PLACE	COLLEGE	BRANCH	GRADES
UJWAL	103	DELHI	BPIT	ECE	8
Ashwini	106	AP	MRCET	CSE	8

2 rows returned in 0.01 seconds   Download

4) **Maneesha's Commands:** use of SELECT statement in table operations

- Selecting everything from table:

SELECT * FROM DXCB1;

```
SQL> SELECT * FROM DXCB1;

NAME        PLACE       COLLEGE          ID BRANCH        GRADE
---------   ---------   -------     ---------- -------   ----------
MANEESHA    AP          AITS            101 CSE              9
RAHUL       DELHI       GGSIPU          102 CSE              9
RAHUL       DELHI       GGSIPU          103 CSE              8
NIDHI       AP          GST             104 CSE              8
RISHAB      DELHI       GGSIPU          105 CSE              9
UJWAL       DELHI       GGSIPU          106 ECE              9

6 rows selected.

SQL>
```

- Selecting ID, College and Branch from table:

  SELECT ID, COLLEGE, BRANCH FROM DXCB1;

  ```
  SQL> SELECT ID,PLACE,COLLEGE FROM DXCB1;

          ID PLACE      COLLEGE
  ---------- ---------- -------
         101 AP         AITS
         102 DELHI      GGSIPU
         103 DELHI      GGSIPU
         104 AP         GST
         105 DELHI      GGSIPU
         106 DELHI      GGSIPU

  6 rows selected.
  ```

- Selecting place and grade from the table:

  SELECT PLACE, GRADE FROM DXCB1;

  ```
  SQL> SELECT PLACE,GRADE FROM DXCB1;

  PLACE           GRADE
  --------   ----------
  AP                  9
  DELHI               9
  DELHI               8
  AP                  8
  DELHI               9
  DELHI               9

  6 rows selected.
  ```

5) **Ashwini's Commands:** Sorting data of table with the use of 'ORDER BY' clause

- **DESCENDING ORDER:** Select * from batch1 order by place desc;

  ```
  SQL> select * from batch1 order by place desc;

  NAME           ID PLACE   COLLEGE BRANCH    GRADE
  -------    ------- ------- ------- ------  --------
  ashwini       103 telang  MRCET   CSE           8
  Rishabh       108 delhi   CGSIPU  CSE           8
  Ujjwal        104 Delhi   BPIT    ECE           9
  rahul         105 Delhi   HMRITM  CSE           8
  Nidhi         101 Andra   GST     CSE           9
  Maneesha      107 Andra   AITS    CSE           9

  6 rows selected.
  ```

- **ASCENDING ORDER:** Select * from batch1 order by place asc;

```
SQL> select * from batch1 order by place asc;

NAME              ID PLACE    COLLEGE  BRANCH      GRADE
--------   ---------- -------  -------  ------  ----------
Maneesha         107 Andra    AITS     CSE             9
Nidhi            101 Andra    GST      CSE             9
Ujjwal           104 Delhi    BPIT     ECE             9
rahul            105 Delhi    HMRITM   CSE             8
Rishabh          108 delhi    CGSIPU   CSE             8
ashwini          103 telang   MRCET    CSE             8

6 rows selected.
```

- **SORT ACCORDING TO MULTIPLE COLUMNS:**

  Select * from batch1 order by place desc, college asc;

```
SQL> select * from batch1 order by place desc,college asc;

NAME              ID PLACE    COLLEGE  BRANCH      GRADE
--------   ---------- -------  -------  ------  ----------
ashwini          103 telang   MRCET    CSE             8
Rishabh          108 delhi    CGSIPU   CSE             8
Ujjwal           104 Delhi    BPIT     ECE             9
rahul            105 Delhi    HMRITM   CSE             8
Maneesha         107 Andra    AITS     CSE             9
Nidhi            101 Andra    GST      CSE             9

6 rows selected.
```

6) **Ujjwal's Commands:** use of subqueries using SELECT statement in table operations

- **To select the information about all the employees who have a salary >50000:**

  select * from employee where id in (select id from employees where salary>50000);

```
SQL> select * from employee where id in (select id from employee where salary >50000);

        ID NAME              AGE ADDRESS       SALARY
---------- ---------- ---------- ---------- ----------
         2 Neha               25 Noida         90000
         5 Lakshmi            30 Chennai       60000
         6 Rahul              28 Bangalore     70000
         7 Divya              35 Mumbai       100000
         8 Ajay               40 Bangalore    100000
```

- To select Id, Name, Age of all the employees who are living in either Mumbai or Chennai.

  select Id, Name, Age from employee where address in (select address from employee where address='Chennai' or address='Mumbai');

```
SQL> select Id,Name,Age from employee where address in (select address from employee where address='Chennai' or address='Mumbai');

     ID NAME          AGE
--------- --------- ---------
      5 Lakshmi        30
      7 Divya          35
```

- To select the minimum salary from employees

  select * from employee where salary = (select min(salary) from employee);

```
SQL> select * from employee where salary=(select min(salary) from employee);

     ID NAME          AGE ADDRESS        SALARY
--------- --------- --------- --------- ----------
      4 Diksha         24 Jammu          20000
```

- To use select subqueries with update statement to increase the salary of the employee with the maximum age.

  update employee
  set salary=salary*2
  where age = (select max(age) from employee);

```
SQL> select * from employee;

     ID NAME               AGE ADDRESS          SALARY
--------- ---------- ---------- ---------- ----------
      1 Ujjwal          20 Delhi          50000
      2 Neha            25 Noida          90000
      3 Neha            22 Delhi          40000
      4 Diksha          24 Jammu          20000
      5 Lakshmi         30 Chennai        60000
      6 Rahul           28 Bangalore      70000
      7 Divya           35 Mumbai        100000
      8 Ajay            40 Bangalore     200000

8 rows selected.
```

- To show the details of that employee who have the maximum salary in the table using subqueries.

  select * from employee where id = (select id from employee where salary = (select max(salary) from employee));

```
SQL> select * from employee where id = (select id from employee where salary = (select max(salary) from employee));

      ID NAME              AGE ADDRESS       SALARY
---------- ---------- ---------- ---------- ----------
       8 Ajay               40 Bangalore    200000
```

- To select distinct address from employee.

  select distinct(address) from employee;

```
SQL> select distinct(address) from employee;

ADDRESS
----------
Chennai
Delhi
Bangalore
Noida
Mumbai
Jammu

6 rows selected.
```