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Data engineering - Batch 1

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SQL-JOINS

```
mysql> select * from student;
```

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	HARSH	DELHI	XXXXXXXXXX	18
2	PRATIK	BIHAR	XXXXXXXXXX	19
3	RIYANKA	SILIGURI	XXX XXX	20
4	DEEP	RAMNAGAR	XXXXX XXX	18
5	SAPTARHI	KOLKATA	XXXXX XXX	19
6	DHANRAJ	BARABAJAR	XXXXXXXXXX	20
7	ROHIT	BALURGHAT	XXXXXXXXXX	18
8	NIRAJ	ALIPUR	XXXXXXXXXX	19

8 rows in set (0.00 sec)

```
mysql> select * from studentcourse;
```

COURSE_ID	ROLL_NO
1	1
2	2
2	3
3	4
1	5
4	6
5	7
4	8

8 rows in set (0.00 sec)

INNER JOIN

```
mysql> SELECT StudentCourse.COURSE_ID, Student.NAME, Student.AGE FROM Student
-> INNER JOIN StudentCourse
-> ON Student.ROLL_NO = StudentCourse.ROLL_NO;
```

COURSE_ID	NAME	AGE
1	HARSH	18
2	PRATIK	19
2	RIYANKA	20
3	DEEP	18
1	SAPTARHI	19

5 rows in set (0.00 sec)

LEFT JOIN

```
mysql> SELECT Student.NAME, StudentCourse.COURSE_ID
-> FROM Student
-> LEFT JOIN StudentCourse
-> ON StudentCourse.ROLL_NO = Student.ROLL_NO;
```

NAME	COURSE_ID
HARSH	1
PRATIK	2
RIYANKA	2
DEEP	3
SAPTARHI	1
DHANRAJ	NULL
ROHIT	NULL
NIRAJ	NULL

8 rows in set (0.00 sec)

RIGHT JOIN

```
mysql> SELECT Student.NAME, StudentCourse.COURSE_ID
-> FROM Student
-> RIGHT JOIN StudentCourse
-> ON StudentCourse.ROLL_NO = Student.ROLL_NO;
```

NAME	COURSE_ID
HARSH	1
PRATIK	2
RIYANKA	2
DEEP	3
SAPTARHI	1
NULL	4
NULL	5
NULL	4

8 rows in set (0.00 sec)

FULL JOIN

```
mysql> SELECT Student.NAME, StudentCourse.COURSE_ID
-> FROM Student
-> LEFT JOIN StudentCourse ON StudentCourse.ROLL_NO = Student.ROLL_NO
-> UNION
-> SELECT Student.NAME, StudentCourse.COURSE_ID
-> FROM Student
-> RIGHT JOIN StudentCourse ON StudentCourse.ROLL_NO = Student.ROLL_NO;
```

NAME	COURSE_ID
HARSH	1
PRATIK	2
RIYANKA	2
DEEP	3
SAPTARHI	1
DHANRAJ	NULL
ROHIT	NULL
NIRAJ	NULL
NULL	4
NULL	5

10 rows in set (0.01 sec)

```
mysql> CREATE TABLE Employ (  
->     Emp_id INT PRIMARY KEY,  
->     Emp_name VARCHAR(255),  
->     Dept_id INT  
-> );  
Query OK, 0 rows affected (0.04 sec)  
  
mysql> INSERT INTO Employ(Emp_id, Emp_name, Dept_id) VALUES  
-> (1, 'Ram', 10),  
-> (2, 'Jon', 30),  
-> (3, 'Bob', 50);  
Query OK, 3 rows affected (0.02 sec)  
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> CREATE TABLE Department (  
->     Dept_id INT PRIMARY KEY,  
->     Dept_name VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.04 sec)  
  
mysql> INSERT INTO Department (Dept_id, Dept_name) VALUES  
-> (10, 'IT'),  
-> (30, 'HR'),  
-> (40, 'TIS');  
Query OK, 3 rows affected (0.02 sec)  
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT *
-> FROM Employee
-> CROSS JOIN Department;
```

employeeid	employeename	salary	Dept_id	Dept_name
101	Alan Doe	50000.00	40	TIS
101	Alan Doe	50000.00	30	HR
101	Alan Doe	50000.00	10	IT
102	Jack Smith	60000.00	40	TIS
102	Jack Smith	60000.00	30	HR
102	Jack Smith	60000.00	10	IT
103	will Johnson	75000.00	40	TIS
103	will Johnson	75000.00	30	HR
103	will Johnson	75000.00	10	IT
104	Chris Brown	55000.00	40	TIS
104	Chris Brown	55000.00	30	HR
104	Chris Brown	55000.00	10	IT
105	Rick White	70000.00	40	TIS
105	Rick White	70000.00	30	HR
105	Rick White	70000.00	10	IT

```
15 rows in set (0.02 sec)
```

EQUI JOIN

```
mysql> CREATE TABLE Students (
->     id INT PRIMARY KEY,
->     name VARCHAR(255),
->     class INT,
->     city VARCHAR(255)
-> );
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE record (
->     id INT ,
->     class INT,
->     city VARCHAR(255)
-> );
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> INSERT INTO record (id, class, city) VALUES
-> (9, 3, 'Delhi'),
-> (10, 2, 'Delhi'),
-> (12, 2, 'Delhi');
Query OK, 3 rows affected (0.02 sec)
```

```
mysql> INSERT INTO Students (id, name, class, city) VALUES
-> (3, 'Hina', 3, 'Delhi'),
-> (4, 'Megha', 2, 'Delhi'),
-> (6, 'Gouri', 2, 'Delhi');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT students.name, students.id, record.class, record.city
-> FROM students
-> JOIN record
-> ON students.city = record.city;
```

name	id	class	city
Gouri	6	3	Delhi
Megha	4	3	Delhi
Hina	3	3	Delhi
Gouri	6	2	Delhi
Megha	4	2	Delhi
Hina	3	2	Delhi
Gouri	6	2	Delhi
Megha	4	2	Delhi
Hina	3	2	Delhi

```
9 rows in set (0.00 sec)
```

NON EQUI JOIN

```
mysql> SELECT students.name, record.id, record.city  
-> FROM students, record  
-> WHERE Students.id < Record.id ;
```

```
+-----+-----+-----+  
| name  | id  | city  |  
+-----+-----+-----+  
| Hina  | 9   | Delhi |  
| Hina  | 10  | Delhi |  
| Hina  | 12  | Delhi |  
| Megha | 9   | Delhi |  
| Megha | 10  | Delhi |  
| Megha | 12  | Delhi |  
| Gouri | 9   | Delhi |  
| Gouri | 10  | Delhi |  
| Gouri | 12  | Delhi |  
+-----+-----+-----+  
9 rows in set (0.00 sec)
```