

Task 1: - Take any dataset and Illustrate Natural Join, Theta Join, Outer Join

1) Natural Join

Existing Table

Students

ID	Admission_No	First Name	Last Name	Age	City
1	3354	Nilesh	Wani	20	Aurangabad
2	2135	Tejas	Pandav	19	Pune
3	4321	Yash	Tupe	18	Mumbai
5	4213	Ujair	Shaha	20	Jalna
7	5112	Abhishek	Jadhav	21	Aurangabad
8	6113	Vedant	Kathar	19	Nashik
9	7555	Kunal	Jajure	18	Jalna
6	8345	Sumit	Gaikwad	20	Goa

Fee

Admission_No	Course_name	Amount_paid
3354	Java	20000
7555	Android	22000
4321	Python	18000
8345	ADBMS	15000
5112	ML	30000

```
SELECT Student.admission_no, Student.first_name, Student.last_name, Fee.course,  
Fee.amount_paid  
FROM Student
```

INNER JOIN Fee

ON Student.admission_no = Fee.admission_no;

Admission_No	First Name	Last Name	Course_name	Amount_paid
3354	Nilesh	Wani	Java	20000
4321	Yash	Tupe	Python	18000
5112	Abhishek	Jadhav	ML	30000
7555	Kunal	Jajure	Android	22000
8345	Sumit	Gaikwad	ADBMS	15000

2) Self-Join

```
SELECT S1.first_name, S2.last_name, S2.city
FROM Student S1, Student S2
WHERE S1.id <> S2.iD AND S1.city = S2.city
ORDER BY S2.city;
```

First Name	Last Name	City
Nilesh	Wani	Aurangabad
Abhishek	Jadhav	Aurangabad

3) Outer Join

1) Left Outer Join

```
SELECT Student.admission_no, Student.first_name, Student.last_name, Fee.course,
Fee.amount_paid
FROM Student
LEFT OUTER JOIN Fee
ON Student.admission_no = Fee.admission_no;
```

Admission_No	First Name	Last Name	Course_name	Amount_paid
3354	Nilesh	Wani	Java	20000
2135	Tejas	Pandav		
4321	Yash	Tupe	Python	18000
4213	Ujair	Shaha		
5112	Abhishek	Jadhav	ML	30000
6113	Vedant	Kathar		
7555	Kunal	Jajure	Android	22000
8345	Sumit	Gaikwad	ADBMS	15000

2) Right Outer Join

```

SELECT Student.admission_no, Student.first_name, Student.last_name, Fee.course,
Fee.amount_paid
FROM Student
RIGHT OUTER JOIN Fee
ON Student.admission_no = Fee.admission_no;

```

Admission_No	First Name	Last Name	Course_name	Amount_paid
3354	Nilesh	Wani	Java	20000
4321	Yash	Tupe	Python	18000
5112	Abhishek	Jadhav	ML	30000
7555	Kunal	Jajure	Android	22000
8345	Sumit	Gaikwad	ADBMS	15000

3) Full Outer Join

```
SELECT Student.admission_no, Student.first_name, Student.last_name, Fee.course, Fee.  
amount_paid  
FROM Student  
FULL OUTER JOIN Fee  
ON Student.admission_no = Fee.admission_no;
```

Admission_No	First Name	Last Name	Course_name	Amount_paid
3354	Nilesh	Wani	Java	20000
2135	Tejas	Pandav	NULL	NULL
4321	Yash	Tupe	Python	18000
4213	Ujair	Shaha	NULL	NULL
5112	Abhishek	Jadhav	ML	30000
6113	Vedant	Kathar	NULL	NULL
7555	Kunal	Jajure	Android	22000
8345	Sumit	Gaikwad	ADBMS	15000

Task 2: - Illustrate set operation like Union, Intersect, Minus on a database

1) Union

```
SELECT * FROM Student_SY  
UNION  
SELECT * FROM Student_TY;
```

ID	Admission_No	First Name	Last Name	Age	City
1	3354	Nilesh	Wani	20	Aurangabad
2	2135	Tejas	Pandav	19	Pune
3	4321	Yash	Tupe	18	Mumbai
9	7555	Kunal	Jajure	18	Jalna

2) UnionAll

```
SELECT * FROM Student_SY  
UNIONALL  
SELECT * FROM Student_TY;
```

ID	Admission_No	First Name	Last Name	Age	City
1	3354	Nilesh	Wani	20	Aurangabad
1	3354	Nilesh	Wani	20	Aurangabad
2	2135	Tejas	Pandav	19	Pune
3	4321	Yash	Tupe	18	Mumbai
9	7555	Kunal	Jajure	18	Jalna
8345	Sumit	Gaikwad	ADBMS	15000	

3) Intersect

```
SELECT * FROM Student_SY  
INTERSECT  
SELECT * FROM Student_TY;
```

ID	Admission_No	First Name	Last Name	Age	City
1	3354	Nilesh	Wani	20	Aurangabad

4) Minus

```
SELECT * FROM Student_SY  
MINUS  
SELECT * FROM Student_TY;
```

ID	Admission_No	First Name	Last Name	Age	City
2	2135	Tejas	Pandav	19	Pune
3	4321	Yash	Tupe	18	Mumbai

Task 2: -

A. Illustrate Nested query for SELECT

```
SELECT *
FROM Student
WHERE admission_no IN (SELECT admission_no
FROM fee
WHERE amount_paid > 22000);
```

Admission_No	First Name	Last Name	Age	City
5112	Abhishek	Jadhav	21	Aurangabad
7555	Kunal	Jajure	18	Jalna

B. Illustrate Nested query for UPDATE

```
UPDATE Fee
SET amount_paid = amount_paid + 2500
WHERE admission_no = (SELECT admission_no FROM Student
WHERE admission_no = 7555 and admission_no = 3354);
SELECT * from fee;
```

Admission_No	Course_name	Amount_paid
3354	Java	22500
7555	Android	24500
4321	Python	18000
8345	ADBMS	15000

C. Illustrate Nested query for DELETE

DELETE FROM Student

WHERE admission_no= (SELECT admission_no FROM Fee

WHERE admission_no =3354);

Conclusion: -

Date of Performance by Student	Date of Assessment by Staff	Staff Signature	Remark