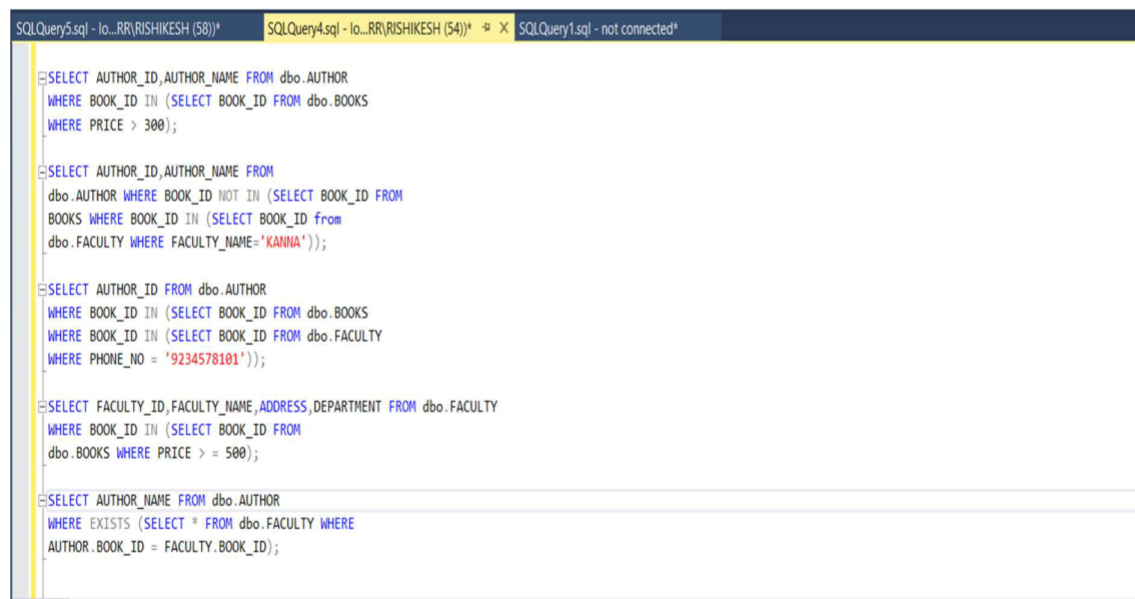# Lab Assignment -4

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Roll No. : 19BCS025

Questions:

1. Write 5 Nested Queries for your respective database- the queries should not be very similar like just changing the where clause or just building all the queries on only one or two tables etc. The queries should make sense, it should cover most part of your database tables.


```sql
SELECT AUTHOR_ID,AUTHOR_NAME FROM dbo.AUTHOR
WHERE BOOK_ID IN (SELECT BOOK_ID FROM dbo.BOOKS
WHERE PRICE > 300);

SELECT AUTHOR_ID,AUTHOR_NAME FROM
dbo.AUTHOR WHERE BOOK_ID NOT IN (SELECT BOOK_ID FROM
BOOKS WHERE BOOK_ID IN (SELECT BOOK_ID from
dbo.FACULTY WHERE FACULTY_NAME='KANNA'));

SELECT AUTHOR_ID FROM dbo.AUTHOR
WHERE BOOK_ID IN (SELECT BOOK_ID FROM dbo.BOOKS
WHERE BOOK_ID IN (SELECT BOOK_ID FROM dbo.FACULTY
WHERE PHONE_NO = '9234578101'));

SELECT FACULTY_ID,FACULTY_NAME,ADDRESS,DEPARTMENT FROM dbo.FACULTY
WHERE BOOK_ID IN (SELECT BOOK_ID FROM
dbo.BOOKS WHERE PRICE > = 500);

SELECT AUTHOR_NAME FROM dbo.AUTHOR
WHERE EXISTS (SELECT * FROM dbo.FACULTY WHERE
AUTHOR.BOOK_ID = FACULTY.BOOK_ID);
```

OUTPUT

	AUTHOR_ID	AUTHOR_NAME
1	4101	G TIWANI
2	4102	HC VARMA
3	4103	ANITHA RAMALINGA
4	4110	ABRAHAM

	AUTHOR_ID	AUTHOR_NAME
1	4102	HC VARMA
2	4103	ANITHA RAMALINGA
3	4104	RAY
4	4105	JACK FELENDER
5	4110	ABRAHAM

	AUTHOR_ID
1	4101

	FACULTY_ID	FACULTY_NAME	ADDRESS	DEPARTMENT
1	1112	HARSHIT	MANIPUR	PHYSICS
2	1113	KANNA	MANNEMKONDA	MATHS
3	1114	HARI	SOURATRA	ETHICS

	AUTHOR_NAME
1	G TIWANI

Query executed successfully.   localhost (15.0 RTM) LAPTOP-NDNABGRR\RISHIK... Library 00:00:00 14 rows

2. Illustrate how we can use Concat and As operators in SQL (minimum 3 queries)

```
select concat (BOOK_NAME,' WRITTEN BY ', AUTHOR_NAME) as BOOK_DETAILS from dbo.BOOKS
SELECT AUTHOR_NAME, AUTHOR_ADDRESS AS AUTHOR_DETAILS FROM DBO.AUTHOR
SELECT TOP 2 CONCAT(STUDENT_ID, ', ',STUDENT_NAME,', ',MOBILE_NO,', ',ADDRESS) AS STUDENT_INFO FROM dbo.STUDENT WHERE BRANCH = 'CSE';
```

OUTPUT

	BOOK_DETAILS
1	CONCEPT OF PHYSICS WRITTEN BY HC VARMA
2	CINGAGE WRITTEN BY G TIWANI
3	LET US C WRITTEN BY YASHAVANT KANETKAR
4	MACHINE LEARNING WRITTEN BY TOM M MITCHELL
5	MACHINE LEARNING WRITTEN BY JACK FELENDER
6	VECTOR ALGEBRA WRITTEN BY ANITHA RAMALINGA
7	FEAR OF FLYINGS WRITTEN BY RAY
8	DATABASE SYSTEMS WRITTEN BY ABRAHAM

	AUTHOR_NAME	AUTHOR_DETAILS
1	G TIWANI	NULL
2	HC VARMA	NULL
3	ANITHA RAMALINGA	RANCHI JHARKAND
4	RAY	CANADA
5	JACK FELENDER	NULL
6	ABRAHAM	YALE UNIVERSITY

	STUDENT_INFO
1	9001, RISHIKESH, 9390360262, MAKTHAL
2	9003, SRAVAN, 9503946121, WARANGAL

Query executed successfully.   localhost (15.0 RTM) LAPTOP-NDNABGRR\RISHIK... Library 00:00:00 16 rows

3. Illustrate all the Comparison operator (2 queries for each operator)

```sql
SELECT BOOK_ID, BOOK_NAME,AUTHOR_NAME FROM dbo.BOOKS WHERE NO_OF_BOOKS= 4;
SELECT TOP 3 BOOK_NAME FROM DBO.BOOKS WHERE SUBJECT_CODE = 'CS301';
SELECT FACULTY_ID FROM dbo.FACULTY WHERE FACULTY_NAME <> 'KANNA';
SELECT TOP 2 STAFF_ID, STAFF_NAME FROM dbo.STAFF WHERE ADDRESS <> 'KOPPAL';
SELECT STAFF_NAME,STAFF_ID FROM dbo.STAFF WHERE SALARY > 1000;
SELECT BOOK_ID, CONCAT(BOOK_NAME,', ',SUBJECT_CODE,', ',LOCATION) AS DETAILS FROM dbo.BOOKS WHERE NO_OF_BOOKS > 2;
SELECT TOP 7 STAFF_NAME,STAFF_ID FROM dbo.STAFF WHERE SALARY < 100000;
SELECT BOOK_ID, CONCAT(BOOK_NAME,', ',SUBJECT_CODE,', ',LOCATION) AS DETAILS FROM dbo.BOOKS WHERE NO_OF_BOOKS < 7;
SELECT TOP 12 STAFF_NAME,STAFF_ID FROM dbo.STAFF WHERE SALARY >=45000;
SELECT BOOK_ID, CONCAT(BOOK_NAME,', ',SUBJECT_CODE,', ',LOCATION) AS DETAILS FROM dbo.BOOKS WHERE NO_OF_BOOKS>= 7;
SELECT STAFF_ID, STAFF_NAME FROM dbo.STAFF WHERE SALARY <= 55000;
SELECT BOOK_ID, CONCAT(BOOK_NAME,', ',SUBJECT_CODE,', ',LOCATION) AS DETAILS FROM dbo.BOOKS WHERE NO_OF_BOOKS<= 10;
```

OUTPUT

4. Illustrate Logical operators except ANY, ALL and Like (2 queries for each operator)


```sql
SELECT BOOK_ID, BOOK_NAME, PRICE FROM dbo.BOOKS WHERE NO_OF_BOOKS>= 2 AND SUBJECT_CODE = 'CS301';
SELECT STUDENT_NAME FROM dbo.STUDENT WHERE STUDENT_ID>=9001 AND BRANCH = 'CSE';
SELECT BOOK_ID, BOOK_NAME, PRICE FROM dbo.BOOKS WHERE NO_OF_BOOKS >= 4 OR SUBJECT_CODE = 'CS301';
SELECT STUDENT_NAME FROM dbo.STUDENT WHERE STUDENT_ID>=9003 OR BRANCH = 'ECE';
SELECT STAFF_ID,STAFF_NAME FROM dbo.STAFF WHERE NOT SALARY >= 45000;
SELECT AUTHOR_ID,AUTHOR_NAME FROM dbo.AUTHOR WHERE NOT AUTHOR_ADDRESS='CANADA';
SELECT FACULTY_ID,FACULTY_NAME FROM dbo.FACULTY WHERE DEPARTMENT IN ('PHYSICS', 'MATHS');
SELECT BOOK_NAME FROM dbo.BOOKS WHERE SUBJECT_CODE IN ('CS301', 'MA102');
SELECT STAFF_ID,STAFF_NAME,STAFF_DESIGNATION FROM dbo.STAFF WHERE SALARY BETWEEN 50000 AND 100000;
SELECT STUDENT_ID, CONCAT(STUDENT_NAME,', ',MOBILE_NO,', ',ADDRESS) AS STUDENT_DETAILS FROM dbo.STUDENT WHERE STUDENT_ID BETWEEN 9002 AND 9010;
```

OUTPUT

	BOOK_ID	BOOK_NAME	PRICE
1	7004	MACHINE LEARNING	199
2	7005	MACHINE LEARNING	219
3	7008	DATABASE SYSTEMS	1090

	STUDENT_NAME
1	RISHIKESH
2	SRAVAN

	BOOK_ID	BOOK_NAME	PRICE
1	7001	CONCEPT OF PHYSICS	450
2	7002	CINGAGE	720
3	7003	LET US C	533
4	7004	MACHINE LEARNING	199
5	7005	MACHINE LEARNING	219
6	7006	VECTOR ALGEBRA	780
7	7008	DATABASE SYSTEMS	1090

	STUDENT_NAME
1	SANTOSH KUMAR
2	SRAVAN
3	KARAN
4	HARRSHIT

	STAFF_ID	STAFF_NAME
1	1106	AISHWARYA
2	1115	AJAY
3	1116	KOUSHIK
4	1118	SRIKAR
5	1124	SUMAN
6	1126	SIMARN

Query executed successfully. localhost (15.0 RTM) | LAPTOP-NDNABGRR\RISHIK... | Library | 00:00:00 | 4

	AUTHOR_ID	AUTHOR_NAME
1	4103	ANITHA RAMALINGA
2	4110	ABRAHAM

	FACULTY_ID	FACULTY_NAME
1	1112	HARSHIT
2	1113	KANNA

	BOOK_NAME
1	CINGAGE
2	MACHINE LEARNING
3	MACHINE LEARNING
4	DATABASE SYSTEMS

	STAFF_ID	STAFF_NAME	STAFF_DESIGNATION
1	1101	ASHWIN	ACCOUNTANT
2	1102	RAGHAVENDRA	FEE_SECTION
3	1103	AKASH	TECHNICAL_DEPAR...
4	1109	SOMANNA	WEBDEVELOPMEN...
5	1110	BHARATH	STUDENT
6	1114	HEMANTH	ASSISTANT_LAB
7	1120	KALA	LAB_JL
8	1135	RAJU	TECHNICAL_DEPAR...

	STUDENT_ID	STUDENT_DETAILS
1	9002	SANTOSH KUMAR, 9390360262, NAKIRAKAL
2	9003	SRAVAN, 9503946121, WARANGAL
3	9004	KARAN, 9345678210, LADAKH
4	9005	HARRSHIT, 9555455978, SINDANOOR

Query executed successfully. localhost (15.0 RTM) | LAPTOP-NDNABGRR\RISHIK... | Library | 00:00:00 | 42 rows