

DATABASE MANAGEMENT SYSTEM

LAB ASSIGNMENT – 04

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Q1). 5 NESTED QUERIES:

```
select * from course
where i_id IN (select i_id from instructor
where salary > 55000);
```

```
select first_name,last_name from instructor
where i_id IN (select i_id from course
where dept_name = 'CSE');
```

```
select * from instructor
where i_id IN (select i_id from course
where dept_name IN (select dept_name from student
where age>18));
```

```
select * from department
where dept_name IN (select dept_name from instructor
where i_id IN (select i_id from course
where course_id < 120));
```

```
select * from course
where dept_name IN (select dept_name from student
where age = 18 );
```

T11_19bcs077.sql - localhost.master (DESKTOP-2EV6JDK\DELL (57)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

master | Execute | New Query |

Object Explorer

Results Messages

course_id	dept_name	i_id	duration	course_name
101	CSE	1	1	Programming
103	CSE	3	1	OS
104	CSE	4	2	CircuitAnalysis
105	CSE	11	1	DigitalLogic
106	CSE	12	1	DBMS
108	CSE	13	1	PC
109	CSE	14	1	Ethics
110	CSE	16	1	Discrete math

first_name	last_name
Liam	Smith
Ethan	Johnson
Jacob	Brown
Michal	Jones
Alexander	Thomas
William	Lee
Greyson	Harris

i_id	dept_name	first_name	last_name	salary	age
1	CSE	Liam	Smith	60000	36
2	CSE	Ethan	Johnson	55000	32
3	CSE	Jacob	Brown	65000	40
4	CSE	Michal	Jones	60000	35
11	CSE	Alexander	Thomas	60000	36
12	CSE	William	Lee	60000	35

dept_name	dept_location
CSE	BlockA
CSE	BlockB

course_id	dept_name	i_id	duration	course_name
101	CSE	1	1	Programming
102	CSE	2	1	DataStructure
103	CSE	3	1	OS
104	CSE	4	2	CircuitAnaly...
105	CSE	11	1	DigitalLogic
106	CSE	12	1	DBMS
107	CSE	20	1	Physics
108	CSE	13	1	PC
109	CSE	14	1	Ethics

Query executed successfully.

localhost (15.0 RTM) DESKTOP-2EV6JDK\DELL (57) master 00:00:00 39 rows

Matches: Type here to search Ln 196 Col 1 Ch 1 INS 7:40 PM 2/27/2021

Q2). HOW TO USE CONCAT AND AS IN SQL:

```
select concat(first_name,' ',last_name)as Full_name from instructor;
```

```
SELECT s_id , dept_name AS student_details FROM student
```

```
SELECT TOP 1 CONCAT(course_id,' ',course_name) AS course_details FROM course
```

```
where dept_name = 'EEE';
```

T11_19bcs077.sql - localhost.master (DESKTOP-2EV6JDK\DELL (57)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

master | Execute | New Query |

Object Explorer

Results Messages

Full_name
Liam Smith
Ethan Johnson
Jacob Brown
Michal Jones
Benjamin Garcia
Daniel Miller
Carter Davis
Jaxon Lopez
Henry Wilson
Noah Andreson

s_id	student_details
1000	CSE
1001	CSE
1002	CSE
1003	CSE
1004	CSE
1005	CSE
1006	CSE
1007	CSE
1008	CSE
1009	CSE
1010	CSE
1011	CSE
1012	CSE
1013	CSE
1014	CSE

course_details
121.C Programming

Query executed successfully.

localhost (15.0 RTM) DESKTOP-2EV6JDK\DELL (57) master 00:00:00 51 rows

Ready Type here to search Ln 218 Col 1 Ch 1 INS 8:26 PM 2/27/2021

Q3). COMPARISON OPERATOR: ➤ USING “>” SYMBOL

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the database 'master' is selected. Two queries are run in the 'T11_19bc077.sql' window:

```
select * from course
where course_id > 104;

select * from student
where s_id > 1020;
```

The results show data from the 'course' and 'student' tables.

course_id	dept_name	i_id	duration	course_name
105	ECE	31	4	ECONOMICS
106	CSE	46	4	ETHICS
107	CSE	51	4	DS
108	EEE	19	4	OS
111	English	46	1	PC
112	ABCDEFG	46	2	PC

s_id	first_name	last_name	age	dept_name
1021	David	Brown	19	CSE
1022	Bella	Smith	19	CSE
1023	Juliana	Tyler	19	CSE
1024	Alexis	Moore	18	CSE
1025	Gloria	Jackson	19	CSE
1026	Gemma	White	19	CSE
1027	Charlie	Harris	19	CSE
1028	Tristin	Walker	18	CSE
1029	Valentina	Young	19	CSE

Query executed successfully.

➤ USING “>=” SYMBOL

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the database 'master' is selected. Two queries are run in the 'T11_19bc077.sql' window:

```
select * from course
where course_id >= 104;

select * from student
where s_id >= 1011;
```

The results show data from the 'course' and 'student' tables.

course_id	dept_name	i_id	duration	course_name
104	EEE	21	4	MATHS
105	ECE	31	4	ECONOMICS
106	CSE	46	4	ETHICS
107	CSE	51	4	DS
108	EEE	19	4	OS
111	English	46	1	PC
112	ABCDEFG	46	2	PC

s_id	first_name	last_name	age	dept_name
1011	Joey	Murphy	19	CSE
1012	Hector	Baily	19	CSE
1013	Merlin	Bell	19	CSE
1014	Luisa	Cox	19	CSE
1015	Jhanny	Evans	19	CSE
1016	Hanna	Murray	19	CSE
1017	Donna	Gomez	19	CSE
1018	Scott	Walkin	19	CSE
1019	Julie	Rivera	19	CSE
1020	Martin	Bier	19	CSE
1021	David	Brown	19	CSE
1022	Bella	Smith	19	CSE
1023	Juliana	Tyler	19	CSE
1024	Alexis	Moore	18	CSE
1025	Gloria	Jackson	19	CSE
1026	Gemma	White	19	CSE
1027	Charlie	Harris	19	CSE
1028	Tristin	Walker	18	CSE
1029	Valentina	Young	19	CSE

Query executed successfully.

➤ USING “<” SYMBOL

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the connection is to 'localhost (SQL Server 15.0.2080.9 - DESKTOP-2EV6JDK\DELL (77))'. The 'master' database is selected. In the 'T11_19bcs077.sql' query window, the following code is run:

```
select * from course
where course_id < 104;
select * from student
where s_id < 1020;
```

The results show two sets of data. The first set from the 'course' table has 3 rows:

course_id	dept_name	i_id	duration	course_name
101	CSE	24	4	DBMS
102	ECE	36	4	CA
103	EEE	14	4	CPROGRAM

The second set from the 'student' table has 20 rows:

s_id	first_name	last_name	age	dept_name
1000	Aidan	Buller	19	CSE
1001	Teresa	Simmons	18	CSE
1002	Gabriela	Flores	19	CSE
1003	Harold	Bennett	19	CSE
1004	Conner	Sanders	18	CSE
1005	Peter	Hughes	19	CSE
1006	Ashley	Bryant	18	CSE
1007	Nicole	Patterson	19	CSE
1008	Hunter	Matthews	18	CSE
1009	Shane	Ward	18	CSE
1010	Alice	Jenkins	19	CSE
1011	Joey	Murphy	19	CSE
1012	Hector	Baily	19	CSE
1013	Marlin	Bell	19	CSE
1014	Luisa	Cox	19	CSE
1015	Jhonnny	Evans	19	CSE
1016	Hanna	Murray	19	CSE
1017	Donna	Gomez	19	CSE
1018	Scott	Watkin	19	CSE
1019	Julie	Rivera	19	CSE

At the bottom, a message indicates: 'Query executed successfully.'

➤ USING “<=” SYMBOL

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the connection is to 'localhost (SQL Server 15.0.2080.9 - DESKTOP-2EV6JDK\DELL (77))'. The 'master' database is selected. In the 'T11_19bcs077.sql' query window, the following code is run:

```
select * from course
where course_id <= 104;
select * from student
where s_id <= 1020;
```

The results show two sets of data. The first set from the 'course' table has 4 rows:

course_id	dept_name	i_id	duration	course_name
101	CSE	24	4	DBMS
102	ECE	36	4	CA
103	EEE	14	4	CPROGRAM
104	EEE	21	4	MATHS

The second set from the 'student' table has 20 rows:

s_id	first_name	last_name	age	dept_name
1000	Aidan	Buller	19	CSE
1001	Teresa	Simmons	18	CSE
1002	Gabriela	Flores	19	CSE
1003	Harold	Bennett	19	CSE
1004	Conner	Sanders	18	CSE
1005	Peter	Hughes	19	CSE
1006	Ashley	Bryant	18	CSE
1007	Nicole	Patterson	19	CSE
1008	Hunter	Matthews	18	CSE
1009	Shane	Ward	18	CSE
1010	Alice	Jenkins	19	CSE
1011	Joey	Murphy	19	CSE
1012	Hector	Baily	19	CSE
1013	Marlin	Bell	19	CSE
1014	Luisa	Cox	19	CSE
1015	Jhonnny	Evans	19	CSE
1016	Hanna	Murray	19	CSE
1017	Donna	Gomez	19	CSE
1018	Scott	Watkin	19	CSE
1019	Julie	Rivera	19	CSE
1020	Martin	Bent	19	CSE

At the bottom, a message indicates: 'Query executed successfully.'

➤ USING “ != ” SYMBOL

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the database 'master' is selected. In the center pane, there are two results grids. The top grid shows data from the 'course' table where the department name is not 'EEE'. The bottom grid shows data from the 'student' table where the age is not 19. Both queries were executed successfully.

```
select * from course
where dept_name != 'EEE';
select * from student
where age != 19;
```

course_id	dept_name	i_id	duration	course_name
101	CSE	24	4	DBMS
102	ECE	36	4	CA
105	ECE	31	4	ECONOMICS
106	CSE	46	4	ETHICS
107	CSE	51	4	DS
111	English	46	1	PC
112	ABCDEFG	46	2	PC

s_id	first_name	last_name	age	dept_name
1001	Teresa	Simmons	18	CSE
1004	Conner	Sanders	18	CSE
1006	Ashley	Bryant	18	CSE
1008	Hunter	Matthews	18	CSE
1009	Shane	Ward	18	CSE
1024	Alexis	Moore	18	CSE
1028	Tristan	Walker	18	CSE

Query executed successfully.

➤ USING “ = ” SYMBOL

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the database 'master' is selected. In the center pane, there are two results grids. The top grid shows data from the 'instructor' table where the salary is 60000. The bottom grid shows data from the 'student' table where the age is 19. Both queries were executed successfully.

```
select * from instructor
where salary = 60000;
select * from student
where age = 19;
```

i_id	dept_name	first_name	last_name	salary	age
1	CSE	Liam	Smith	60000	36
2	CSE	Michal	Jones	60000	35
3	CSE	Daniel	Miller	60000	38
4	CSE	Jaxon	Lopez	60000	38
5	CSE	Henry	Wilson	60000	35
6	CSE	Alexander	Thomas	60000	36
7	CSE	William	Lee	60000	35
8	CSE	Daniel	Sanchez	60000	38
9	CSE	Owen	Lewis	60000	35
10	CSE	Carter	Allen	60000	39

s_id	first_name	last_name	age	dept_name
1000	Aidan	Buller	19	CSE
1002	Gabriel	Flores	19	CSE
1003	Harold	Bennett	19	CSE
1005	Peter	Hughes	19	CSE
1007	Nicole	Patterson	19	CSE
1010	Alice	Jenkins	19	CSE
1011	Joey	Murphy	19	CSE
1012	Hector	Baily	19	CSE
1013	Marlin	Bell	19	CSE
1014	Luis	Cox	19	CSE
1015	Johnny	Evan	19	CSE
1016	Hanna	Murray	19	CSE
1017	Donna	Gomez	19	CSE
1018	Scar	Walkin	19	CSE
1019	Julie	Rivera	19	CSE
1020	Martin	Blair	19	CSE
1021	David	Brown	19	CSE
1022	Bella	Smith	19	CSE
1023	Juliana	Taylor	19	CSE

Query executed successfully.

Q4). LOGICAL OPERATORS:

➤ USING “OR”

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the 'master' database is selected. In the center pane, two queries are run:

```
SELECT * FROM instructor WHERE i_id > 10 OR salary > 60000;
SELECT * FROM course WHERE course_id < 110 OR duration = 2;
```

The results are displayed in two tables:

i_id	dept_name	first_name	last_name	salary	age
3	CSE	Jacob	Brown	65000	40
10	CSE	Nooh	Andreson	65000	42
11	CSE	Alexander	Thomas	60000	36
12	CSE	William	Lee	60000	35
13	CSE	Greyson	Harris	65000	42
14	CSE	Daniel	Sanchez	60000	38
15	CSE	Ryan	Clark	55000	29
16	CSE	Owen	Lewis	60000	35
17	CSE	Elijah	Walker	65000	40
18	CSE	Carter	Allen	60000	39
19	CSE	Luke	Wright	65000	43
20	CSE	Colob	Hill	55000	29

course_id	dept_name	i_id	duration	course_name
101	CSE	1	1	Programming
102	CSE	2	1	DataStructure
103	CSE	3	1	OS
104	CSE	4	2	CircuitAnalysis
105	CSE	11	1	DigitalLogic
106	CSE	12	1	DBMS
107	CSE	20	1	Physics
108	CSE	13	1	PC
109	CSE	14	1	Ethics

At the bottom, a message indicates: "Query executed successfully." The status bar shows: "localhost (15.0 RTM) | DESKTOP-2EV6JDK\DELL (57) | master | 00:00:00 | 21 rows".

➤ USING “AND”

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the 'master' database is selected. In the center pane, two queries are run:

```
SELECT * FROM instructor WHERE i_id > 10 AND salary > 60000;
SELECT * FROM course WHERE course_id < 110 AND duration = 2;
```

The results are displayed in two tables:

i_id	dept_name	first_name	last_name	salary	age
13	CSE	Greyson	Harris	65000	42
17	CSE	Elijah	Walker	65000	40
19	CSE	Luke	Wright	65000	43

course_id	dept_name	i_id	duration	course_name
104	CSE	4	2	CircuitAnalysis

At the bottom, a message indicates: "Query executed successfully." The status bar shows: "localhost (15.0 RTM) | DESKTOP-2EV6JDK\DELL (57) | master | 00:00:00 | 4 rows".

➤ USING “NOT”

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the database 'master' is selected. In the center pane, a query window titled 'T11_19bc077.sql - localhost.master (DESKTOP-2EV6JDK\DELL (57))' contains the following SQL code:

```
SELECT * FROM department WHERE NOT dept_name = 'EEE';
SELECT * FROM course WHERE NOT duration = 1;
```

The results pane shows two rows from the 'department' table:

dept_name	dept_location
CSE	BlockA
ECE	BlockB

Below this, a single row from the 'course' table is shown:

course_id	dept_name	i_id	duration	course_name
104	CSE	4	2	CircuitAnalysis

The status bar at the bottom indicates 'Query executed successfully.' and shows the session details: 'localhost (15.0 RTM) | DESKTOP-2EV6JDK\DELL (57) | master | 00:00:00 | 3 rows'.

➤ USING “IN”

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the database 'master' is selected. In the center pane, a query window titled 'T11_19bc077.sql - localhost.master (DESKTOP-2EV6JDK\DELL (57))' contains the following SQL code:

```
SELECT * FROM student WHERE age IN (17,18)
SELECT * FROM department WHERE dept_name IN ('ECE', 'EEE')
```

The results pane shows seven rows from the 'student' table:

s_id	first_name	last_name	age	dept_name
1001	Teresa	Simmons	18	CSE
1004	Conner	Sanders	18	CSE
1006	Ashley	Bryant	18	CSE
1008	Hunter	Mathews	18	CSE
1009	Shane	Ward	18	CSE
1024	Alexis	Moore	18	CSE
1028	Tristin	Walker	18	CSE

Below this, two rows from the 'department' table are shown:

dept_name	dept_location
ECE	BlockB
EEE	BlockC

The status bar at the bottom indicates 'Query executed successfully.' and shows the session details: 'localhost (15.0 RTM) | DESKTOP-2EV6JDK\DELL (57) | master | 00:00:00 | 9 rows'.

➤ USING “BETWEEN”

The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the connection is to localhost (SQL Server 15.0.2080.9 - DESKTOP-2EV6JDK\DELL (57)). The master database is selected. In the Results pane, two queries are run:

```
SELECT * FROM instructor WHERE salary BETWEEN 60000 AND 80000
SELECT * FROM student WHERE age BETWEEN 19 AND 20
```

The first query returns 15 rows from the instructor table, and the second query returns 15 rows from the student table. Both results are displayed in a grid format.

At the bottom of the Results pane, a message says "Query executed successfully." The status bar at the bottom right shows "localhost (15.0 RTM) DESKTOP-2EV6JDK\DELL (57) master 00:00:00 38 rows".