

Lab Assignment -3

Name : Dasari Rishikesh

Roll No. : 19bcs035

Questions:

1. Add, Modify and Delete Column using Alter Command.



The screenshot shows a SQL Server Enterprise Manager window titled "SQLQuery2.sql - lo...RR\RISHIKESH (53))". The query editor contains the following SQL code:

```
SELECT * FROM dbo.STAFF;  
  
ALTER TABLE dbo.STAFF  
ADD CONTACT_DETAILS VARCHAR(45);
```

The "Results" pane at the bottom shows the columns of the "STAFF" table: STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE, and CONTACT_DETAILS.



The screenshot shows the same SQL Server Enterprise Manager window. The query editor now contains the following SQL code:

```
ALTER TABLE dbo.STAFF  
ALTER COLUMN CONTACT_DETAILS VARCHAR(60);
```

The "Messages" pane at the bottom shows the following output:

```
Commands completed successfully.  
Completion time: 2021-02-19T16:49:36.5972179+05:30
```

```

SQLQuery2.sql - lo...RR\RISHIKESH (53)*
ALTER TABLE dbo.STAFF
DROP COLUMN CONTACT_DETAILS;

SELECT * FROM dbo.STAFF;

```

100 %

Results Messages

STAFF_ID	STAFF_NAME	STAFF_DESIGNATION	SALARY	ADDRESS	JOIN_DATE
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2. Insert 20 Employees Data into all the tables. Use all the 3 methods that I have showcased.

```

SQLQuery5.sql - lo...RR\RISHIKESH (60)*
INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1101, 'ASHWIN', 'ACCOUNTANT', 57000, 'KOPPAL', NULL);

INSERT INTO DBO.STAFF
VALUES(1102, 'RAGHAVENDRA', 'FEE_SECTION', 57000, 'HYDERABAD', '2008-02-14');

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
(SELECT STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE FROM Hospital.dbo.STAFF WHERE STAFF_ID = 1100);

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1103, 'AKASH', 'TECHNICAL_DEPARTMENT', 87000, 'BIDAR', '2021-01-29');

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1104, 'NARSAMMA', 'CLEANING', 5000, 'KALVAL', '2021-02-15');

INSERT INTO DBO.STAFF
VALUES(1105, 'KAMLESH', 'LIBRARIAN', 45000, 'HUBLI', NULL);

INSERT INTO DBO.STAFF
VALUES(1106, 'AISHWARYA', 'ELECTRONICS_3L', 40000, 'GULBARGA', '2020-11-16');

INSERT INTO DBO.STAFF
VALUES(1107, 'VAISHNAVI', 'CSE_HR', 170000, 'BALLARI', '2012-08-01');

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1108, 'HASHWANTH', 'TRANSPORT', NULL, NULL, NULL);

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1109, 'SOMANNA', 'WEBDEVELOPMENT_DEPARTMENT', 57000, 'KOPPAL', NULL);

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1110, 'BHARATH', 'STUDENT', 57000, 'KOPPAL', NULL);

SQLQuery5.sql - lo...RR\RISHIKESH (60)*
INSERT INTO DBO.STAFF
VALUES(1111, 'MANI', 'STUDENT', NULL, 'PALEH', NULL);

INSERT INTO DBO.STAFF
VALUES(1112, 'KULKARNI', 'SUB_REGISTER', 120000, 'KAMMAM', '2016-07-22');

INSERT INTO DBO.STAFF
VALUES(1113, 'MUKESH', 'TECHNICAL_DEPARTMENT', NULL, NULL, '2015-02-24');

INSERT INTO DBO.STAFF
VALUES(1114, 'HEMANTH', 'ASSISTANT_LAB', 71000, NULL, '2019-12-31');

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1115, 'AJAY', 'MECHANICAL_DEPARTMENT', 9000, NULL, '2017-10-09');

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1116, 'KOUSHIK', 'CS_DEPARTMENT', 22000, 'HIMACHAL', NULL);

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1117, 'BHANU', 'REGISTER', 211000, 'LUKNOW', '2011-12-27');

INSERT INTO DBO.STAFF
VALUES(1118, 'SRIKAR', 'PUNE', 9800, 'PUNE', NULL);

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1119, 'SRAVAN', 'DIRECTOR', 210000, 'CANADA', '2010-01-01');

INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1120, 'KALA', 'LAB_3L', 89000, 'WARANGAL', '2011-04-17');

```

SQLQuery5.sql - lo...RR\RISHIKESH (60))* × SQLQuery6.sql - lo...RR\RISHIKESH (65))*

SELECT * FROM DBO.STAFF

100 %

Results Messages

	STAFF_ID	STAFF_NAME	STAFF_DESIGNATION	SALARY	ADDRESS	JOIN_DATE
1	1100	MALAY	ALGORITHMS	123000	AGRA	2015-04-15
2	1101	ASHWIN	ACCOUNTANT	57000	KOPPAL	NULL
3	1102	RAGHAVENDRA	FEE_SECTION	57000	HYDERABAD	2008-02-14
4	1103	AKASH	TECHNICAL_DEPARTMENT	87000	BIDAR	2021-01-29
5	1104	NARSAMMA	CLEANING	5000	KALVAL	2021-02-15
6	1105	KAMLESH	LIBRARIAN	45000	HUBLI	NULL
7	1106	AISHWARYA	ELECTRONICS_JL	40000	GULBARGA	2020-11-16
8	1107	VAISHNAVI	CSE_HR	170000	BALLARI	2012-08-01
9	1108	HASWANTH	TRANSPORT	NULL	NULL	NULL
10	1109	SOMANNA	WEBDEVELOPMENT_DEPARTMENT	57000	KOPPAL	NULL
11	1110	BHARATH	STUDENT	57000	KOPPAL	NULL
12	1111	MANI	STUDENT	NULL	PALEM	NULL
13	1112	KULKARNI	SUB_REGISTER	120000	KAMMAM	2016-07-22
14	1113	MUKESH	TECHNICAL_DEPARTMENT	NULL	NULL	2015-02-24
15	1114	HEMANTH	ASSISTANT_LAB	71000	NULL	2019-12-31
16	1115	ALIY	MECHANICAL_DEPARTMENT	9000	NULL	2017-10-09
17	1116	KOUSHIK	CS_DEPARTMENT	22000	HIMACHAL	NULL
18	1117	BHANIJ	REGISTER	211000	LUKNOW	2011-12-27
19	1118	SRIKAR	PUNE	9800	PUNE	NULL
20	1119	SRAVAN	DIRECTOR	210000	CANADA	2010-01-01
21	1120	KALA	LAB_JL	89000	WARANGAL	2011-04-17

3. Show Violation of Primary Key, Unique, Not Null and default key constraints through insertion.

SQLQuery5.sql - lo...RR\RISHIKESH (60))* × SQLQuery6.sql - lo...RR\RISHIKESH (65))*

```

/*PRIMARY KEY VIOLATION*/
INSERT INTO DBO.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1120, 'STUART', 'STUDENT', NULL, 'MAHABUBNAGAR', NULL);

```

100 %

Messages

Msg 2627, Level 14, State 1, Line 68
Violation of PRIMARY KEY constraint 'PK_STAFF_EEFD934E6F931669'. Cannot insert duplicate key in object 'dbo.STAFF'. The duplicate key value is (1120).
The statement has been terminated.

Completion time: 2021-02-19T18:13:48.0689386+05:30

100 %

```
SQLQuery9.sql - lo...RR\RISHIKESH (55)) * ❏ ✕
/*UNIQUE KEY (constraint) VIOLATION*/
❏ INSERT INTO dbo.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES (1121, 'SOMANNA', 'LIBRARY_ADMIN', 45000, NULL, NULL);
```

100 % ▾

Messages

Msg 2627, Level 14, State 1, Line 3
Violation of UNIQUE KEY constraints 'UQ_STAFF__7E27B96C2E20077A'. Cannot insert duplicate key in object 'dbo.STAFF'. The duplicate key value is (SOMANNA).
The statement has been terminated.

Completion time: 2021-02-19T19:08:24.1762887+05:30

100 % ▾

```
SQLQuery9.sql - lo...RR\RISHIKESH (55)) * ❏ ✕
/*NOT NULL(constraint) VIOLATION*/
❏ INSERT INTO dbo.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES (1122, NULL, 'LIBRARY_ADMIN', 45000, NULL, NULL);
```

100 % ▾

Messages

Msg 816, Level 14, State 2, Line 3
Cannot insert the value NULL into column 'STAFF_NAME', table 'Library.dbo.STAFF'; column does not allow nulls. INSERT fail.
The statement has been terminated.

Completion time: 2021-02-19T19:22:52.2721902+05:30

```
SQLQuery9.sql - lo...RR(RISHIKESH (55))*  
ALTER TABLE dbo.STAFF  
ADD CONSTRAINT df_ADDRESS  
DEFAULT NULL FOR ADDRESS;  
INSERT INTO dbo.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)  
VALUES (1126, 'SIMARN', 'MAGAZINE_DESIGNER', 400, 'KURNOOL', NULL);
```

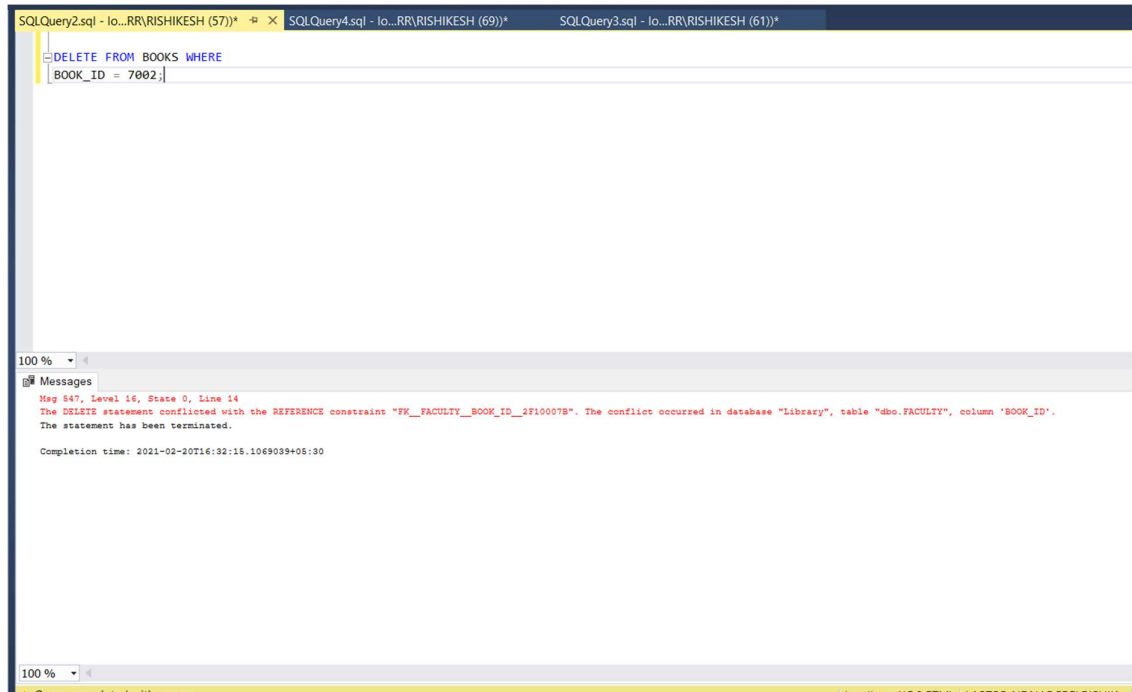
100 %
Messages
(1 row affected)
Completion time: 2021-02-19T19:35:14.0606490+05:30

4. Insert tuples into the table and see how foreign key constraint works if you try to insert into dependent table first.

```
SQLQuery9.sql - lo...RR(RISHIKESH (55))*  
INSERT INTO dbo.FACULTY  
VALUES (2001, 'CHANDRA SHEKAR', 'ANATHAPUR', '7890537211', 'PHYSICS', 5002);
```

100 %
Messages
Msg 547, Level 16, State 0, Line 19
The INSERT statement conflicted with the FOREIGN KEY constraint "FK_FACULTY_BOOK_ID_2F10007B". The conflict occurred in database "Library", table "dbo.Books", column "BOOK_ID".
The statement has been terminated.
Completion time: 2021-02-19T19:53:25.7705417+05:30

5. Show Violation of Foreign Key Constraint when you try to delete from a base table. If you get an error explain why deletion gives an error.



The screenshot shows a SQL Server Enterprise Manager window with three tabs: 'SQLQuery2.sql - lo...RR\RISHIKESH (57))', 'SQLQuery4.sql - lo...RR\RISHIKESH (69))', and 'SQLQuery3.sql - lo...RR\RISHIKESH (61))'. The active tab 'SQLQuery2.sql' contains the following SQL statement:

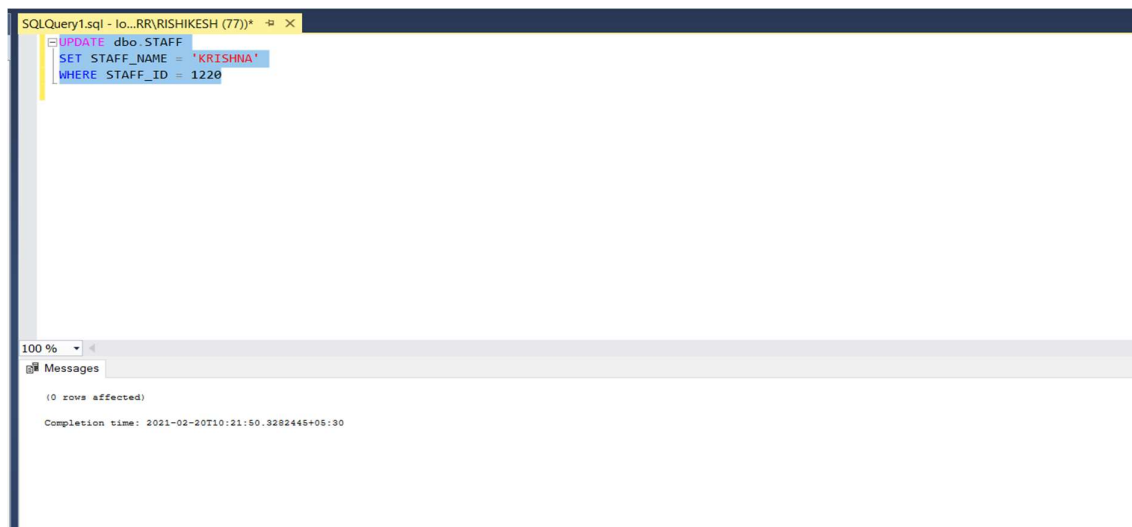
```
DELETE FROM BOOKS WHERE  
BOOK_ID = 7002;
```

Below the query editor, the 'Messages' pane shows the following error message:

```
Msg 547, Level 16, State 0, Line 14  
The DELETE statement conflicted with the REFERENCE constraint "FK_FACULTY_BOOK_ID_2F10007B". The conflict occurred in database "Library", table "dbo.FACULTY", column "BOOK_ID".  
The statement has been terminated.  
Completion time: 2021-02-20T16:32:15.1069039+05:30
```

The deletion is giving an error as it violates referential integrity constraint. First, we need to delete the corresponding tuple from the dependent table and then the base table.

6. Try to update a non-existing entity data and check for error.



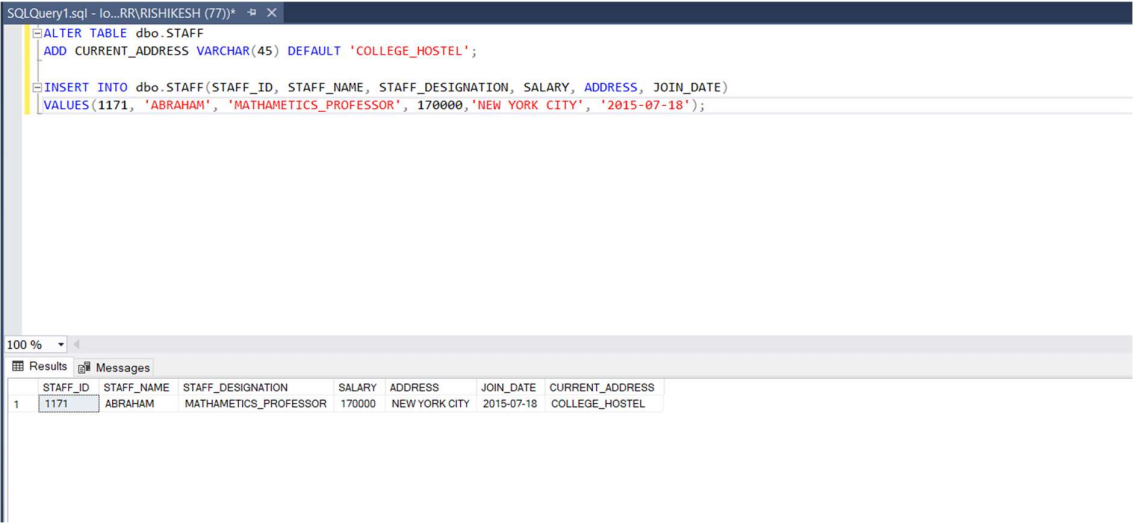
The screenshot shows a SQL Server Enterprise Manager window with a tab: 'SQLQuery1.sql - lo...RR\RISHIKESH (77))'. The active tab 'SQLQuery1.sql' contains the following SQL statement:

```
UPDATE dbo.STAFF  
SET STAFF_NAME = 'KRISHNA'  
WHERE STAFF_ID = 1220
```

Below the query editor, the 'Messages' pane shows the following message:

```
(0 rows affected)  
Completion time: 2021-02-20T10:21:50.3282445+05:30
```

7. Add a column which has default value.



The screenshot shows a SQL query window titled "SQLQuery1.sql - lo...RR\RISHIKESH (77)". The query contains two statements:

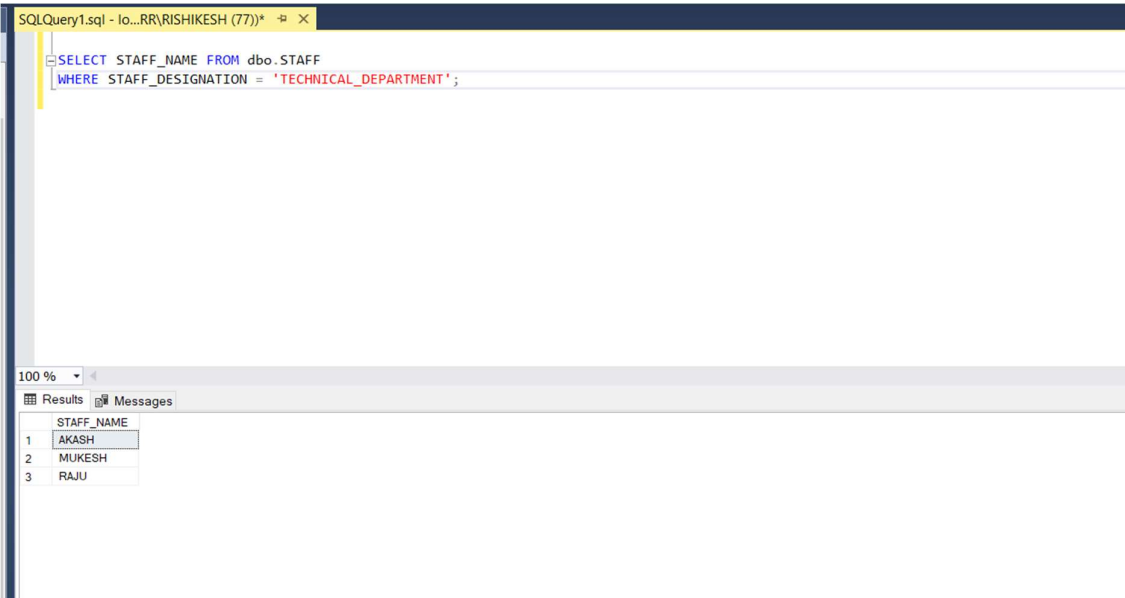
```
ALTER TABLE dbo.STAFF
ADD CURRENT_ADDRESS VARCHAR(45) DEFAULT 'COLLEGE_HOSTEL';

INSERT INTO dbo.STAFF(STAFF_ID, STAFF_NAME, STAFF_DESIGNATION, SALARY, ADDRESS, JOIN_DATE)
VALUES(1171, 'ABRAHAM', 'MATHAMETICS_PROFESSOR', 170000, 'NEW YORK CITY', '2015-07-18');
```

Below the query window, the "Results" tab is active, displaying a table with the following data:

STAFF_ID	STAFF_NAME	STAFF_DESIGNATION	SALARY	ADDRESS	JOIN_DATE	CURRENT_ADDRESS	
1	1171	ABRAHAM	MATHAMETICS_PROFESSOR	170000	NEW YORK CITY	2015-07-18	COLLEGE_HOSTEL

8. 5 Simple Select queries to retrieve data from your database.



The screenshot shows a SQL query window titled "SQLQuery1.sql - lo...RR\RISHIKESH (77)". The query contains a single statement:

```
SELECT STAFF_NAME FROM dbo.STAFF
WHERE STAFF_DESIGNATION = 'TECHNICAL_DEPARTMENT';
```

Below the query window, the "Results" tab is active, displaying a table with the following data:

STAFF_NAME	
1	AKASH
2	MUKESH
3	RAJU

SQLQuery1.sql - lo...RR\RISHIKESH (77))*

```
SELECT TOP 10 * FROM dbo.STAFF
```

100 %

Results Messages

	STAFF_ID	STAFF_NAME	STAFF_DESIGNATION	SALARY	ADDRESS	JOIN_DATE	CURRENT_ADDRESS
1	1100	MALAY	ALGORITHMS	123000	AGRA	2015-04-15	NULL
2	1101	ASHWIN	ACCOUNTANT	57000	KOPPAL	NULL	NULL
3	1102	RAGHAVENDRA	FEE_SECTION	57000	HYDERABAD	2008-02-14	NULL
4	1103	AKASH	TECHNICAL_DEPARTMENT	87000	BIDAR	2021-01-29	NULL
5	1105	KAMLESH	LIBRARIAN	45000	HUBLI	NULL	NULL
6	1106	AISHWARYA	ELECTRONICS_JL	40000	GULBARGA	2020-11-16	NULL
7	1107	VAISHNAVI	CSE_HR	170000	BALLARI	2012-08-01	NULL
8	1108	HASWANATH	TRANSPORT	NULL	NULL	NULL	NULL
9	1109	SOMANNA	WEBDEVELOPMENT_DEPARTMENT	57000	KOPPAL	NULL	NULL
10	1110	BHARATH	STUDENT	57000	KOPPAL	NULL	NULL

SQLQuery3.sql - lo...RR\RISHIKESH (61))* SQLQuery4.sql - lo...RR\RISHIKESH (69))* SQLQuery2.sql - lo...RR\RISHIKESH (57))*

```
SELECT * FROM dbo.BOOKS
WHERE BOOK_ID IN (SELECT BOOK_ID FROM dbo.FACULTY
WHERE BOOK_ID = 7002);
```

100 %

Results Messages

	BOOK_ID	BOOK_NAME	AUTHOR_NAME	PRICE	SUBJECT_CODE	NO_OF_BOOKS	LOCATION
1	7002	CINGAGE	G TIWANI	720	MA102	7	RACK-4.CLOUMN-1

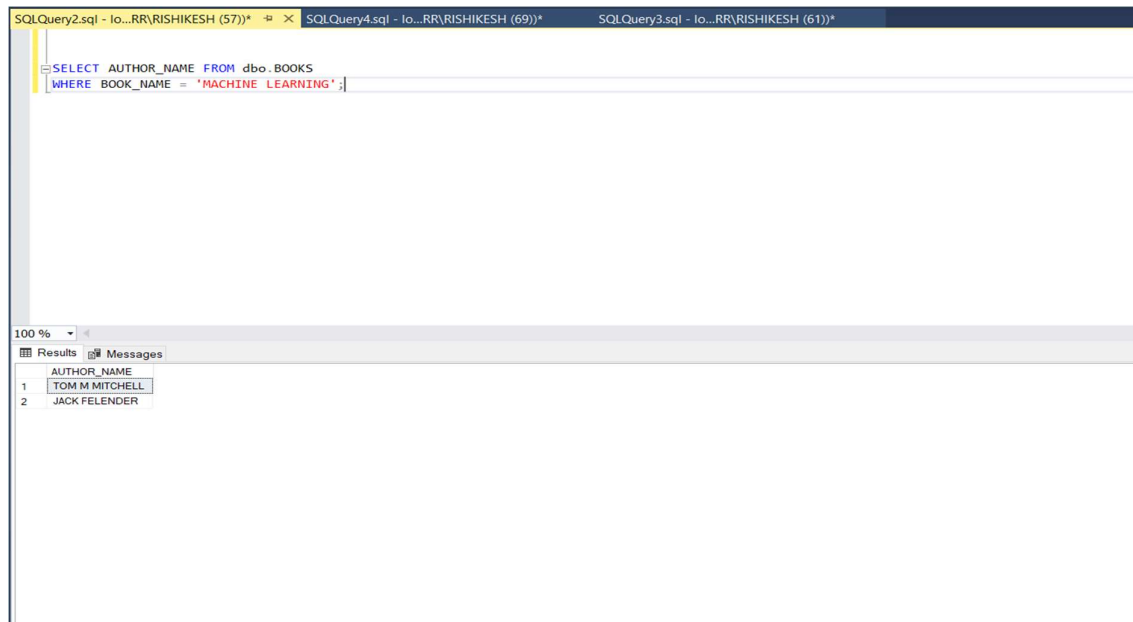
SQLQuery3.sql - lo...RR\RISHIKESH (61))* SQLQuery4.sql - lo...RR\RISHIKESH (69))* SQLQuery2.sql - lo...RR\RISHIKESH (57))*

```
SELECT * FROM dbo.BOOKS;
```

100 %

Results Messages

	BOOK_ID	BOOK_NAME	AUTHOR_NAME	PRICE	SUBJECT_CODE	NO_OF_BOOKS	LOCATION
1	7001	CONCEPT OF PHYSICS	HC VARMA	450	PH101	4	RACK-2
2	7002	CINGAGE	G TIWANI	720	MA102	7	RACK-4.CLOUMN-1
3	7003	LET US C	YASHAVANT KANETKAR	533	CS202	4	RACK-1.CLOUMN-2
4	7004	MACHINE LEARNING	TOM M MITCHELL	199	CS301	2	RACK-8.CLOUMN-3



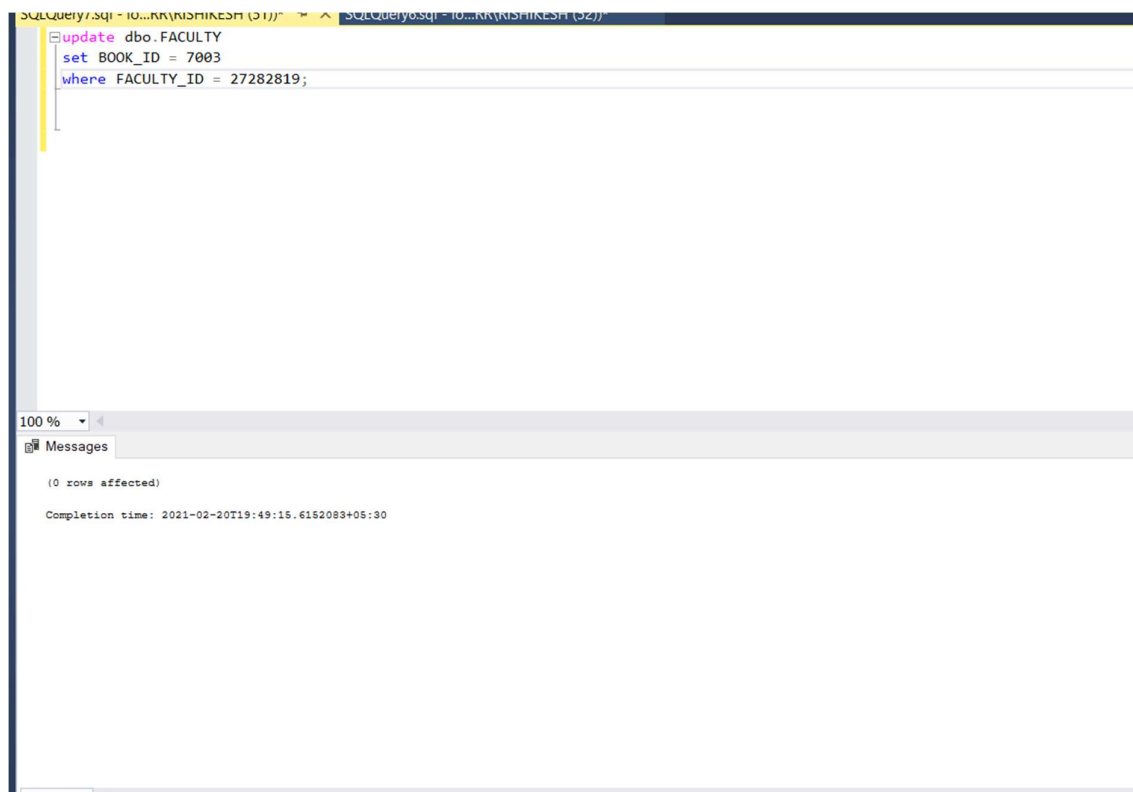
The screenshot shows a SQL Server Enterprise Manager interface with three query windows open. The active window, 'SQLQuery2.sql', contains the following SQL query:

```
SELECT AUTHOR_NAME FROM dbo.BOOKS  
WHERE BOOK_NAME = 'MACHINE LEARNING';
```

Below the query editor, the 'Results' pane displays the output of the query. It shows a table with one column, 'AUTHOR_NAME', and two rows of data:

	AUTHOR_NAME
1	TOM M MITCHELL
2	JACK FELENDER

9. Show how Foreign key constraint effects Updating a dependent table when value is not existing and in Base table where the value is referred and you want to update it.



The screenshot shows a SQL Server Enterprise Manager interface with two query windows open. The active window, 'SQLQuery7.sql', contains the following SQL query:

```
update dbo.FACULTY  
set BOOK_ID = 7003  
where FACULTY_ID = 27282819;
```

Below the query editor, the 'Messages' pane displays the output of the query. It shows a message indicating that 0 rows were affected:

```
(0 rows affected)  
Completion time: 2021-02-20T19:49:15.6152083+05:30
```

For the database I have created I didn't got any error with using above constraint.