DBMS LAB ASSIGNMENT-3

Submitted by:

R.Mounika,

19BCS124.

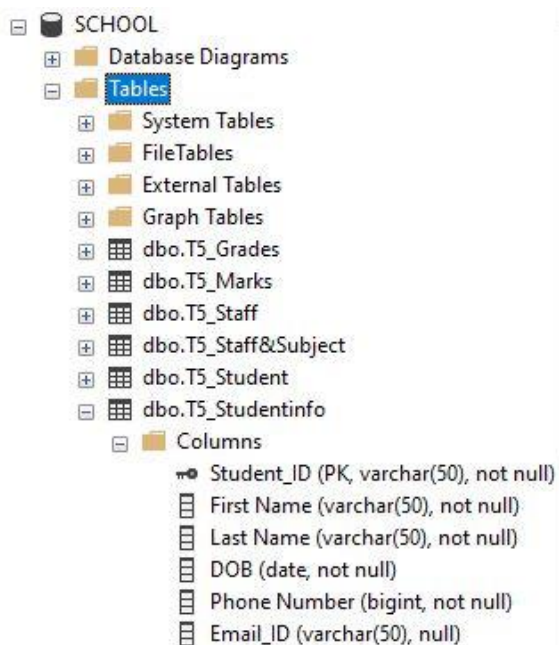1. **Add, Modify and Delete Column using Alter Command**

   ADD:

   Query:

   ```
   USE SCHOOL;
   ALTER TABLE T5_Studentinfo
   ADD Email_ID VARCHAR(50);
   ```
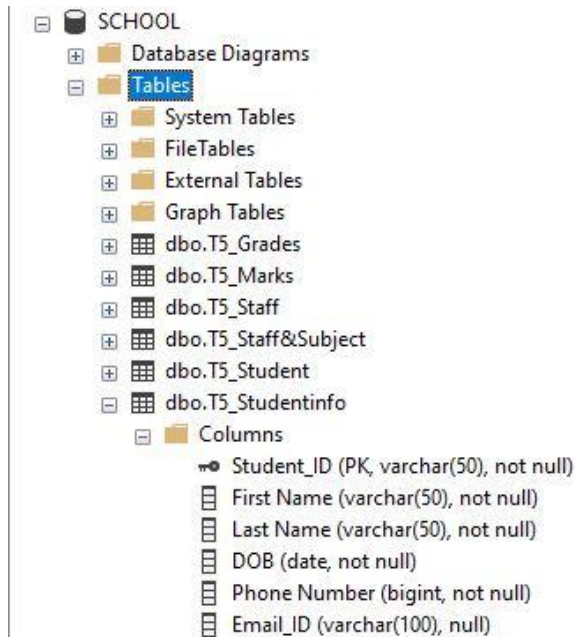
   Output:

   MODIFY:

   Query:

```sql
USE SCHOOL;
ALTER TABLE T5_Studentinfo
ALTER COLUMN Email_ID VARCHAR(100);
```
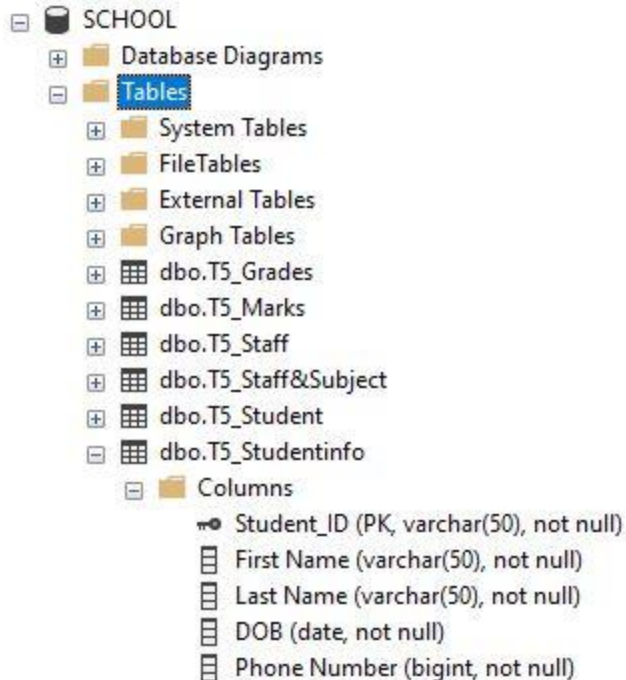
Output:

DELETE:

Query:

```sql
USE SCHOOL;
ALTER TABLE T5_Studentinfo
DROP COLUMN Email_ID;
```

Output:

2. Insert 20 Employees Data into all the tables. Use all the 3 methods that I have showcased

Query:

```
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(101,'Abhi','Jain','2002-01-01',9999999999,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(102, 'Yuti','Kapoor','2002-02-02',8888888888,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number])
(SELECT Student_ID,[First Name],[Last Name],DOB,[Phone Number]FROM
SCHOOL.dbo.T5_StudentDetails where DOB='2002-12-31');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(104,'Kavya','Dutt','2002-01-01',7777777777,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(105,'Sai','Likitha','2002-02-18',666666666,'@iiitdwd.ac.in');
```

```sql
INSERT INTO T5_Studentinfo
VALUES(106, 'Anu','Kirti','2002-05-14',5555555555,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(107, 'Mounika','Rayudu','2002-05-
20',4444444444,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(108, 'Sai','Priya','2002-01-02',3333333333,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(109, 'Ananya','Bhaskar','2002-01-
20',2222222222,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(110, 'Pragnya','Nayini','2002-03-
20',1111111111,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(111, 'Swetha','Sree','2002-04-20',1234567890,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(112, 'Bhavitha','Reddy','2002-05-
30',2345678901,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(113, 'Yindu','Priya','2002-09-05',3456789012,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo
VALUES(114, 'Sona','Rai','2002-06-06',4567890321,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(115,'Aishwarya','Kapoor','2002-06-
23',5678901234,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(116,'Ranjith','Sharma','2002-01-
01',6789012345,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(117,'Rohit','Shetty','2002-12-08',7890123456,'@iiitdwd.ac.in');
```

```sql
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(118,'Shreya','Ghosal','2002-07-
07',8901234567,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(119,'Amit','Tiwari','2002-08-31',907654321,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(120,'Lakshmi','Prasanna','2002-01-
11',6789554321,'@iiitdwd.ac.in');

INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number],[EmailID])
VALUES(121,'Reethu','Patel','2002-05-03',8905432617,'@iiitdwd.ac.in');

/*DELETE FROM T5_Studentinfo;*/

/*SELECT*FROM T5_Studentinfo;*/
```

Output:

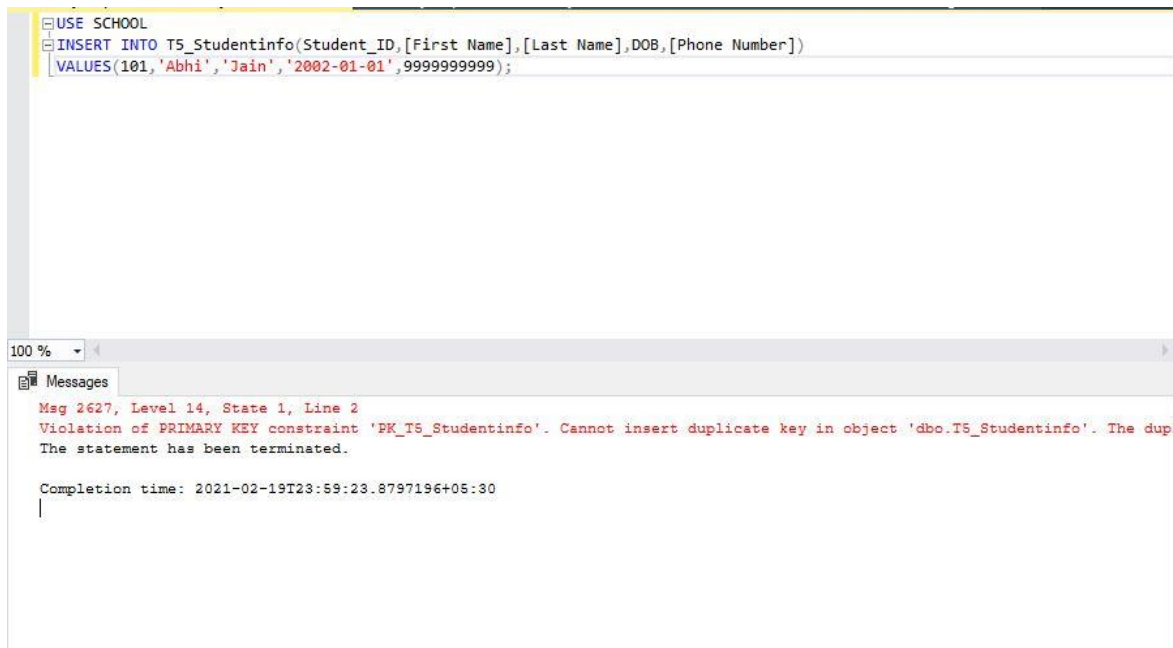|	Student_ID	First Name	Last Name	DOB	Phone Number	EmailID
1	101	Abhi	Jain	2002-01-01	9999999999	@iiitdwd.ac.in
2	102	Yuti	Kapoor	2002-02-02	8888888888	@iiitdwd.ac.in
3	104	Kavya	Dutt	2002-01-01	7777777777	@iiitdwd.ac.in
4	105	Sai	Likitha	2002-02-18	666666666	@iiitdwd.ac.in
5	106	Anu	Kirti	2002-05-14	5555555555	@iiitdwd.ac.in
6	107	Mounika	Rayudu	2002-05-20	4444444444	@iiitdwd.ac.in
7	108	Sai	Priya	2002-01-02	3333333333	@iiitdwd.ac.in
8	109	Ananya	Bhaskar	2002-01-20	2222222222	@iiitdwd.ac.in
9	110	Pragnya	Nayini	2002-03-20	1111111111	@iiitdwd.ac.in
10	111	Swetha	Sree	2002-04-20	1234567890	@iiitdwd.ac.in
11	112	Bhavitha	Reddy	2002-05-30	2345678901	@iiitdwd.ac.in
12	113	Yindu	Priya	2002-09-05	3456789012	@iiitdwd.ac.in
13	114	Sona	Rai	2002-06-06	4567890321	@iiitdwd.ac.in
14	115	Aishwarya	Kapoor	2002-06-23	5678901234	@iiitdwd.ac.in
15	116	Ranjith	Sharma	2002-01-01	6789012345	@iiitdwd.ac.in
16	117	Rohit	Shetty	2002-12-08	7890123456	@iiitdwd.ac.in
17	118	Shreya	Ghosal	2002-07-07	8901234567	@iiitdwd.ac.in
18	119	Amit	Tiwari	2002-08-31	907654321	@iiitdwd.ac.in
19	120	Lakshmi	Prasanna	2002-01-11	6789554321	@iiitdwd.ac.in
20	121	Reethu	Patel	2002-05-03	8905432617	@iiitdwd.ac.in
21	123	Ranjith	Sharma	2002-12-31	1122334455	@iiitdwd.ac.in
22	125	Shreya	Ghosal	2002-12-31	7755339900	@iiitdwd.ac.in
23	126	Amit	Tiwari	2002-12-31	2222444400	@iiitdwd.ac.in
24	128	Reethu	Patel	2002-12-31	9996663330	@iiitdwd.ac.in
25	129	Kavya	Dutt	2002-12-31	6667774440	@iiitdwd.ac.in
26	130	Sai	Likitha	2002-12-31	5999954674	@iiitdwd.ac.in

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

Primary Key:

Query:

```
USE SCHOOL
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number])
VALUES(101,'Abhi','Jain','2002-01-01',9999999999);
```

Output:

```
USE SCHOOL
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last Name],DOB,[Phone Number])
VALUES(101,'Abhi','Jain','2002-01-01',9999999999);
```

100 %

Messages

Msg 2627, Level 14, State 1, Line 2
Violation of PRIMARY KEY constraint 'PK_T5_Studentinfo'. Cannot insert duplicate key in object 'dbo.T5_Studentinfo'. The dup.
The statement has been terminated.

Completion time: 2021-02-19T23:59:23.8797196+05:30

Unique Key:

*In Table **T5_Studentinfo, Phone Number** is converted to Unique Key by following query:*

```
ALTER TABLE T5_Studentinfo
ADD UNIQUE ([Phone Number]);
```

Query:

```
USE SCHOOL
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last
Name],DOB,[Phone Number])
VALUES(122,'Abhi','Jain','2002-01-01',9999999999);
```

Output:

```
ALTER TABLE T5_Studentinfo
ADD UNIQUE ([Phone Number]);

USE SCHOOL
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last Name],DOB,[Phone Number])
VALUES(122,'Abhi','Jain','2002-01-01',9999999999);
```

0 %

Messages

```
Msg 2627, Level 14, State 1, Line 5
Violation of UNIQUE KEY constraint 'UQ__T5_Stude__79578B9380A48E51'. Cannot insert duplicate key in object 'dbo.T5_Studentin
The statement has been terminated.

Completion time: 2021-02-20T00:11:38.7711302+05:30
```

Not Null:

Query:

```
USE SCHOOL
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last Name],DOB,[Phone Number])
VALUES(130,'Abhi','Jain','2002-01-01',NULL);
```

Output:

```
USE SCHOOL
INSERT INTO T5_Studentinfo(Student_ID,[First Name],[Last Name],DOB,[Phone Number])
VALUES(130,'Abhi','Jain','2002-01-01',NULL);
```

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Messages

```
Msg 515, Level 16, State 2, Line 2
Cannot insert the value NULL into column 'Phone Number', table 'SCHOOL.dbo.T5_Studentinfo'; column does not allow nulls. INS
The statement has been terminated.

Completion time: 2021-02-20T00:18:22.4636293+05:30
```
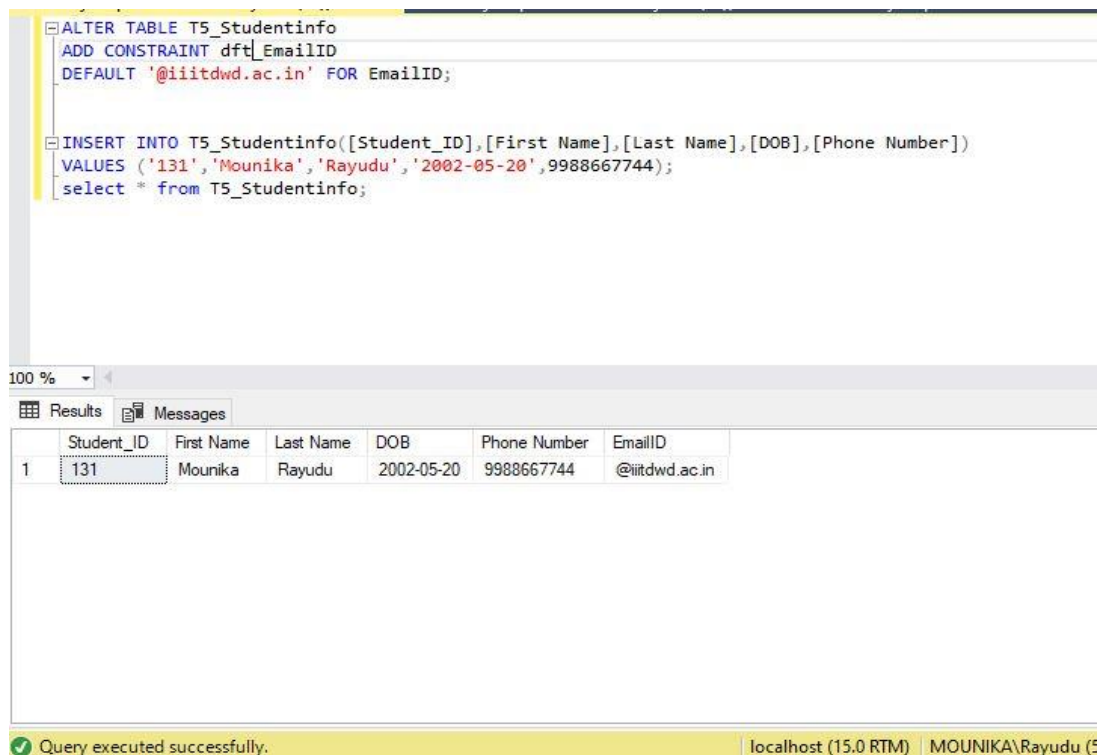
Default Key:

```
ALTER TABLE T5_Studentinfo
ADD CONSTRAINT dft_EmailID
DEFAULT '@iiitdwd.ac.in' FOR EmailID;


INSERT INTO T5_Studentinfo([Student_ID],[First Name],[Last
Name],[DOB],[Phone Number])
VALUES ('131','Mounika','Rayudu','2002-05-20',9988667744);
select * from T5_Studentinfo;
```
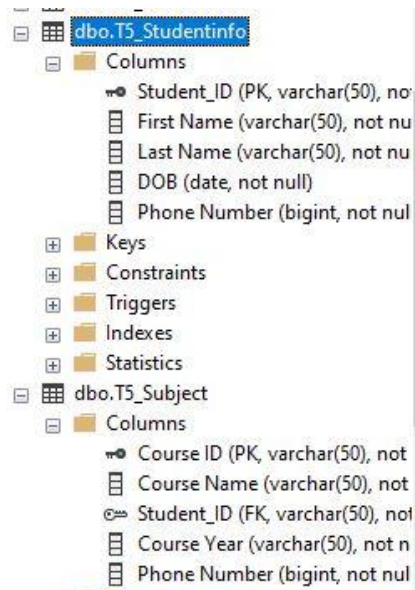
Output:

4. **Insert tuples into the table and see how foreign key constraint works if you try to insert into dependent table first.**
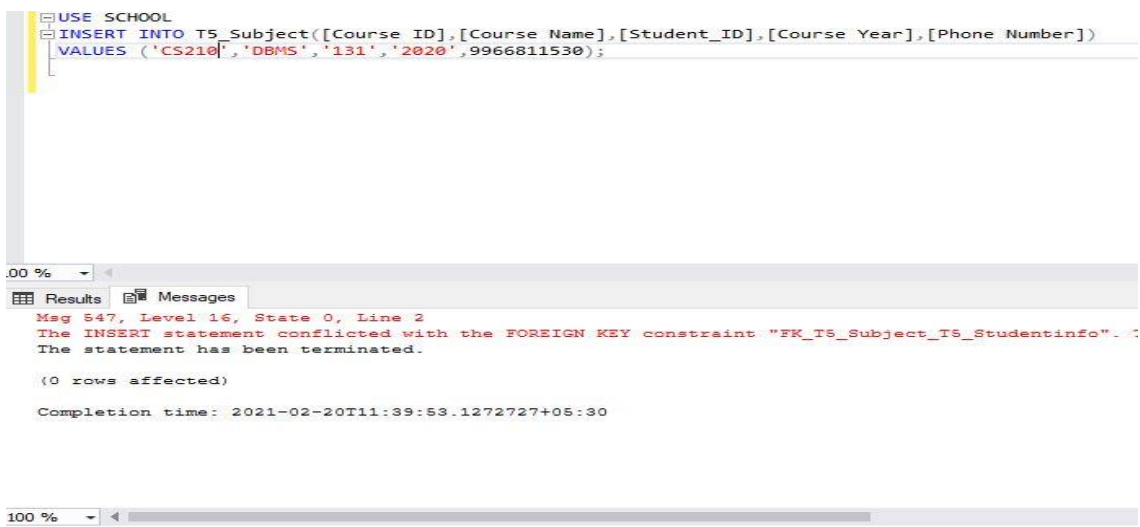
*{Here, **Student_ID** column in the table **T5_Subject** is dependent on **Student_ID** column in the table **T5_Studentinfo.**}*
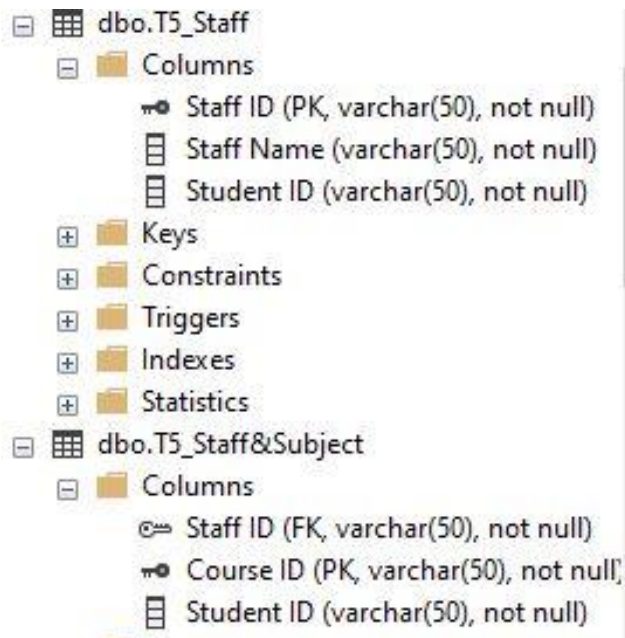
Query:

```
 USE SCHOOL
 INSERT INTO T5_Subject([Course ID],[Course
Name],[Student_ID],[Course Year],[Phone Number])
 VALUES ('CS210','DBMS','131','2020',9966811530);
```

Output:

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
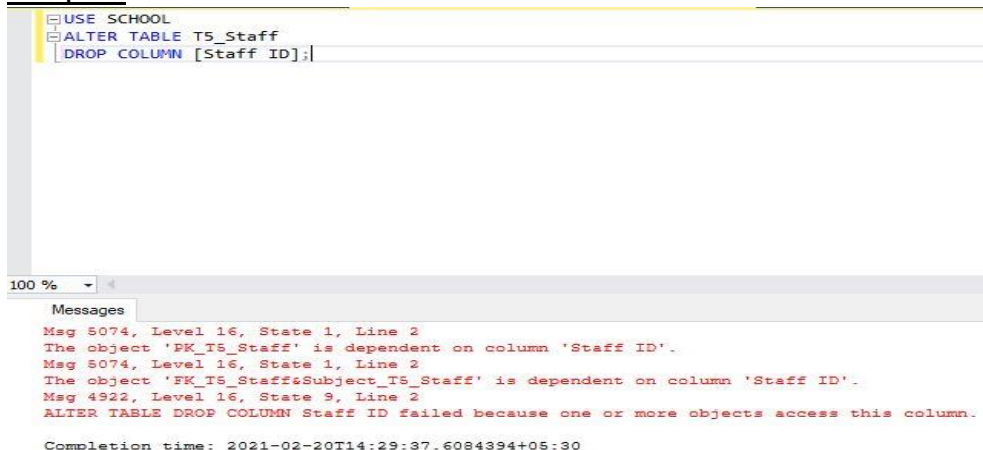

*{Here, **Staff ID** column in the table **T5_Staff&Subject** is dependent on **Staff ID** column in the table **T5_Stafft**.}*

Query:

```
USE SCHOOL
ALTER TABLE T5_Staff
DROP COLUMN [Staff ID];
```
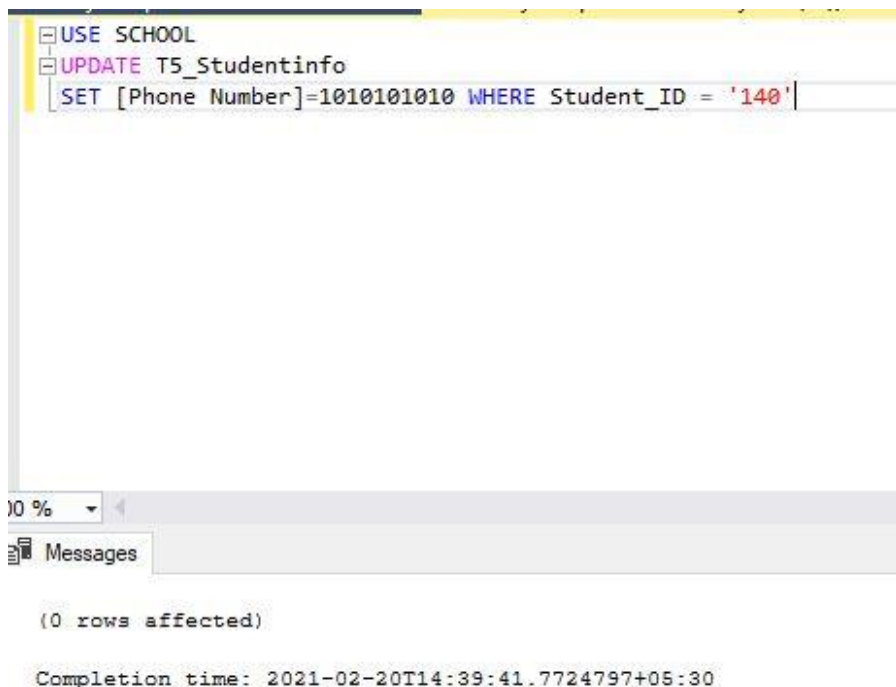
Output:

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

Query:

```
USE SCHOOL
UPDATE T5_Studentinfo
SET [Phone Number]=1010101010 WHERE Student_ID = '140'
```

Output:

7. **Add a column which has default value**.

Query:

```
ALTER TABLE T5_Studentinfo
ADD CONSTRAINT dft_EmailID
DEFAULT '@iiitdwd.ac.in' FOR EmailID;

INSERT INTO T5_Studentinfo([Student_ID],[First Name],[Last
Name],[DOB],[Phone Number])
VALUES ('141','Mounika','Rayudu','2002-05-20',3131313131);

SELECT*FROM T5_Studentinfo;
```

Output:

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

Query:

i.
```
USE SCHOOL
SELECT Student_ID FROM T5_Studentinfo WHERE[DOB]='2002-12-31';
```

Output:

ii. **SELECT** Student_ID **FROM** T5_Studentinfo
WHERE[EmailID]=**'@iiitdwd.ac.in'**;

Output:

	Student_ID
1	101
2	102
3	104
4	105
5	106
6	107
7	108
8	109
9	110
10	111
11	112
12	113
13	114
14	115
15	116
16	117
17	118
18	119
19	120
20	121
21	123
22	125
23	126
24	128
25	129
26	130

iii. **SELECT*****FROM** T5_Studentinfo;

Output:

	Student_ID	First Name	Last Name	DOB	Phone Number	EmailID
1	101	Abhi	Jain	2002-01-01	9999999999	@iiitdwd.ac.in
2	102	Yuti	Kapoor	2002-02-02	8888888888	@iiitdwd.ac.in
3	104	Kavya	Dutt	2002-01-01	7777777777	@iiitdwd.ac.in
4	105	Sai	Likitha	2002-02-18	666666666	@iiitdwd.ac.in
5	106	Anu	Kirti	2002-05-14	5555555555	@iiitdwd.ac.in
6	107	Mounika	Rayudu	2002-05-20	4444444444	@iiitdwd.ac.in
7	108	Sai	Priya	2002-01-02	3333333333	@iiitdwd.ac.in
8	109	Ananya	Bhaskar	2002-01-20	2222222222	@iiitdwd.ac.in
9	110	Pragnya	Nayini	2002-03-20	1111111111	@iiitdwd.ac.in
10	111	Swetha	Sree	2002-04-20	1234567890	@iiitdwd.ac.in
11	112	Bhavitha	Reddy	2002-05-30	2345678901	@iiitdwd.ac.in
12	113	Yindu	Priya	2002-09-05	3456789012	@iiitdwd.ac.in
13	114	Sona	Rai	2002-06-06	4567890321	@iiitdwd.ac.in
14	115	Aishwarya	Kapoor	2002-06-23	5678901234	@iiitdwd.ac.in
15	116	Ranjith	Sharma	2002-01-01	6789012345	@iiitdwd.ac.in
16	117	Rohit	Shetty	2002-12-08	7890123456	@iiitdwd.ac.in
17	118	Shreya	Ghosal	2002-07-07	8901234567	@iiitdwd.ac.in
18	119	Amit	Tiwari	2002-08-31	907654321	@iiitdwd.ac.in
19	120	Lakshmi	Prasanna	2002-01-11	6789554321	@iiitdwd.ac.in
20	121	Reethu	Patel	2002-05-03	8905432617	@iiitdwd.ac.in
21	123	Ranjith	Sharma	2002-12-31	1122334455	@iiitdwd.ac.in
22	125	Shreya	Ghosal	2002-12-31	7755339900	@iiitdwd.ac.in
23	126	Amit	Tiwari	2002-12-31	2222444400	@iiitdwd.ac.in
24	128	Reethu	Patel	2002-12-31	9996663330	@iiitdwd.ac.in
25	129	Kavya	Dutt	2002-12-31	6667774440	@iiitdwd.ac.in
26	130	Sai	Likitha	2002-12-31	5999954674	@iiitdwd.ac.in

iv.   **SELECT TOP** 5 * **FROM** T5_Studentinfo;

Output:

	Student_ID	First Name	Last Name	DOB	Phone Number	EmailID
1	101	Abhi	Jain	2002-01-01	9999999999	@iiitdwd.ac.in
2	102	Yuti	Kapoor	2002-02-02	8888888888	@iiitdwd.ac.in
3	104	Kavya	Dutt	2002-01-01	7777777777	@iiitdwd.ac.in
4	105	Sai	Likitha	2002-02-18	666666666	@iiitdwd.ac.in
5	106	Anu	Kirti	2002-05-14	5555555555	@iiitdwd.ac.in

v. `SELECT*FROM T5_Studentinfo WHERE [DOB]='2002-12-31' ORDER BY`
`Student_ID;`

Output:

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.**

Query:

```
UPDATE T5_Subject
  SET Student_ID='144' /*exists both in T5_Studentinfo
andT5_Subject*/
  WHERE [Course Year]='2'; /*exists only in T5_Subject(Child
Table)*/

  /*INSERT INTO T5_Subject
  VALUES('CS210','DBMS','121','2',7676767676)

  SELECT*FROM T5_Subject;
```

Output:

```
UPDATE T5_Subject
   SET Student_ID='144' /*exists both in T5_Studentinfo andT5_Subject*/
WHERE [Course Year]='2'; /*exists only in T5_Subject(Child Table)*/
```

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Messages

Msg 547, Level 16, State 0, Line 1
The UPDATE statement conflicted with the FOREIGN KEY constraint "FK_T5_Subject_T5_Studentinfo". The conflict occurred in
The statement has been terminated.

Completion time: 2021-02-20T15:46:15.7803149+05:30