TIETOEVRY – DATABASE – FINAL ASSESSMENT

SWEEKAR K T/EI13047

Module 1: SQL Server: 20 points

Scenario:

1. Healthcare domain:

Multiple patients visiting hospitals located in multiple cities, for check up and treatment, multiple doctors treating patients belong to specific department advising routine checkups(ex: Xray, Sugar test, urine test, MRI etc.) and further drugs(medicines) for the disease identified

OR

2. Technology/HR Stream

HR team sourcing profiles from job portal, resource worked in multiple companies, having multiple skill set, multiple years of experience in each skill, worked in multiple locations, worked in offshore and onsite, having multiple visa, multiple roles performed, managed different team capacity, certification, white papers published in different category

Once the normalization is done, create tables accordingly with PK's,FK's Constraints etc, insert the data, min of 100 -200 rows (test data)

<u>I have taken the Technology/HR Stream for Module1 Task1</u>

1. Perform the normalization

a) Create tables as per normalization

I have prefixed all the tables with FA meaning final assessment

Table 1 : FA_HR_SKILLS (This table is the parent table and it stores the skills id and the skill name)

Column Name	Datatype	Column description
skill_id	INT	It is the primary key and uniquely identifies each skill
Skill_name	VARCHAR(30)	It stores the name of the skill

SQL Query -

```
CREATE TABLE FA_HR_SKILLS(
skill_id INT PRIMARY KEY,
skill_name VARCHAR(30)
);
```

Table 2 : FA_RSRC_DETAILS -

Column Name	Datatype	Column description
r_id	INT	Resource ID – It uniquely identifies the human resources and it is the primary key of the
r_name	VARCHAR(50)	This column stores the resource name
r_phone	VARCHAR(15)	This column stores the resource phone number
r_mail	VARCHAR(50)	This column stores the resource mail
r_address	VARCHAR(200)	This column stores the resource address
r_gender	VARCHAR(15)	This column stores the resource gender
r_age	INT	This column stores the resource age and it has a check constraint that the age must be greater than 18
r_visa1	VARCHAR(20)	This column stores the resource first visa ID
r_visa2	VARCHAR(20)	This column stores the resource second visa ID
skill1_id	INT	This column stores the resource first skill id it is a foreign key and references the skill Id in the skill table
yrs_exp_in_skill1	INT	This column stores the resource's experience with the first skill.
skill2_id	INT	This column stores the resource second skill id it is a foreign key and references the skill Id in the skill table
yrs_exp_in_skill2	INT	This column stores the resource's experience with the second skill.
r_wrk_off	BIT	This column stores the whether the resource has worked offshore.
r_wrk_on	BIT	This column stores the whether the resource has worked onsite
r_wrk_multi_loc	BIT	This column stores the resource's experience with the second skill.

SQL Query -

```
CREATE TABLE FA_RSRC_DETAILS(
r_id INT PRIMARY KEY,
r_name VARCHAR(50) NOT NULL,
r_phone VARCHAR(15) NOT NULL,
r_mail VARCHAR(50) DEFAULT 'NO MAIL',
r_address VARCHAR(200),
r_gender VARCHAR(15),
r_age INT CHECK (r_age>18),
r_visa1 VARCHAR(20),
r_visa2 VARCHAR(20),
skill1_id INT FOREIGN KEY REFERENCES FA_HR_SKILLS(skill_id),
yrs_exp_in_skill1 INT,
skill2_id INT FOREIGN KEY REFERENCES FA_HR_SKILLS(skill_id),
yrs_exp_in_skill2 INT,
r_wrk_off BIT,
```

```
r_wrk_on BIT,
r_wrk_multi_loc BIT
);
```

Table 3: FA_RS_COMP_DETAILS – Stores the resource's details regarding to the company/companies he/she has worked in.

Column Name	Datatype	Column description
r_id	INT	Resource ID – It has a foreign key constraint and references r_id of the table FA_RSRC_DETAILS
r_comp_name	VARCHAR(50)	This column stores the company name which the resource has worked in.
r_comp_rol1	VARCHAR(50)	This column stores the first role performed by the resource in the company.
r_comp_rol1_team_cap	INT	This column stores the size of the team in the first role.
r_comp_rol1_exp	INT	This column stores the resource experience of the first role in years.
r_comp_rol2	VARCHAR(50)	This column stores the second role performed by the resource in the company.
r_comp_rol2_team_cap	INT	This column stores the size of the team in the second role.
r_comp_ro2_exp	INT	This column stores the resource experience of the second role in years.
r_certification1	VARCHAR(50)	This column stores the resource first certification.
r_certification2	VARCHAR(50)	This column stores the resource second certification.
r_wh_ppr_pb_topic1	VARCHAR(50)	This column stores the resource first white paper published.
r_wh_ppr_pb_topic2	VARCHAR(50)	This column stores the resource second white paper published.

SQL Query -

```
CREATE TABLE FA_RS_COMP_DETAILS(
r_id INT FOREIGN KEY REFERENCES FA_RSRC_DETAILS(r_id),
r_comp_name VARCHAR(50),
r_comp_rol1 VARCHAR(50),
r_comp_rol1_team_cap INT,
r_comp_rol1_exp INT,
r_comp_rol2 VARCHAR(50),
r_comp_rol2_team_cap INT,
r_comp_ro2_exp INT,
r_certification1 VARCHAR(50),
r_certification2 VARCHAR(50),
r_wh_ppr_pb_topic1 VARCHAR(50),
r_wh_ppr_pb_topic2 VARCHAR(50)
);
```

Table 4: FA_RESOURCE_FROM_JOB _PORTAL– Stores the resource's details according to the requirement of the HR .

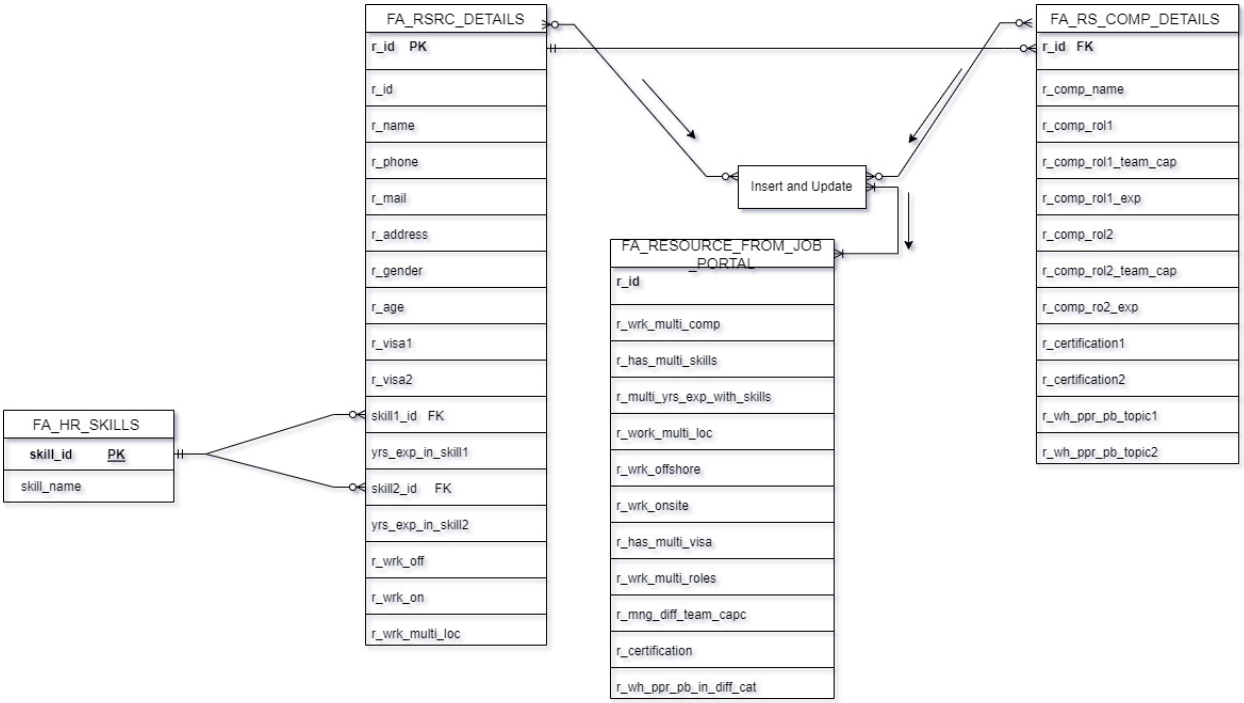
This table stores the r_id(resource ID) and a BIT(0 or1) value according to the requirement of the HR for job sourcing, by DEFAULT constraint all the values except the r_id is given as 0 and the r_id is inserted by a SQL INSERT query referring the FA_RSRC_DETAILS table, and all the other rows can be updated to 1 by a SQL UPDATE query .

Column Name	Datatype	Column description
r_id	INT	Resource ID – It is inserted by referring FA_RSRC_DETAILS
r_wrk_multi_comp	BIT	This column stores whether the resource has worked in multiple companies
r_has_multi_skills	BIT	This column stores whether the resource has multiple skills
r_multi_yrs_exp_with_skills	BIT	This column stores whether the resource has multiple years of experience with the skills
r_work_multi_loc	BIT	This column stores whether the resource has worked in multiple locations
r_wrk_offshore	BIT	This column stores whether the resource has worked offshore
r_wrk_onsite	BIT	This column stores whether the resource has worked onsite
r_has_multi_visa	BIT	This column stores whether the resource has multiple visa
r_wrk_multi_roles	BIT	This column stores whether the resource has worked multiple roles
r_mng_diff_team_capc	BIT	This column stores whether the resource has worked in different team capacities
r_certification	BIT	This column stores whether the resource has multiple certification
r_wh_ppr_pb_in_diff_cat	BIT	This column stores whether the resource has published multiple white papers

SQL Query -

```
CREATE TABLE FA_RESOURCE_FROM_JOB_PORTAL(
r_id INT,
r_wrk_multi_comp BIT DEFAULT 0,
r_has_multi_skills BIT DEFAULT 0,
r_multi_yrs_exp_with_skills BIT DEFAULT 0,
r_work_multi_loc BIT DEFAULT 0,
r_wrk_offshore BIT DEFAULT 0,
r_wrk_onsite BIT DEFAULT 0,
r_has_multi_visa BIT DEFAULT 0,
r_wrk_multi_roles BIT DEFAULT 0,
r_mng_diff_team_capc BIT DEFAULT 0,
r_certification BIT DEFAULT 0,
r_wh_ppr_pb_in_diff_cat BIT DEFAULT 0
);
```

Entity relation diagram for the tables I have created



b) Insert the data

Inserting values into Table 1

```
CREATE TABLE FA_HR_SKILLS(
skill_id INT PRIMARY KEY,
skill_name VARCHAR(30)
);

INSERT INTO FA_HR_SKILLS VALUES(100,'JAVA'),(101,'DOT NET'),(102,'AUTOMATION TESTING'),(103,'DATABASE DEVELOPMENT');
INSERT INTO FA_HR_SKILLS VALUES(104,'PYTHON'),(105,'WEB DEVELOPMENT'),(106,'CYBERSECURITY'),(107,'DATA ANALYSIS');

SELECT * FROM FA_HR_SKILLS;
```

Results 1

SELECT * FROM FA_HR_SKILLS

	skill_id	skill_name
1	100	JAVA
2	101	DOT NET
3	102	AUTOMATION T
4	103	DATABASE DEVE
5	104	PYTHON
6	105	WEB DEVELOPM
7	106	CYBERSECURITY
8	107	DATA ANALYSIS

Inserting values into Table 2

```sql
INSERT INTO FA_RSRC_DETAILS(r_id, r_name ,r_phone, r_mail, r_address, r_gender,r_age,r_visa1,r_visa2,
skill1_id,yrs_exp_in_skill1,skill2_id,yrs_exp_in_skill2,r_wrk_off,r_wrk_on,r_wrk_multi_loc)
VALUES(1,'Alex','4029843763','alex@mail.com','qqq wwww eee','Male',22,'ZV34243','IDFD340S',100,6,102,2,1,1,1),
(2,'Alan','4029843761','alan@mail.com','qqq wwww eee','Male',22,'UCV4243','IUFD340S',100,2,101,4,1,1,1),
(3,'Albert','4029843762','albert@mail.com','qqq wwww eee','Male',22,'UV34243','IED340S',100,2,102,5,1,1,1),
(4,'Andy','4029843764','andy@mail.com','qqq wwww eee','Male',22,'UV34243','DUFD340S',103,3,102,1,0,1,1),
(5,'Ana','4029843765','ana@mail.com','qqq wwww eee','Female',22,'GH34243','IU34D340S',100,2,101,1,1,1,1),
(6,'Ari','4029843766','ari@mail.com','qqq wwww eee','Female',22,'UTH34243','IUFD340S',103,3,102,5,1,1,0),
(7,'Bob','4029843767','bob@mail.com','qqq wwww eee','Male',22,'UV34243','IUFD670S',100,2,101,2,1,0,1),
(8,'Bill','4029843763','bill@mail.com','qqq wwww eee','Male',22,'POU2DF56','HJK3440S',101,4,103,7,1,1,1),
(9,'Ben','4029233763','ben@mail.com','qqq wwww eee','Male',22,'POU2DF56','HJK3440S',100,9,103,3,0,1,1);

INSERT INTO  FA_RSRC_DETAILS(r_id, r_name ,r_phone, r_mail, r_address, r_gender,r_age,r_visa1,r_visa2,
skill1_id,yrs_exp_in_skill1,skill2_id,yrs_exp_in_skill2,r_wrk_off,r_wrk_on,r_wrk_multi_loc)
VALUES(12,'Charlie','4123233303','charlie@mail.com','qqq wwww eee','Male',22,'POU3R356',NULL,102,1,NULL,NULL,0,1,0);

UPDATE FA_RSRC_DETAILS SET skill1_id = 105 WHERE r_id=5;
SELECT * FROM FA_RSRC_DETAILS ;
```

Results 1

SELECT * FROM FA_RSRC_DETAILS Enter a SQL expression to filter results (use Ctrl+Space)

	r_id	r_name	r_phone	r_mail	r_address	r_ge	r_a	r_visa1	r_visa2	skill	yr	skill:	yrs_ex
1	1	Alex	4029843763	alex@mail.com	qqq wwww eee	Male	22	ZV34243	IDFD340S	100	6	102	2
2	2	Alan	4029843761	alan@mail.com	qqq wwww eee	Male	22	UCV4243	IUFD340S	100	2	101	4
3	3	Albert	4029843762	albert@mail.com	qqq wwww eee	Male	22	UV34243	IED340S	100	2	102	5
4	4	Andy	4029843764	andy@mail.com	qqq wwww eee	Male	22	UV34243	DUFD340S	103	3	102	1
5	5	Ana	4029843765	ana@mail.com	qqq wwww eee	Female	22	GH34243	IU34D340S	105	2	101	1
6	6	Ari	4029843766	ari@mail.com	qqq wwww eee	Female	22	UTH34243	IUFD340S	103	3	102	5
7	7	Bob	4029843767	bob@mail.com	qqq wwww eee	Male	22	UV34243	IUFD670S	100	2	101	2
8	8	Bill	4029843763	bill@mail.com	qqq wwww eee	Male	22	POU2DF56	HJK3440S	101	4	103	7
9	9	Ben	4029233763	ben@mail.com	qqq wwww eee	Male	22	POU2DF56	HJK3440S	100	9	103	3
10	10	Boat	4029233303	boat@mail.com	qqq wwww eee	Male	22	POU2R356	H9R3440S	102	3	[NULL]	[NULL]
11	11	Chad	4029233303	chad@mail.com	qqq wwww eee	Male	22	POU2R356	H9R3440S	102	1	[NULL]	0

Inserting values into Table 3

```
(8,'Apple','SWE',8,1,'Web Devoloper',15,2,'Information Security',NULL,'Secure systems','Risk and Informations system control'),
(11,'Microsoft','DA',21,2,NULL,NULL,NULL,'Employee of the Month',NULL,'YES',NULL),
(3,'Apple','SWE',10,3,'DA',15,2,'Information Security','Cybersecurity','Software Development','Risk and Informations system control'),
(7,'Google','DA',21,2,NULL,NULL,NULL,'Solutions Expert',NULL,NULL,NULL),
(2,'Netflix','Tech Lead',10,3,'DA',15,2,'Information Security','Cybersecurity','Secure systems','Risk and Informations system control'),
(10,'Microsoft','Tester',21,2,NULL,NULL,NULL,'Solutions Expert',NULL,NULL,NULL),
(9,'Apple','SWE',10,3,'DA',15,2,'Information Security','Cybersecurity','Secure systems','Risk and Informations system control'),
(4,'Amazon','DA',21,2,'Apple',5,5,'Solutions Expert',NULL,'YES',NULL),
(6,'Apple','Data Scientist',10,3,'DA',15,2,'Data Cleaning','Data Analysis','Secure systems','Risk and Informations system control'),
(6,'Microsoft','DA',21,2,NULL,NULL,NULL,'Analysis Expert',NULL,'Data Analysis',NULL),
(4,'Apple','SWE',6,5,'Architect',15,2,'Information Security','Cybersecurity','Secure systems','Risk and Informations system control'),
(5,'Microsoft','QA',21,2,'Amazon',15,5,'YES',NULL,'YES',NULL);

SELECT * FROM FA_RS_COMP_DETAILS ;
```

Results 1

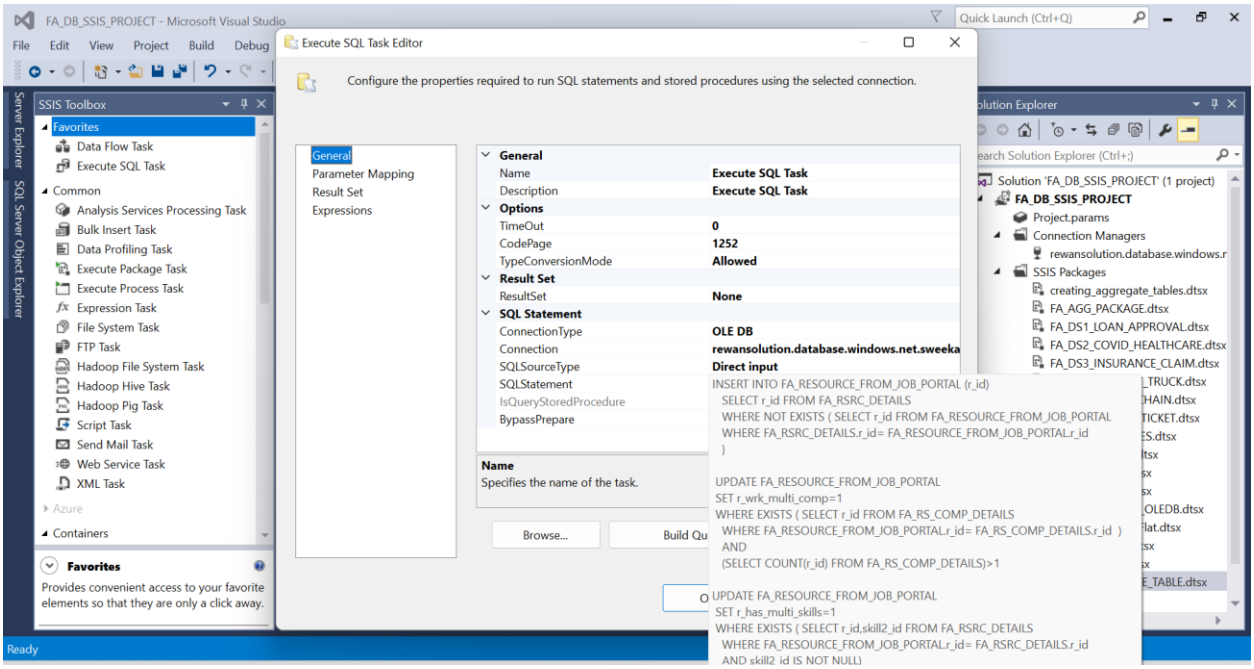
SELECT * FROM FA_RS_COMP_DETAILS

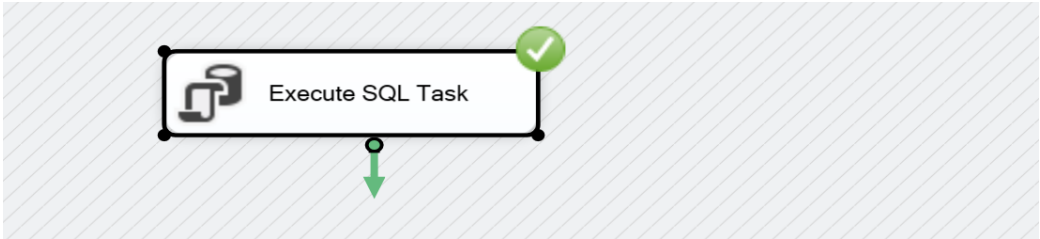
	r_id	r_comp_name	r_comp_rol1	r_comp_rol1_team_cap	r_comp_rol1_exp	r_comp_rol2	r_comp_rol2_team_cap	r_comp_ro2_exp
3	2	Apple	SWE	10	3	DA	15	
4	3	Microsoft	DA	21	2	[NULL]	[NULL]	[NU
5	5	Apple	SWE	10	3	DA	15	
6	7	Facebook	DA	21	2	Linkdin	10	
7	5	Linkedin	Web Developer	6	2	DA	15	
8	1	Google	DA	21	2	[NULL]	[NULL]	[NU
9	8	Apple	SWE	8	1	Web Devoloper	15	
10	11	Microsoft	DA	21	2	[NULL]	[NULL]	[NU
11	3	Apple	SWE	10	3	DA	15	
12	7	Google	DA	21	2	[NULL]	[NULL]	[NU
13	2	Netflix	Tech Lead	10	3	DA	15	
14	10	Microsoft	Tester	21	2	[NULL]	[NULL]	[NU
15	9	Apple	SWE	10	3	DA	15	
16	4	Amazon	DA	21	2	Apple	5	

Inserting values into Table 4

```
INSERT INTO FA_RESOURCE_FROM_JOB_PORTAL (r_id)
   SELECT r_id FROM FA_RSRC_DETAILS
   WHERE NOT EXISTS ( SELECT r_id FROM FA_RESOURCE_FROM_JOB_PORTAL
   WHERE FA_RSRC_DETAILS.r_id= FA_RESOURCE_FROM_JOB_PORTAL.r_id
   );

 UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_wrk_multi_comp=1
 WHERE EXISTS ( SELECT r_id FROM FA_RS_COMP_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RS_COMP_DETAILS.r_id  )
   AND
   (SELECT COUNT(r_id) FROM FA_RS_COMP_DETAILS)>1;

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_has_multi_skills=1
 WHERE EXISTS ( SELECT r_id,skill2_id FROM FA_RSRC_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RSRC_DETAILS.r_id
   AND skill2_id IS NOT NULL);

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_multi_yrs_exp_with_skills=1
 WHERE EXISTS ( SELECT r_id FROM FA_RSRC_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RSRC_DETAILS.r_id
   AND   (yrs_exp_in_skill1>1 OR yrs_exp_in_skill2>1));

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_work_multi_loc=1
 WHERE EXISTS ( SELECT r_id FROM FA_RSRC_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RSRC_DETAILS.r_id
   AND r_wrk_multi_loc=1);

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_wrk_offshore=1
 WHERE EXISTS ( SELECT r_id FROM FA_RSRC_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RSRC_DETAILS.r_id
   AND r_wrk_off=1);

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_wrk_onsite=1
 WHERE EXISTS ( SELECT r_id FROM FA_RSRC_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RSRC_DETAILS.r_id
   AND r_wrk_oN=1);
```

```sql
UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_has_multi_visa=1
 WHERE EXISTS ( SELECT r_id FROM FA_RSRC_DETAILS
   WHERE FA_RESOURCE_FROM_JOB_PORTAL.r_id= FA_RSRC_DETAILS.r_id
   AND r_visa1 IS NOT NULL AND r_visa2 IS NOT NULL );

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_wrk_multi_roles=1
 WHERE EXISTS ( SELECT r_id FROM FA_RS_COMP_DETAILS
   WHERE FA_RS_COMP_DETAILS.r_id= FA_RESOURCE_FROM_JOB_PORTAL.r_id
   AND r_comp_rol1 IS NOT NULL AND r_comp_rol2 IS NOT NULL);

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_mng_diff_team_capc=1
 WHERE EXISTS ( SELECT r_id FROM FA_RS_COMP_DETAILS
   WHERE FA_RS_COMP_DETAILS.r_id= FA_RESOURCE_FROM_JOB_PORTAL.r_id
   AND r_comp_rol1_team_cap != r_comp_rol2_team_cap);

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_certification=1
 WHERE EXISTS ( SELECT r_id FROM FA_RS_COMP_DETAILS
   WHERE FA_RS_COMP_DETAILS.r_id= FA_RESOURCE_FROM_JOB_PORTAL.r_id
   AND r_certification1 IS NOT NULL);

UPDATE FA_RESOURCE_FROM_JOB_PORTAL
 SET r_wh_ppr_pb_in_diff_cat=1
 WHERE EXISTS ( SELECT r_id FROM FA_RS_COMP_DETAILS
   WHERE FA_RS_COMP_DETAILS.r_id= FA_RESOURCE_FROM_JOB_PORTAL.r_id
   AND r_wh_ppr_pb_topic1 != r_wh_ppr_pb_topic2);
```





```sql
SELECT * FROM FA_RESOURCE_FROM_JOB_PORTAL;
```

Results 1

SELECT * FROM FA_RESOURCE_FROM_JC

	r_id	r_wrk_multi_comp	r_has_multi_skills	r_multi_yrs_exp_with_skills	r_work_multi_loc	r_wrk_offshore	r_wrk_onsite	r_has_multi_vis
1	1	1	1	1	1	1	1	
2	2	1	1	1	1	1	1	
3	3	1	1	1	1	1	1	
4	4	1	1	1	1	0	1	
5	5	1	1	1	1	1	1	
6	6	1	1	1	0	1	1	
7	7	1	1	1	1	1	0	
8	8	1	1	1	1	1	1	
9	9	1	1	1	1	0	1	
10	10	1	0	1	0	0	1	
11	11	1	0	0	0	0	1	
12	12	0	0	0	0	0	1	

c) Join the table

```sql
--JOINS
--INNER JOIN
--The below query gives the resources having multiple skills
SELECT *
FROM FA_HR_SKILLS AS SK
INNER JOIN FA_RSRC_DETAILS AS RD ON SK.skill_id  = RD.skill2_id
WHERE skill2_id IS NOT NULL;
```

Results 1

SELECT * FROM FA_HR_SKILLS AS SK INN

	skill_id	skill_name	r_id	r_name	r_phone	r_mail	r_address	r_gender	r_age	r_visa1	r_visa2
1	102	AUTOMATION TESTING	1	Alex	4029843763	alex@mail.com	qqq wwww eee	Male	22	ZV34243	IDFD340S
2	101	DOT NET	2	Alan	4029843761	alan@mail.com	qqq wwww eee	Male	22	UCV4243	IUFD340S
3	102	AUTOMATION TESTING	3	Albert	4029843762	albert@mail.com	qqq wwww eee	Male	22	UV34243	IED340S
4	102	AUTOMATION TESTING	4	Andy	4029843764	andy@mail.com	qqq wwww eee	Male	22	UV34243	DUFD340S
5	101	DOT NET	5	Ana	4029843765	ana@mail.com	qqq wwww eee	Female	22	GH34243	IU34D340S
6	102	AUTOMATION TESTING	6	Ari	4029843766	ari@mail.com	qqq wwww eee	Female	22	UTH34243	IUFD340S
7	106	CYBERSECURITY	7	Bob	4029843767	bob@mail.com	qqq wwww eee	Male	22	UV34243	IUFD670S
8	103	DATABASE DEVELOPMENT	8	Bill	4029843763	bill@mail.com	qqq wwww eee	Male	22	POU2DF56	HJK3440S
9	103	DATABASE DEVELOPMENT	9	Ben	4029233763	ben@mail.com	qqq wwww eee	Male	22	POU2DF56	HJK3440S

```sql
--LEFT JOIN
--The below query gives the person who has not worked in any company
SELECT *  FROM FA_RSRC_DETAILS AS PD
LEFT JOIN FA_RS_COMP_DETAILS AS CD ON PD.r_id = CD.r_id
WHERE CD.r_id IS NULL;
```

Results 1

SELECT * FROM FA_RSRC_DETAILS AS PD

	r_id	r_name	r_phone	r_mail	r_address	r_gender	r_age	r_visa1	r_visa2	skill1_id	yrs_exp_in_skill1
1	12	Charlie	4123233303	charlie@mail.com	qqq wwww eee	Male	22	POU3R356	[NULL]	102	1

```sql
--RIGHT JOIN
--The below query returns the non matching skill1 which no has
SELECT SK.skill_id,SK.skill_name  FROM FA_RSRC_DETAILS AS RD
RIGHT JOIN  FA_HR_SKILLS AS SK ON  RD.skill1_id = SK.skill_id
WHERE r_id IS NULL;
```

Results 1

SELECT SK.skill_id,SK.skill_name FROM FA

	skill_id	skill_name
1	104	PYTHON
2	106	CYBERSECURITY
3	107	DATA ANALYSIS

```sql
--FULL JOIN
--returns the matching and non matching rows from both the columns
SELECT * FROM FA_RSRC_DETAILS AS RD
RIGHT JOIN  FA_HR_SKILLS AS SK ON  RD.skill1_id = SK.skill_id;
```

Results 1

SELECT * FROM FA_RSRC_DETAILS AS R

		skill1_id	yrs_exp_in_skill1	skill2_id	yrs_exp_in_skill2	r_wrk_off	r_wrk_on	r_wrk_multi_loc	skill_id	skill_name
6	S	101	4	103	7	1	1	1	101	DOT NET
7	S	102	3	[NULL]	[NULL]	0	1	0	102	AUTOMATION TESTIN
8	S	102	1	[NULL]	0	0	1	0	102	AUTOMATION TESTIN
9		102	1	[NULL]	[NULL]	0	1	0	102	AUTOMATION TESTIN
10	S	103	3	102	1	0	1	1	103	DATABASE DEVELOP
11	S	103	3	102	5	1	1	0	103	DATABASE DEVELOP
12		[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	104	PYTHON
13	S	105	2	101	1	1	1	1	105	WEB DEVELOPMENT
14		[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	106	CYBERSECURITY
15		[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	[NULL]	107	DATA ANALYSIS

```sql
--FULL JOIN
--returns the matching and non matching rows from both the columns
SELECT * FROM FA_RSRC_DETAILS AS RD
RIGHT JOIN  FA_RESOURCE_FROM_JOB_PORTAL AS JP ON  RD.r_id = JP.r_id;
```

Results 1

SELECT * FROM FA_RSRC_DETAILS AS R

	r_id	r_name	r_phone	r_mail	r_address	r_gender	r_age	r_visa1	r_visa2	skill1_id	yrs_exp_in_skill1	skill2_id	yrs_exp_in_skill2	r_w
1		Alex	4029843763	alex@mail.com	qqq wwww eee	Male	22	ZV34243	IDFD340S	100	6	102	2	
2	2	Alan	4029843761	alan@mail.com	qqq wwww eee	Male	22	UCV4243	IUFD340S	100	2	101	4	
3	3	Albert	4029843762	albert@mail.com	qqq wwww eee	Male	22	UV34243	IED340S	100	2	102	5	
4	4	Andy	4029843764	andy@mail.com	qqq wwww eee	Male	22	UV34243	DUFD340S	103	3	102	1	
5	5	Ana	4029843765	ana@mail.com	qqq wwww eee	Female	22	GH34243	IU34D340S	105	2	101	1	
6	6	Ari	4029843766	ari@mail.com	qqq wwww eee	Female	22	UTH34243	IUFD340S	103	3	102	5	
7	7	Bob	4029843767	bob@mail.com	qqq wwww eee	Male	22	UV34243	IUFD670S	100	2	106	2	
8	8	Bill	4029843763	bill@mail.com	qqq wwww eee	Male	22	POU2DF56	HJK3440S	101	4	103	7	
9	9	Ben	4029233763	ben@mail.com	qqq wwww eee	Male	22	POU2DF56	HJK3440S	100	9	103	3	
10	10	Boat	4029233303	boat@mail.com	qqq wwww eee	Male	22	POU2R356	H9R3440S	102	3	[NULL]	[NULL]	
11	11	Chad	4029233303	chad@mail.com	qqq wwww eee	Male	22	POU2R356	H9R3440S	102	1	[NULL]	0	
12	12	Charlie	4123233303	charlie@mail.com	qqq wwww eee	Male	22	POU3R356	[NULL]	102	1	[NULL]	[NULL]	

d) Create different views

```sql
--VIEWS
--The below view is created to retreive the resource with all the requirements
CREATE VIEW FA_M1_T1_PERFECT_RSRC_HAS AS
SELECT RD.r_id,r_name FROM FA_RSRC_DETAILS AS RD
INNER JOIN FA_RESOURCE_FROM_JOB_PORTAL AS JP ON RD.r_id = JP.r_id
WHERE
r_wrk_multi_comp = 1 AND
r_has_multi_skills = 1 AND
r_multi_yrs_exp_with_skills = 1 AND
r_work_multi_loc = 1 AND
r_wrk_offshore = 1 AND
r_wrk_onsite = 1 AND
r_has_multi_visa = 1 AND
r_wrk_multi_roles = 1 AND
r_mng_diff_team_capc = 1 AND
r_certification = 1 AND
r_wh_ppr_pb_in_diff_cat = 1;

SELECT * FROM FA_M1_T1_PERFECT_RSRC_HAS;
```

Results 1

SELECT * FROM FA_M1_T1_PERFECT_RSRC_HAS

	r_id	r_name
1	1	Alex
2	2	Alan
3	3	Albert
4	5	Ana
5	8	Bill

Save Cancel Script 200 5 Rows: 1 5 row(s) fetched - 166ms, on 2022-10-10 at 01:03:05

```sql
--The below view is created to retreive the skills which no one has
CREATE VIEW FA_M1_T1_SKILL_NO_RSRC_HAS AS
SELECT skill_id,skill_name  FROM FA_HR_SKILLS
WHERE skill_id NOT IN  (SELECT DISTINCT skill1_id FROM FA_RSRC_DETAILS WHERE skill1_id IS NOT NULL)
AND  skill_id NOT IN (SELECT DISTINCT skill2_id FROM FA_RSRC_DETAILS WHERE skill2_id IS NOT NULL);

SELECT * FROM FA_M1_T1_SKILL_NO_RSRC_HAS;
```

Results 1

SELECT * FROM FA_M1_T1_SKILL_NO_RSRC_HAS

	skill_id	skill_name
1	104	PYTHON
2	107	DATA ANALYSIS

Save Cancel Script 200 2 Rows: 1 2 row(s) fetched - 162ms, on 2022-10-10 at 01:03:38

```sql
--The below view retreives the resources having particular skill(DOT NET)
CREATE VIEW FA_M1_T1_RSCRS_WITH_PARTICULAR_SKILL AS
SELECT r_id,r_name,(SELECT skill_name FROM FA_HR_SKILLS WHERE skill_id = 101) AS skill_name
FROM FA_RSRC_DETAILS
WHERE skill1_id=101 OR skill2_id = 101;

SELECT * FROM FA_M1_T1_RSCRS_WITH_PARTICULAR_SKILL;
```

Results 1

SELECT * FROM FA_M1_T1_RSCRS_WITH_PAI

	r_id	r_name	skill_name
1	2	Alan	DOT NET
2	5	Ana	DOT NET
3	8	Bill	DOT NET

```sql
--This view fetches the years of experience of the resource in a company

CREATE VIEW FA_M1_T1_RSRC_COMP_SEP_EXP AS
SELECT RD.r_id,r_name,r_comp_name,r_comp_rol1_exp+(CASE
    WHEN r_comp_ro2_exp IS NULL THEN 0
    ELSE r_comp_ro2_exp
END
) AS TOT_COMP_EXP FROM FA_RSRC_DETAILS AS RD
INNER JOIN FA_RS_COMP_DETAILS AS CD ON RD.r_id = CD.r_id;

SELECT * FROM FA_M1_T1_RSRC_COMP_SEP_EXP;
```

Results 1

SELECT * FROM FA_M1_T1_RSRC_COMP_ Enter a SQL expression to filter results (use Ctrl+Space)

	r_id	r_name	r_comp_name	TOT_COMP_EXP
1	1	Alex	Apple	5
2	1	Alex	Microsoft	2
3	2	Alan	Apple	5
4	3	Albert	Microsoft	2
5	5	Ana	Apple	5
6	7	Bob	Facebook	7
7	5	Ana	Linkedin	4
8	1	Alex	Google	2
9	8	Bill	Apple	3
10	11	Chad	Microsoft	2

Save Cancel Script 200 20 Rows: 1 20 row(s) fetched - 174ms, on 2022-10-13 at 13:11:3

```sql
--This view fetches the number of companies worked in and total years of experience of the resource
CREATE VIEW FA_M1_T1_RSRC_TOTAL_EXP AS
SELECT r_id,MIN(r_name) AS name,COUNT(r_name) AS no_comp_worked,SUM(TOT_COMP_EXP) AS TOTAL_EXP FROM FA_M1_T1_RSRC_COMP_
GROUP BY r_id;

SELECT * FROM FA_M1_T1_RSRC_TOTAL_EXP;
```

Results 1

SELECT * FROM FA_M1_T1_RSRC_TOTAL_ Enter a SQL expression to filter results (use Ctrl+Space)

	r_id	name	no_comp_worked	TOTAL_EXP
1	1	Alex	3	9
2	2	Alan	2	10
3	3	Albert	2	7
4	4	Andy	2	14
5	5	Ana	3	16
6	6	Ari	2	7
7	7	Bob	2	9
8	8	Bill	1	3
9	9	Ben	1	5
10	10	Boat	1	2
11	11	Chad	1	2

2. Using transaction table perform various operations (DDL,DML,DCL,TCL)

At least two data source or more, Refer to the data source

Data Sources : Car Sales and Film

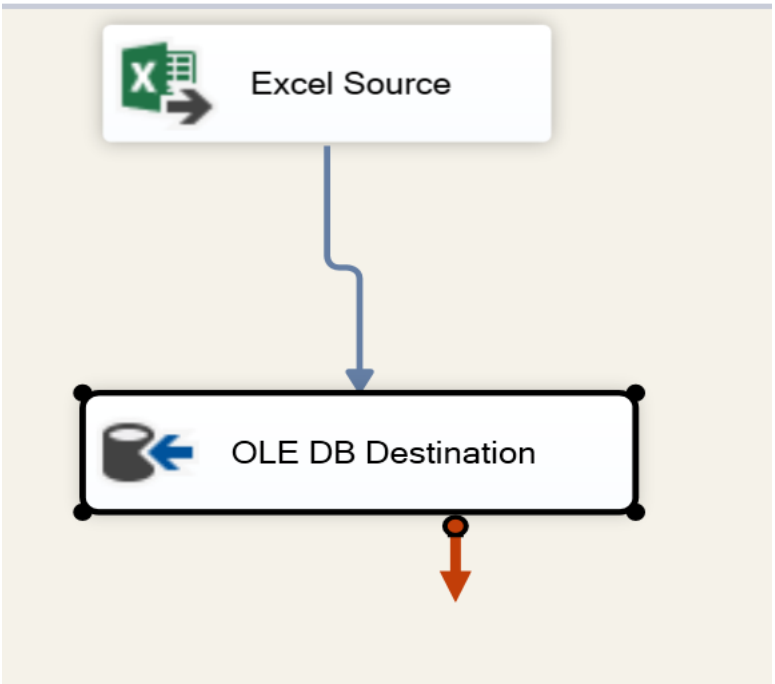
*<dlithe> Script | <Sweekar> Referential_integrity.sql | *<Sweekar> Script-3 | *<Sweekar> Script-6 | *<Sweekar> Script-7

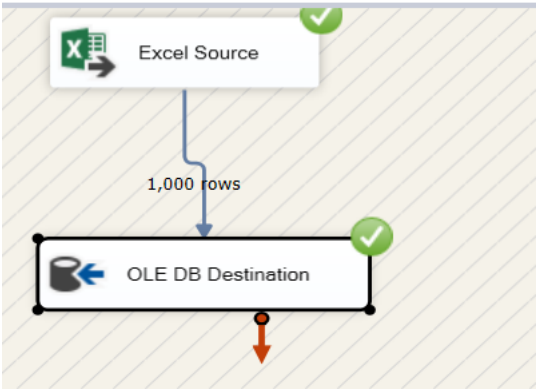
```
        State nvarchar(255),
        CustomerAddress nvarchar(255),
        OrderDate float,
        OrderID nvarchar(255),
        ShipDate float,
        ShipMode nvarchar(255),
        Shipping nvarchar(255),
        PostalCode float,
        Sales float,
        Quantity float,
        Discount float,
        CreditCardType nvarchar(255),
        CreditCard float,
        CustomerFeedback nvarchar(255)
    );

    SELECT * FROM FA_DB_M1_T2_SOURCE1;
```

Results 1

SELECT * FROM FA_DB_M1_T2_SOURCE | Enter a SQL expression to filter results (use Ctrl+Space)

SupplierID	SupplierAddress	SupplierName	SupplierContactDetails	ProductID	CarMaker	CarModel	CarColor


Excel Source
OLE DB Destination


Excel Source
1,000 rows
OLE DB Destination

```
);

SELECT * FROM FA_DB_M1_T2_SOURCE1;
```

Results 1

SELECT * FROM FA_DB_M1_T2_SOURCE

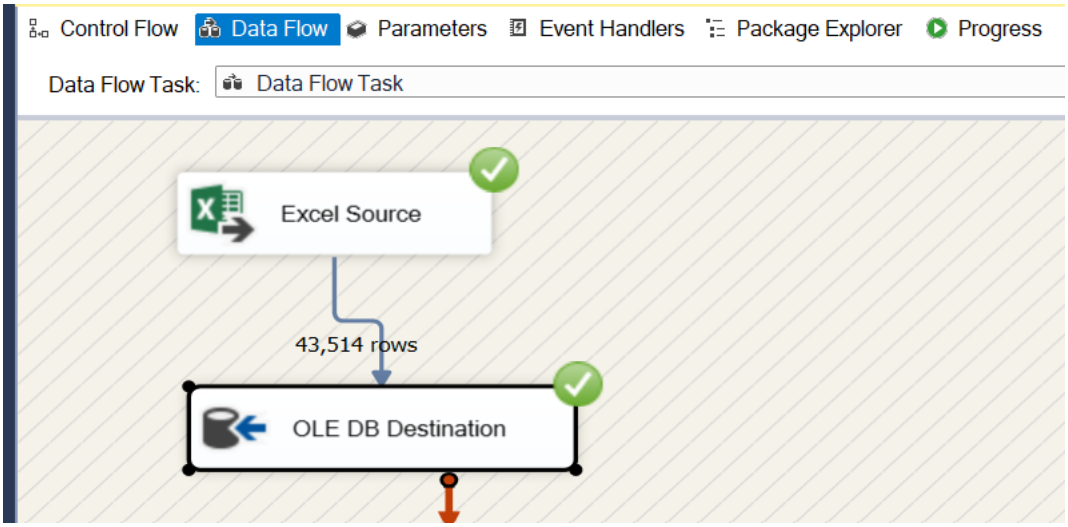
	SupplierID	SupplierAddress	SupplierName	SupplierContactDetails	ProductID	CarMaker	CarModel	CarColor
1	1	542 Dayton Center	Bubbletube	871-57-6028	8,893	Dodge	Ram 2500	Goldenrod
2	2	0674 Springview Circle	Tagopia	337-64-4060	9,444	Toyota	Tundra	Crimson
3	3	70 Autumn Leaf Center	Zoomdog	218-19-1802	253	GMC	Savana 1500	Crimson
4	4	649 Corben Lane	Oozz	635-15-3112	1,283	Volkswagen	Cabriolet	Fuscia
5	5	94 Namekagon Point	Kare	849-23-6788	8,905	Mercury	Mariner	Teal
6	6	46347 Dunning Drive	Rhynyx	378-57-0118	8,877	Toyota	Land Cruiser	Crimson
7	7	85 Coleman Parkway	Roombo	479-97-2408	101	Subaru	Impreza	Indigo
8	8	30230 Westerfield Pass	Wordify	371-69-6870	8,854	BMW	X6	Purple
9	9	4 Coleman Street	Skyvu	717-19-7839	9,043	Mitsubishi	Galant	Orange
10	10	100 Anhalt Place	Feedfire	634-55-4653	492	Subaru	Justy	Crimson
11	11	7 Esch Trail	Layo	547-88-4825	9,212	Mercedes-Benz	M-Class	Mauv
12	12	6 Meadow Vale Center	Oyoyo	440-82-9219	7,891	Ford	Taurus X	Crimson
13	13	0972 Pepper Wood La	Quatz	803-82-7568	3,334	Mercedes-Benz	CL-Class	Red
14	14	55262 Emmet Place	Gabvine	854-30-4179	8,898	Dodge	Avenger	Turquoise
15	15	330 Pennsylvania Plaza	Jaxspan	385-11-6886	4,531	Nissan	Pathfinder	Khaki
16	16	428 Meadow Ridge All	Mybuzz	632-59-2978	3,327	BMW	M3	Turquoise
17	17	26 Stuart Court	Gabcube	236-54-6347	7,975	Mercedes-Benz	R-Class	Puce

```
CREATE TABLE FA_DB_M1_T2_SOURCE2_CINEMA(
    Film_Type nvarchar(255),
    film_code float,
    cinema_code float,
    total_sales float,
    tickets_sold float,
    tickets_out float,
    show_time float,
    occu_perc float,
    ticket_price float,
    ticket_use float,
    capacity float,
    date_ float,
    month_ float,
    quarter_ float,
    day_ float
);

SELECT * FROM FA_DB_M1_T2_SOURCE2_CINEMA;
```

Results 1

SELECT * FROM FA_DB_M1_T2_SOURCE2

Film_Type	film_code	cinema_code	total_sales	tickets_sold	tickets_out	show_time	occu_perc	ticket_price




```
SELECT * FROM FA_DB_M1_T2_SOURCE2_CINEMA;
```

Results 1

SELECT * FROM FA_DB_M1_T2_SOURCE2 | Enter a SQL expression to filter results (use Ctrl+Space)

	Film_Type	film_code	cinema_code	total_sales	tickets_sold	tickets_out	show_time	occu_perc	ticket_price
1	Romance	1,492	304	3,900,000	26	0	4	4.26	150,000
2	Romance	1,492	352	3,360,000	42	0	5	8.08	80,000
3	Romance	1,492	489	2,560,000	32	0	4	20	80,000
4	Romance	1,492	429	1,200,000	12	0	1	11.01	100,000
5	Romance	1,492	524	1,200,000	15	0	3	16.67	80,000
6	Romance	1,492	71	1,050,000	7	0	3	0.98	150,000
7	Romance	1,492	163	1,020,000	10	0	3	7.69	102,000
8	Romance	1,492	450	750,000	5	0	3	1.57	150,000
9	Romance	1,492	51	750,000	11	0	2	0.95	68,181.81818
10	Romance	1,492	522	600,000	4	0	3	1.55	150,000
11	Romance	1,492	43	480,000	6	0	3	0.44	80,000
12	Romance	1,492	529	480,000	4	0	3	2.96	120,000
13	Romance	1,492	82	400,000	5	0	6	0.53	80,000
14	Romance	1,492	344	300,000	2	0	3	0.25	150,000
15	Romance	1,492	73	240,000	2	0	1	2.04	120,000

```
--If we have to add a NOT NULL CONSTRAINT to a column(CarMaker for example):
ALTER TABLE FA_DB_M1_T2_SOURCE1
ALTER COLUMN CarMaker NVARCHAR(250)NOT NULL;
```

Statistics 1

Name	Value
Updated Rows	0
Query	--If we have to add a NOT NULL CONSTRAINT to a column(CarMaker for example):
	ALTER TABLE FA_DB_M1_T2_SOURCE1
	ALTER COLUMN CarMaker NVARCHAR(250)NOT NULL
Finish time	Fri Oct 07 01:07:03 IST 2022

```sql
--If we want to delete the credit card informatiion due to some new law enforcement
ALTER TABLE FA_DB_M1_T2_SOURCE1
DROP COLUMN CreditCard;
```

Statistics 1

Name	Value
Updated Rows	0
Query	--If we want to delete the credit card informatiion due to some new law enforcement
	ALTER TABLE FA_DB_M1_T2_SOURCE1
	DROP COLUMN CreditCard
Finish time	Fri Oct 07 07:12:25 IST 2022

As we can see below the credit card column is deleted

Table Name: FA_DB_M1_T2_SOURCE1 ID: 290100074

Object description (comment): Type: U

Columns
Unique Keys
Check constraints
Foreign Keys
Indexes
References
Triggers
Extended Properties
Statistics
DDL
Virtual

Column Name	#	Type	Length	Scale	Precision	Not Null	Identity	Default	Collation
Gender	13	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
JobTitle	14	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
PhoneNumber	15	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
EmailAddress	16	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
City	17	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
Country	18	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
CountryCode	19	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
State	20	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
CustomerAddress	21	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
OrderDate	22	float	8		53	[ ]	[ ]		
OrderID	23	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
ShipDate	24	float	8		53	[ ]	[ ]		
ShipMode	25	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
Shipping	26	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
PostalCode	27	float	8		53	[ ]	[ ]		
Sales	28	float	8		53	[ ]	[ ]		
Quantity	29	float	8		53	[ ]	[ ]		
Discount	30	float	8		53	[ ]	[ ]		
CreditCardType	31	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_
CustomerFeedback	33	nvarchar	255			[ ]	[ ]		SQL_Latin1_General_

```sql
SELECT * FROM FA_DB_M1_T2_SOURCE2_CINEMA;

--RENAMING A COLUMN
EXEC sp_rename 'FA_DB_M1_T2_SOURCE2_CINEMA.show_time','number_of_shows','Column';
```

Results 1

SELECT * FROM FA_DB_M1_T2_SOURCE2_CIN Enter a SQL expression to filter results (use Ctrl+Space)

	Film_Type	film_code	cinema_code	total_sales	tickets_sold	tickets_out	number_of_shows	occu_perc	ticket_price
1	Romance	1,492	304	3,900,000	26	0	4	4.26	150,000
2	Romance	1,492	352	3,360,000	42	0	5	8.08	80,000
3	Romance	1,492	489	2,560,000	32	0	4	20	80,000
4	Romance	1,492	429	1,200,000	12	0	1	11.01	100,000
5	Romance	1,492	524	1,200,000	15	0	3	16.67	80,000
6	Romance	1,492	71	1,050,000	7	0	3	0.98	150,000
7	Romance	1,492	163	1,020,000	10	0	3	7.69	102,000
8	Romance	1,492	450	750,000	5	0	3	1.57	150,000