Project: Relational Database Design

Problem Statement: How to convert a relational design into tables in SQL Server?

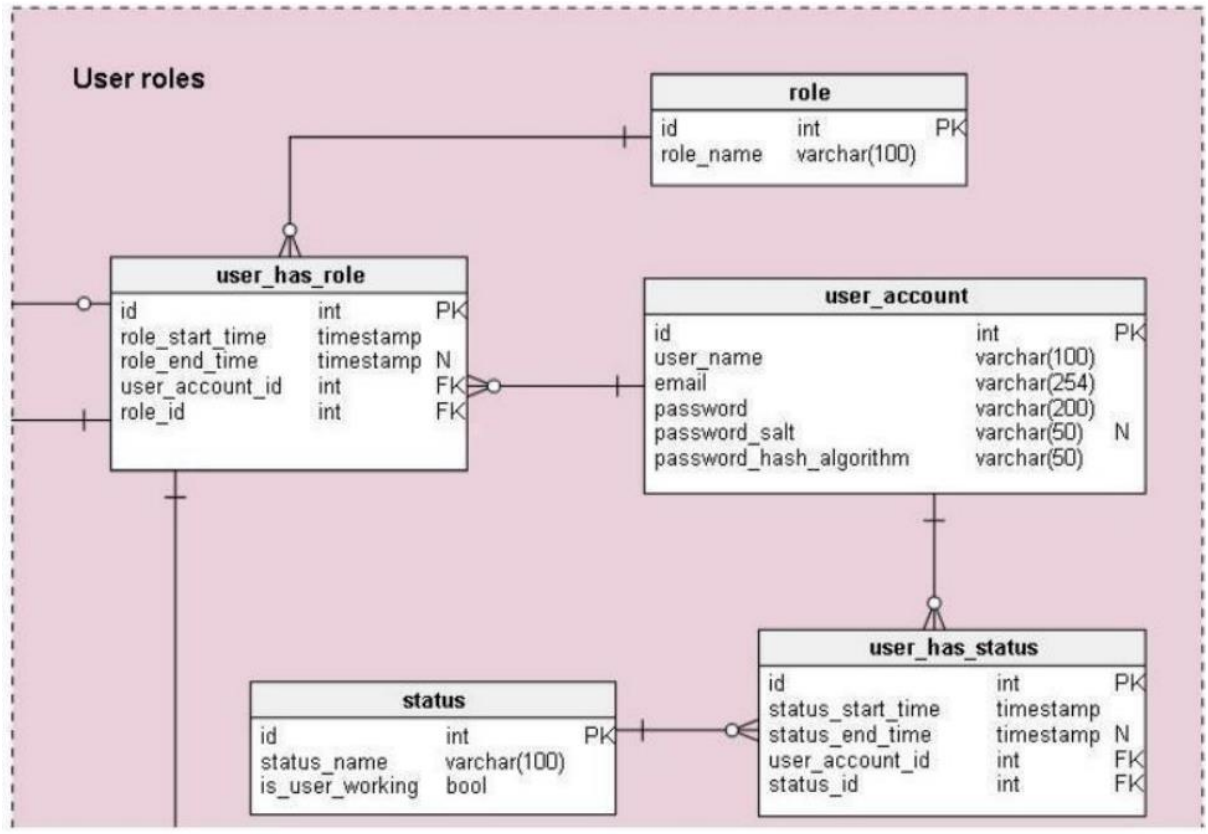
Topics: In this project, you will work on converting a relational design that enlists various users, their roles, user accounts and their statuses into different tables in SQL Server and insert data into them. Having at least two rows in each of the tables, you have to ensure that you have created respective foreign keys.

Tasks To Be Performed:

● Define relations/attributes

● Define primary keys

● Create foreign keys



1. Insert data into each of the above tables. With at least two rows in each of the tables. Make sure that you have created respective foreign keys.

- **User_Account table**

```
create database ProjectII
use ProjectII

create table UserTable (
id int not null primary key,
user_name varchar(100),
email varchar(254),
password varchar(200),
password_salt varchar(50) null,
password_hash_algorithm varchar(50)
);

insert into UserTable values(1,'srinivasa rao','srinivasarao123@gmail.com','srinirao','salt1','hash1'),
(2,'raviteja', 'uppadaravi@gmail.com','ravitja','salt2','hash1'),
(3,'rintughosh','rintu123@gmail.com','ghosh','salt3','hash2');

select * from UserTable
```

110 %

Results | Messages

	id	user_name	email	password	password_salt	password_hash_algorithm
1	1	srinivasa rao	srinivasarao123@gmail.com	srinirao	salt1	hash1
2	2	raviteja	uppadaravi@gmail.com	ravitja	salt2	hash1
3	3	rintughosh	rintu123@gmail.com	ghosh	salt3	hash2

- **Roles Table**

```
create table roleTable (
id int not null primary key,
rolename varchar(100) );

insert into roleTable values(1, 'manager'),
(2,'seniorengineer'),
(3,'QualityEngineer')

select * from roleTable
```

110 %

Results | Messages

	id	rolename
1	1	manager
2	2	seniorengineer
3	3	QualityEngineer

- **StatusTable**

```
create table statusTable(
id int primary key,
status_name varchar(100),
is_user_working BIT );

insert into statusTable values (1, 'managerial',0),
(2,'senior',1),
(3,'Associate',1);

select * from statusTable
```

110 %

Results | Messages

	id	status_name	is_user_working
1	1	managerial	0
2	2	senior	1
3	3	Associate	1

- **User_has_role**

```
create table User_has_role (
id int primary key,
role_start_time timestamp,
role_end_time DATETIME null,
user_account_id int foreign key references usertable(id) on delete cascade,
role_id int foreign key references roleTable(id) on delete cascade);

insert into User_has_role(id,role_end_time,user_account_id,role_id) values (1, NULL, 1, 1),
(2, '2025-02-07 17:00:00', 2,2),
(3, '2025-02-07 16:30:00', 3, 3);

select * from User_has_role;
```

110 %

Results | Messages

	id	role_start_time	role_end_time	user_account_id	role_id
1	1	0x00000000000007D3	NULL	1	1
2	2	0x00000000000007D4	2025-02-07 17:00:00.000	2	2
3	3	0x00000000000007D5	2025-02-07 16:30:00.000	3	3

- **User_has_status table**

```
create table user_has_status (
id int primary key,
status_start_time datetime,
status_end_time datetime null,
user_account_id int foreign key references usertable(id) on delete cascade,
status_id int foreign key references statusTable(id) on delete cascade);

INSERT INTO user_has_status (id, status_start_time, status_end_time, user_account_id, status_id)
VALUES
(1, '2024-02-07 08:00:00', NULL, 1,1),
(2, '2024-02-07 09:30:00', '2024-02-07 17:00:00', 2, 2),
(3, '2024-02-07 10:45:00', '2024-02-07 16:30:00', 3, 3);

select * from user_has_status
```

110 %

Results | Messages

	id	status_start_time	status_end_time	user_account_id	status_id
1	1	2024-02-07 08:00:00.000	NULL	1	1
2	2	2024-02-07 09:30:00.000	2024-02-07 17:00:00.000	2	2
3	3	2024-02-07 10:45:00.000	2024-02-07 16:30:00.000	3	3

2. Delete all the data from each of the tables.

- Performed tuncate to delete all the data from each of the tables

```
truncate table user_has_status
truncate table User_has_role
truncate table statusTable
truncate table roleTable
truncate table UserTable
```

110 %

Messages

```
Commands completed successfully.

Completion time: 2024-02-07T06:47:27.4569582+05:30
```