DATABASE SYSTEMS

PROJECT REPORT

SUBMITTED TO : DR IRUM MATLOOB

SUBMITTED BY :

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PINK EYE FLU DATABASE

PROJECT SCOPE

The Pink Eye Infection Database aims to provide a comprehensive system to record and manage data related to pink eye (conjunctivitis) cases. This system will cater to medical researchers, healthcare professionals, public health authorities, and patients by offering detailed information about patient demographics, clinical characteristics, etiology, diagnosis, treatment, and epidemiology of pink eye infections.

GOALS AND OBJECTIVES

- **Comprehensive Data Collection:** Gather detailed and accurate data on pink eye infections to support research, clinical practice, and public health initiatives.
- **Enhanced Clinical Decision-Making:** Provide healthcare professionals with standardized guidelines and evidence-based practices to diagnose and treat pink eye infections effectively.
- **Public Health Monitoring:** Enable health authorities to monitor outbreaks, implement preventive measures, and educate the public about pink eye prevention and treatment.
- **Patient Empowerment:** Offer reliable information to patients, allowing them to understand their condition better and make informed decisions about their eye health.

BASIC FEATURES

1. **Patient Information Management:**
   - Store patient demographics including age, gender, and geographic location.
   - Record clinical characteristics such as symptoms, duration, and severity of pink eye infections.
2. **Etiology Tracking:**
   - Identify and record the causative agents (bacteria, viruses, allergens, irritants) of pink eye infections.
3. **Diagnosis Management:**
   - Track diagnostic tests performed and their results.
   - Store information related to different diagnostic procedures.
4. **Treatment Information:**
   - Document treatment modalities used, including medication and treatment outcomes.

- Track the duration and effectiveness of treatments.

5. Epidemiological Data:

- Monitor incidence, prevalence, and seasonal patterns of pink eye infections.
- Identify and record risk factors associated with the infection.

GUI FEATURES

User Authentication:

- Secure login for different user roles (researchers, healthcare professionals, public health authorities, patients).

Data Entry Forms:

- Intuitive forms for entering patient details, infection characteristics, diagnostic information, and treatment details.
- Forms for recording and updating etiology and epidemiological data.

Search and Filter Options:

- Ability to search and filter records based on various criteria such as patient demographics, symptoms, etiology, diagnosis, and treatment outcomes.

Reporting and Analytics:

- Generate reports on patient statistics, treatment efficacy, and epidemiological trends.
- Visual analytics tools for data visualization (graphs, charts, etc.).

Data Security and Privacy:

- Ensure data privacy and security by implementing access controls and encryption.
- Compliance with healthcare regulations regarding patient data confidentiality.

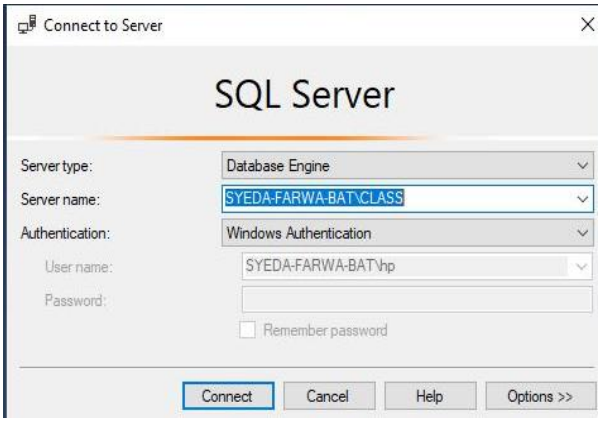
Relationship Management:

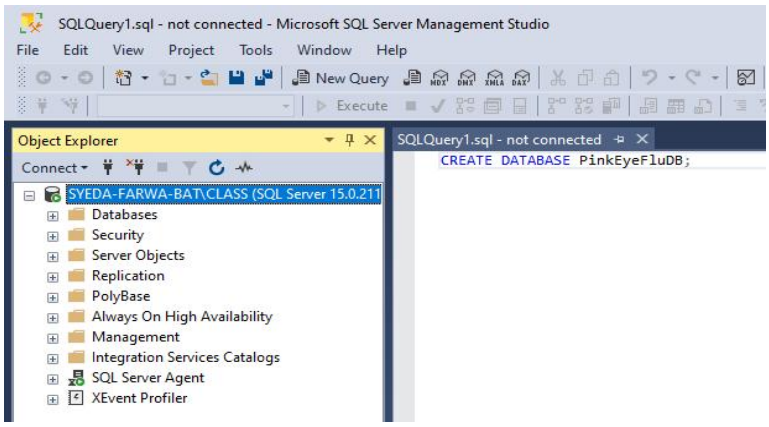
- Interface to manage relationships between patients, infections, diagnoses, treatments, and physicians.
- Visual representation of relationships (ER diagrams) within the GUI for better understanding.

Integration with External Systems:

- Interfaces to interact with other systems such as the course catalog, financial aid, and billing systems.

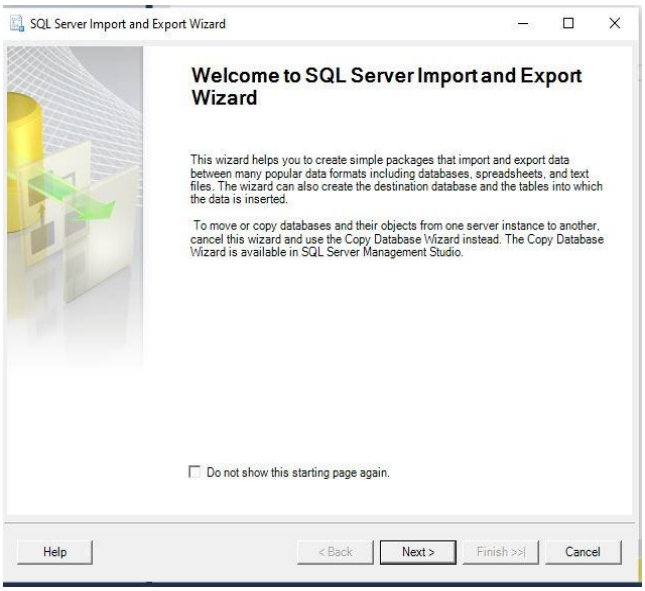
CREATING DATABASE

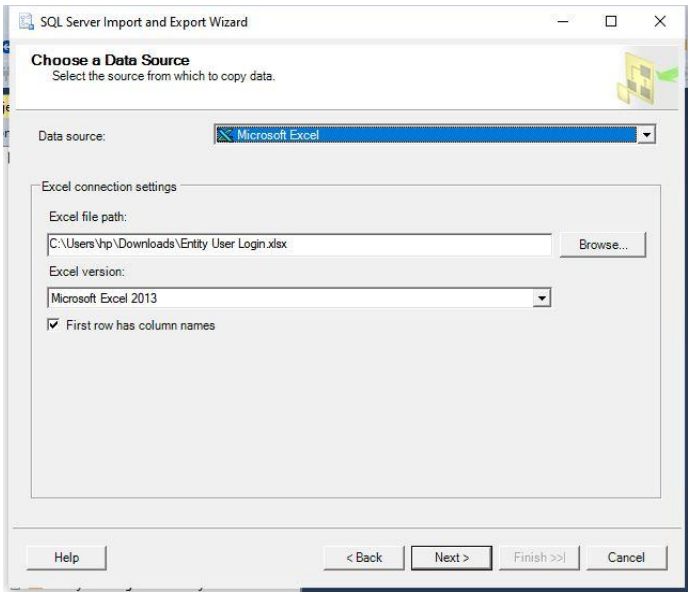


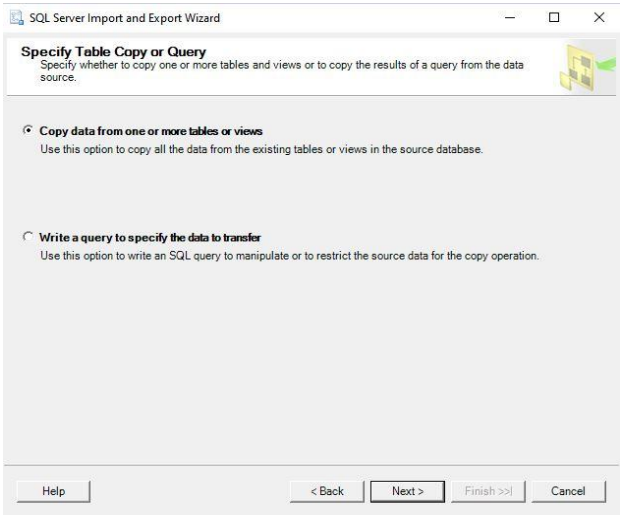


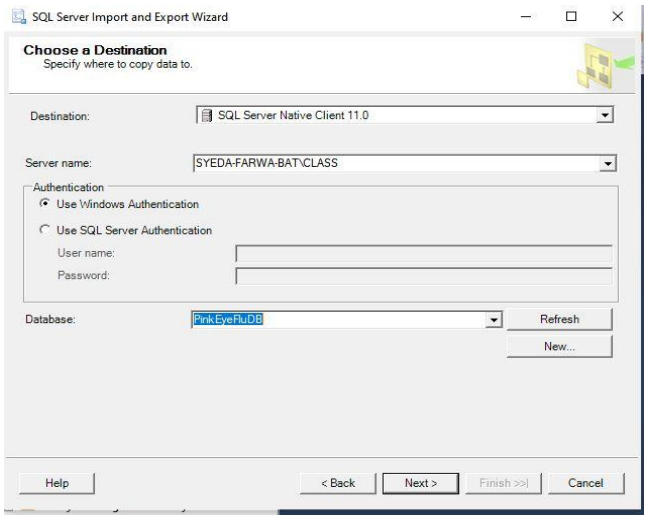
CREATING TABLES AND IMPORTING DATA INTO TABLES THROUGH EXCEL

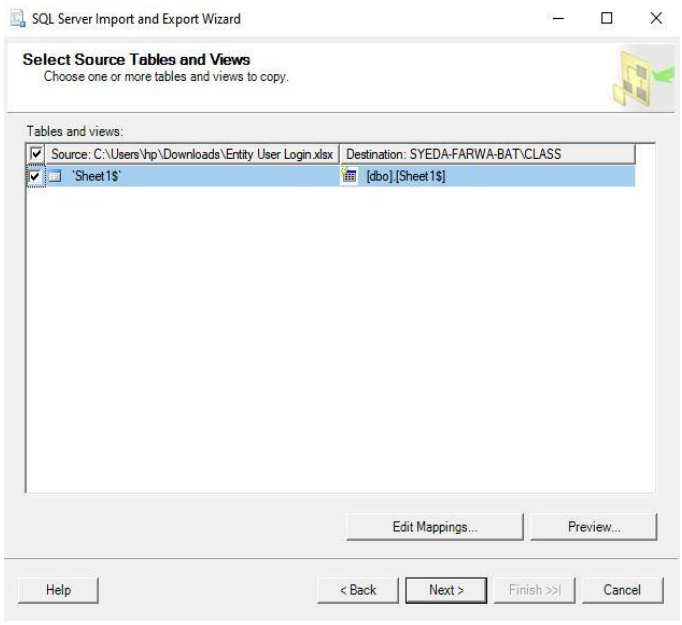
1. USER LOGIN TABLE :

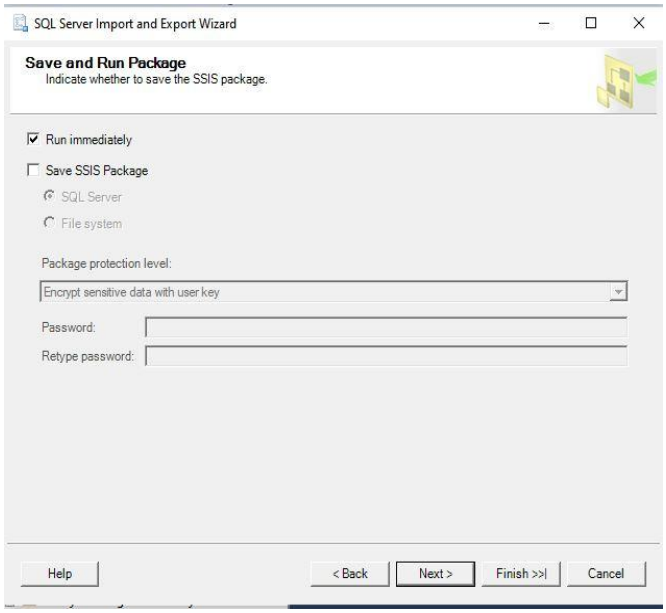


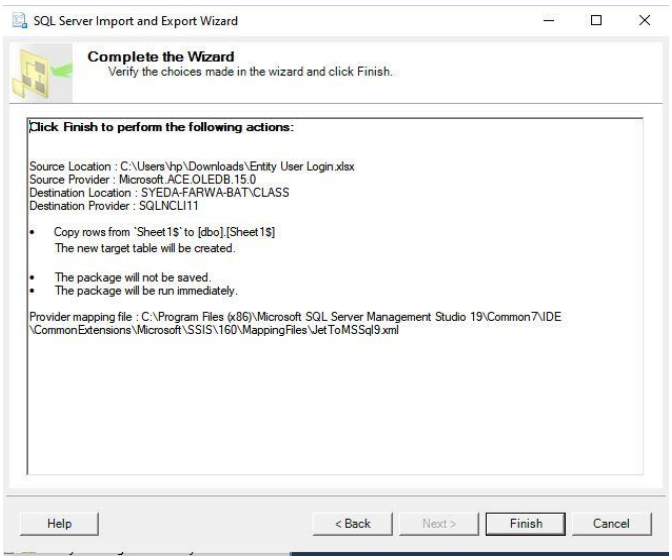


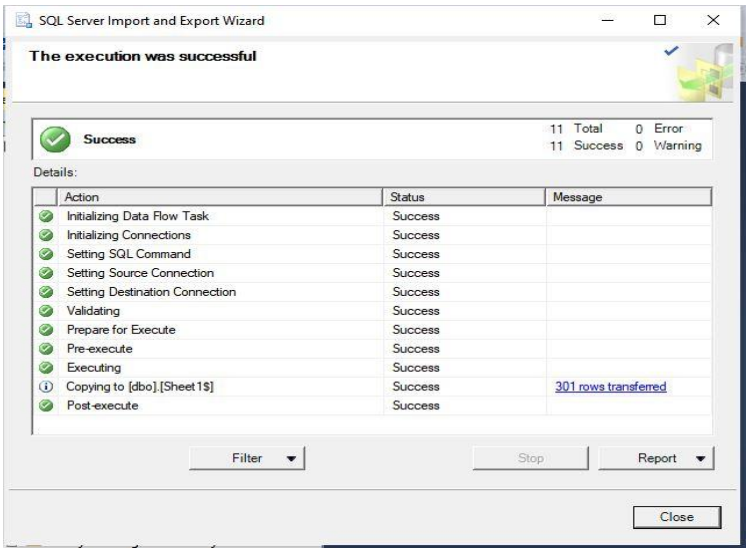




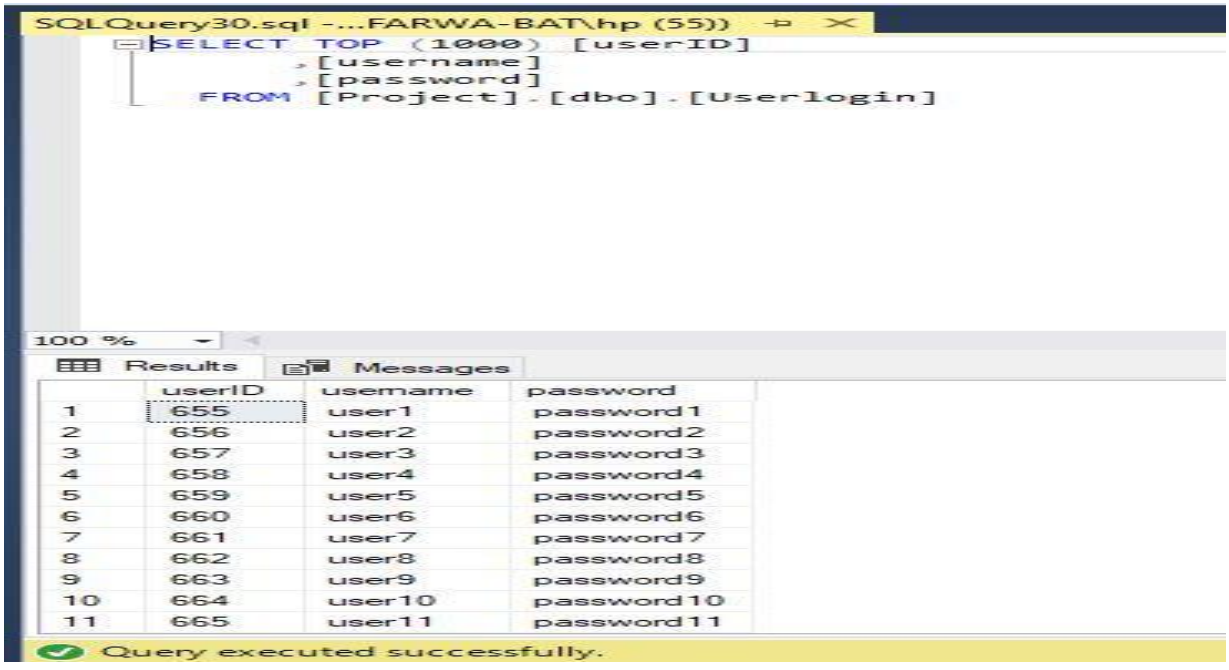




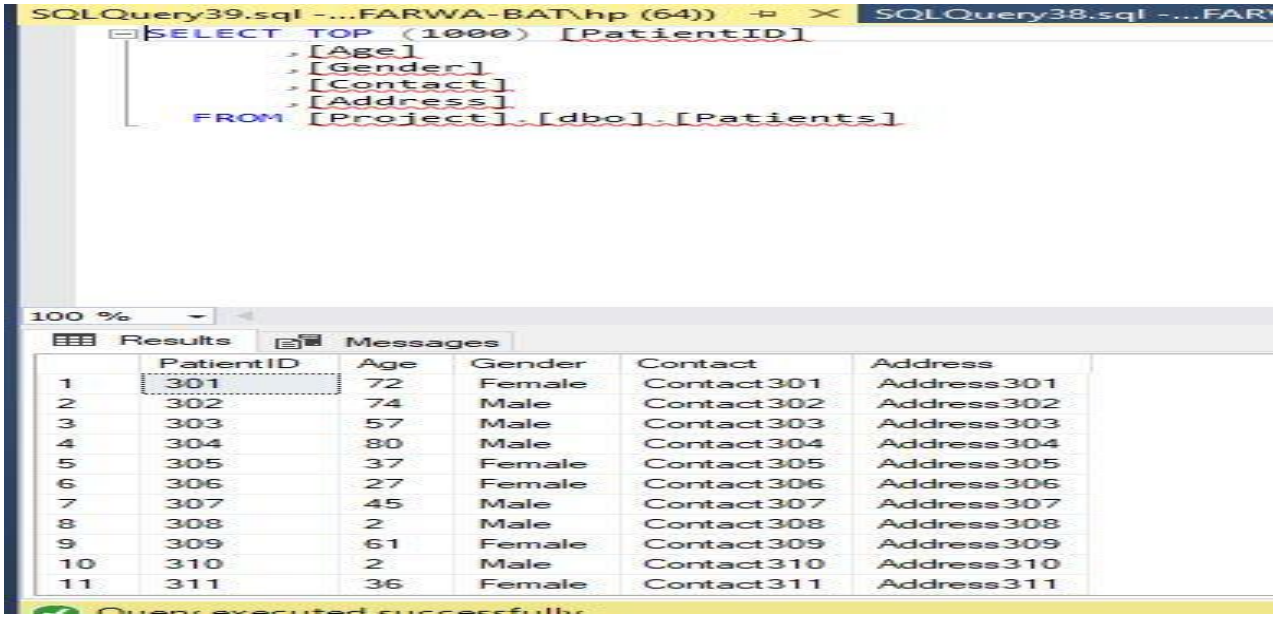




And the table " User login" is created :



2. PATIENT TABLE : Starting steps are same as above. By doing above steps, table is created :



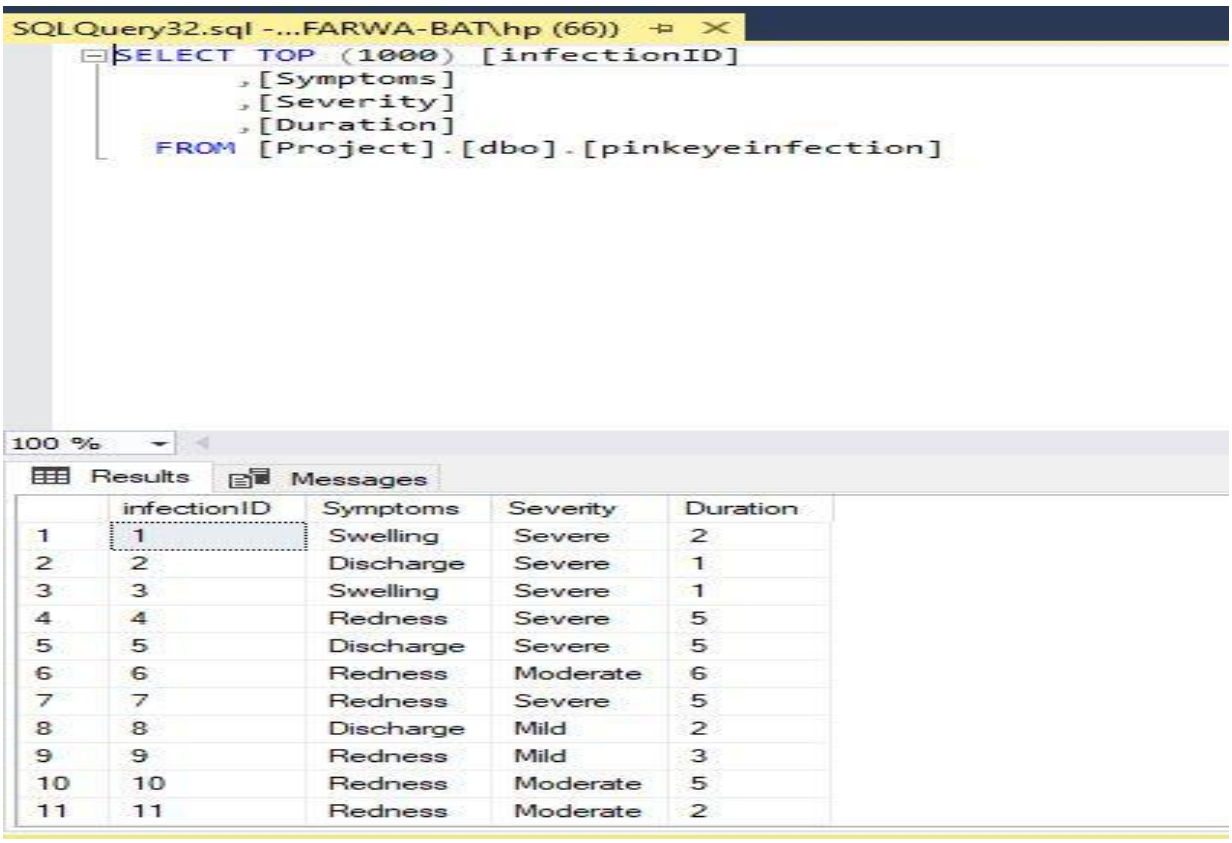
```
SELECT TOP (1000) [PatientID]
      ,[Age]
      ,[Gender]
      ,[Contact]
      ,[Address]
  FROM [Project].[dbo].[Patients]
```

100 %

Results | Messages

	PatientID	Age	Gender	Contact	Address
1	301	72	Female	Contact301	Address301
2	302	74	Male	Contact302	Address302
3	303	57	Male	Contact303	Address303
4	304	80	Male	Contact304	Address304
5	305	37	Female	Contact305	Address305
6	306	27	Female	Contact306	Address306
7	307	45	Male	Contact307	Address307
8	308	2	Male	Contact308	Address308
9	309	61	Female	Contact309	Address309
10	310	2	Male	Contact310	Address310
11	311	36	Female	Contact311	Address311

3. PINKEYEINFECTION TABLE :



```
SELECT TOP (1000) [infectionID]
      ,[Symptoms]
      ,[Severity]
      ,[Duration]
  FROM [Project].[dbo].[pinkeyeinfection]
```

100 %

Results | Messages

	infectionID	Symptoms	Severity	Duration
1	1	Swelling	Severe	2
2	2	Discharge	Severe	1
3	3	Swelling	Severe	1
4	4	Redness	Severe	5
5	5	Discharge	Severe	5
6	6	Redness	Moderate	6
7	7	Redness	Severe	5
8	8	Discharge	Mild	2
9	9	Redness	Mild	3
10	10	Redness	Moderate	5
11	11	Redness	Moderate	2

4. Diagnosis table :

SQLQuery36.sql -...FARWA-BAT\hp (63)) | SQLQuery35.sql -...FARWA

```
SELECT TOP (1000) [testID]
      ,[infectionID]
      ,[testname]
      ,[result]
  FROM [Project].[dbo].[diagnosis]
```

100 %

Results | Messages

	testID	infectionID	testname	result
1	901	1	TestName_901	Result_901
2	902	2	TestName_902	Result_902
3	903	3	TestName_903	Result_903
4	904	4	TestName_904	Result_904
5	905	5	TestName_905	Result_905
6	906	6	TestName_906	Result_906
7	907	7	TestName_907	Result_907
8	908	8	TestName_908	Result_908
9	909	9	TestName_909	Result_909
10	910	10	TestName_910	Result_910
11	911	11	TestName_911	Result_911

5. Physician table :

SQLQuery34.sql -...FARWA-BAT\hp (67))

```
SELECT TOP (1000) [physicianID]
      ,[name]
      ,[contact]
      ,[specialization]
  FROM [Project].[dbo].[physician]
```

100 %

Results | Messages

	physicianID	name	contact	specialization
1	1	John Smith	123-456-7890	Ophthalmology
2	2	Jane Doe	234-567-8901	Ophthalmology
3	3	John Smith	345-678-9012	Ophthalmology
4	4	Mary Johnson	456-789-0123	Ophthalmology
5	5	John Smith	567-890-1234	Ophthalmology
6	6	Emily Davis	678-901-2345	Ophthalmology
7	7	John Smith	789-012-3456	Ophthalmology
8	8	Michael Brown	890-123-4567	Ophthalmology
9	9	John Smith	901-234-5678	Ophthalmology
10	10	Jessica Wilson	012-345-6789	Ophthalmology
11	11	John Smith	123-456-7890	Ophthalmology

6. Treatment table :

```
SELECT TOP (1000) [treatmentID]
      ,[infectionID]
      ,[physicianID]
      ,[medication]
      ,[outcome]
      ,[otherTherapy]
  FROM [Project].[dbo].[treatment]
```

100 %

Results | Messages

	treatmentID	infectionID	physicianID	medication	outcome	otherTherapy
1	1	1	1	Painkillers	Improved	Hydration
2	2	2	2	Antibiotics	Improved	Hydration
3	3	3	3	Antiviral Medication	Recovered	Hydration
4	4	4	4	Eye Drops	Improved	Hydration
5	5	5	5	Antiviral Medication	Improved	Hydration
6	6	6	6	Antibiotics	Stable	Rest
7	7	7	7	Eye Drops	Stable	Warm Compress
8	8	8	8	Antibiotics	Improved	Rest
9	9	9	9	Antiviral Medication	Recovered	Rest
10	10	10	10	Other Medication	Improved	Hydration
11	11	11	11	Other Medication	Stable	Hydration

Query executed successfully. SYEDA-FARWA-

7. Assigned table :

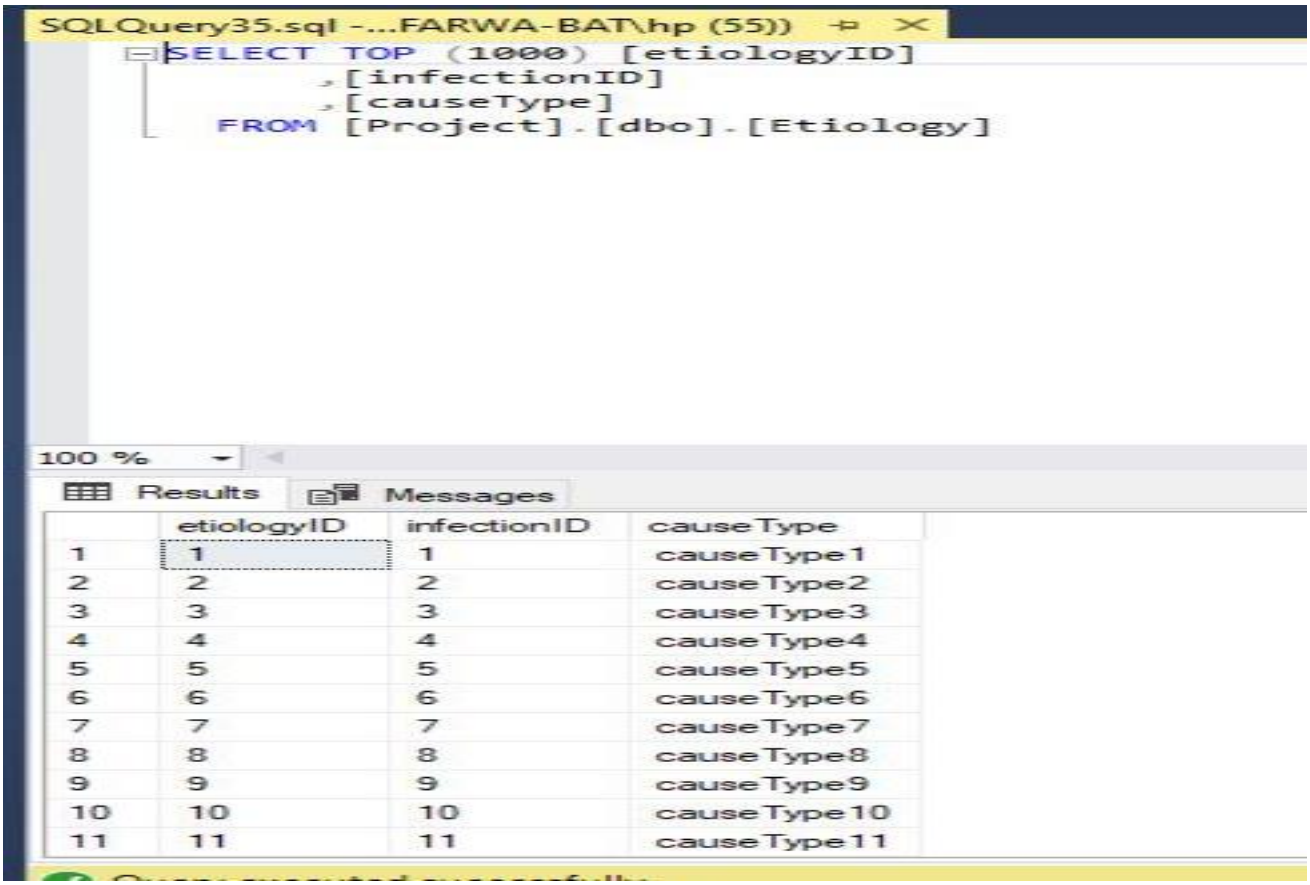
```
SELECT TOP (1000) [infectionID]
      ,[causeType]
  FROM [Project].[dbo].[Assigned]
```

100 %

Results | Messages

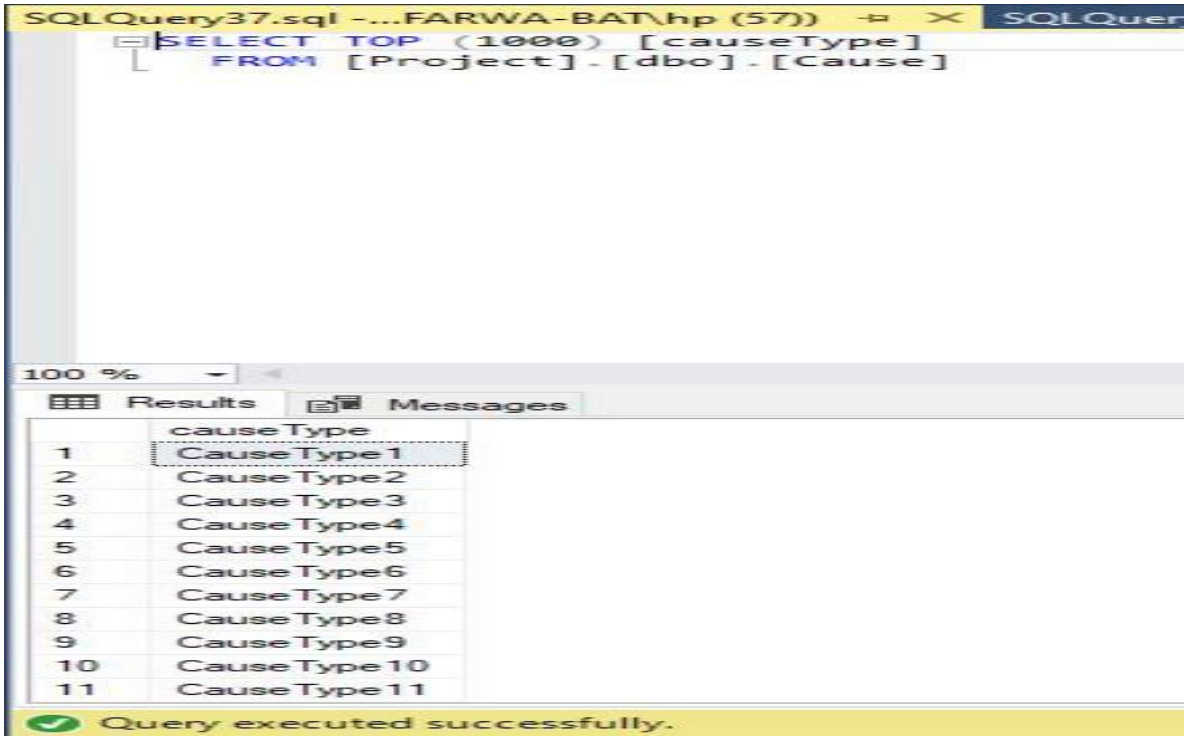
	infectionID	causeType
1	1	CauseType1
2	2	CauseType2
3	3	CauseType3
4	4	CauseType4
5	5	CauseType5
6	6	CauseType6
7	7	CauseType7
8	8	CauseType8
9	9	CauseType9
10	10	CauseType10
11	11	CauseType11

8. Ethiology table :



	etiologyID	infectionID	causeType
1	1	1	causeType1
2	2	2	causeType2
3	3	3	causeType3
4	4	4	causeType4
5	5	5	causeType5
6	6	6	causeType6
7	7	7	causeType7
8	8	8	causeType8
9	9	9	causeType9
10	10	10	causeType10
11	11	11	causeType11

9. Cause table :



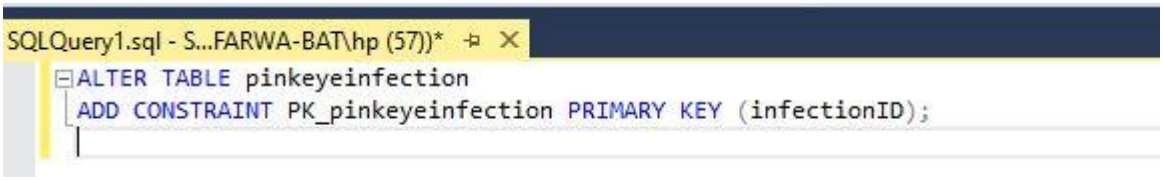
	causeType
1	CauseType1
2	CauseType2
3	CauseType3
4	CauseType4
5	CauseType5
6	CauseType6
7	CauseType7
8	CauseType8
9	CauseType9
10	CauseType10
11	CauseType11

NORMALIZATION AND FUNCTIONAL DEPENDENCY

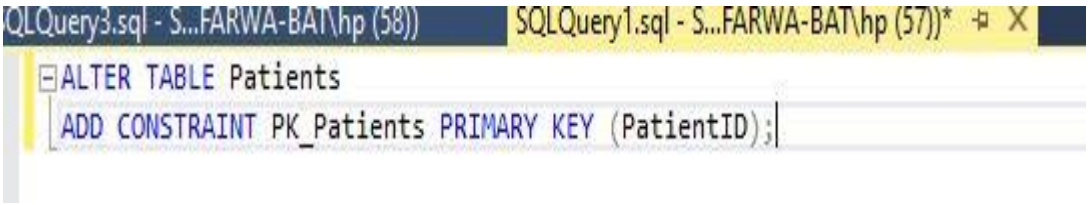
We have normalized our tables and also found the functional dependencies of these tables, we have uploaded that assignment on Google Classroom.

PRIMARY AND FOREIGN KEY THROUGH QUERIES

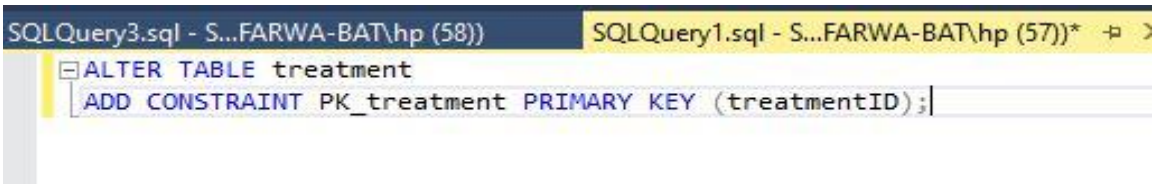
1- Pinkeyeinfection:

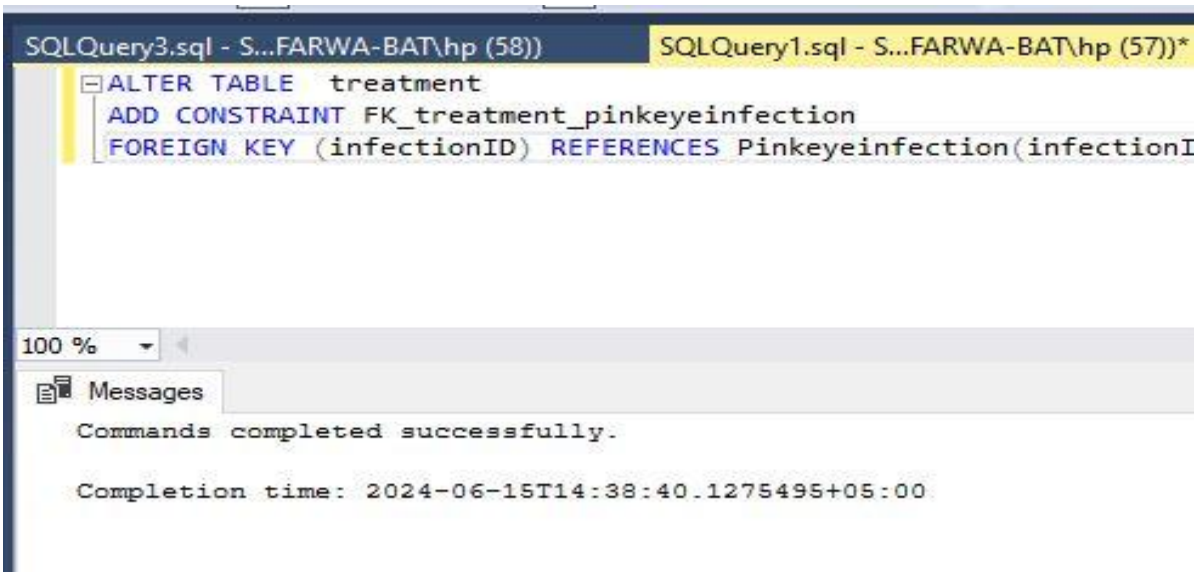


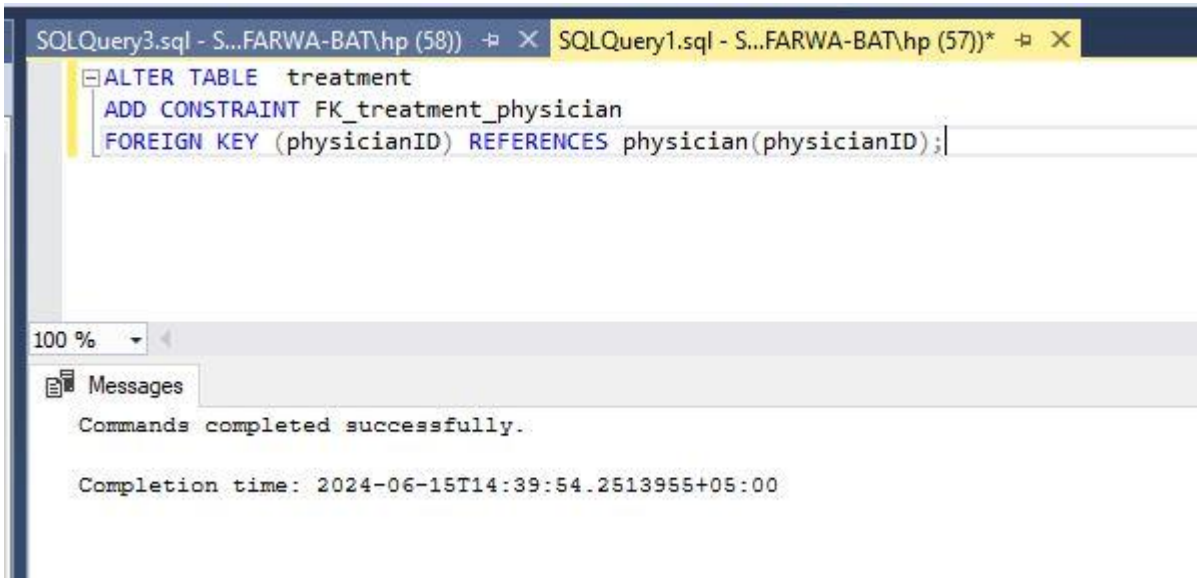
2- Patient:



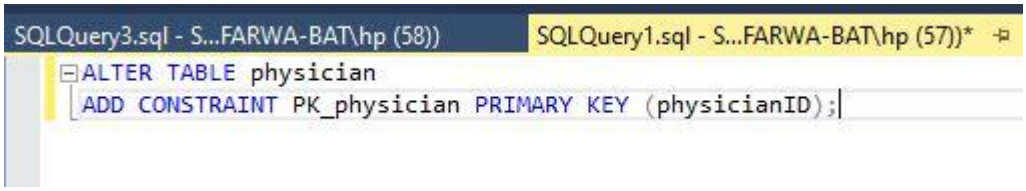
3- Treatment:



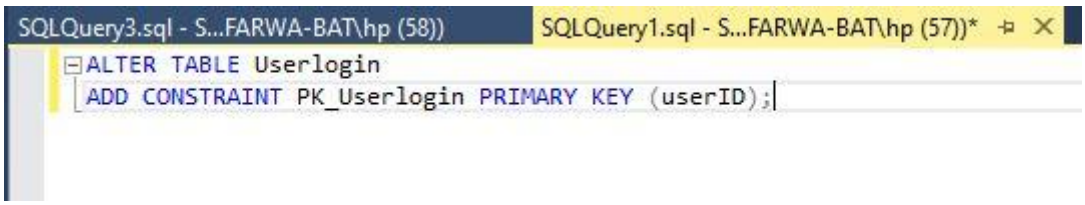




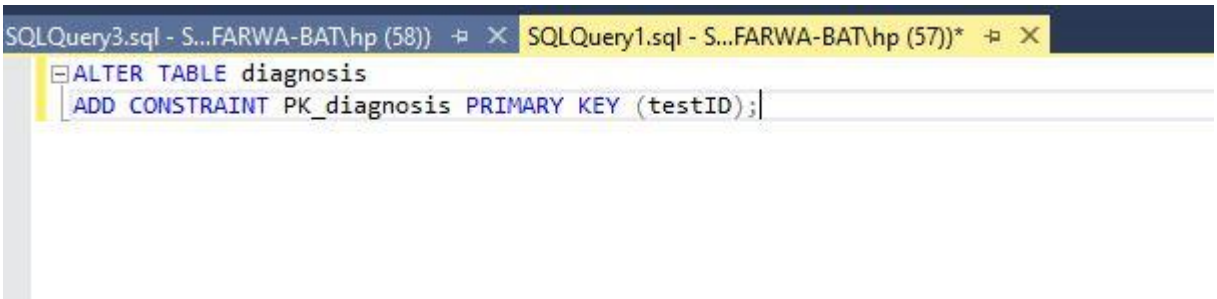
4- Physician:

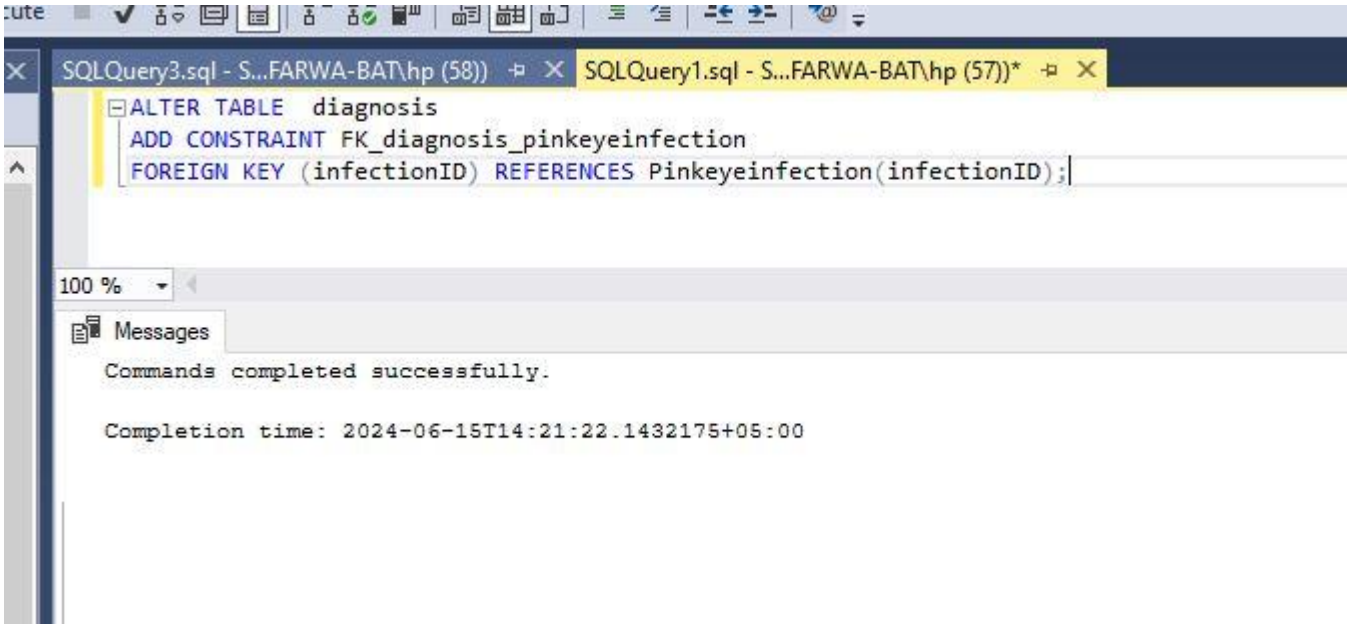


5- User login:

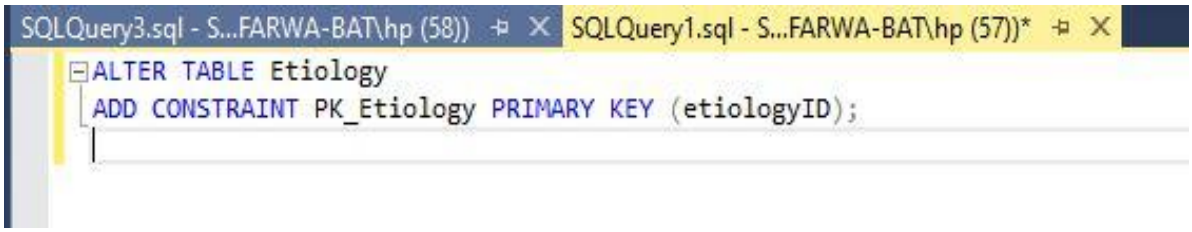


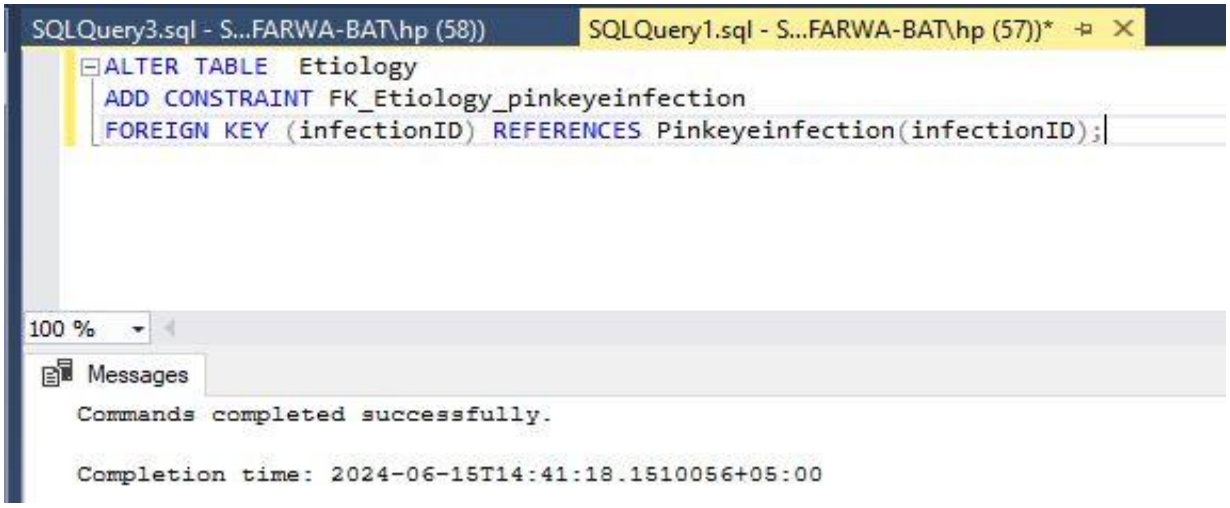
6- Diagnosis:

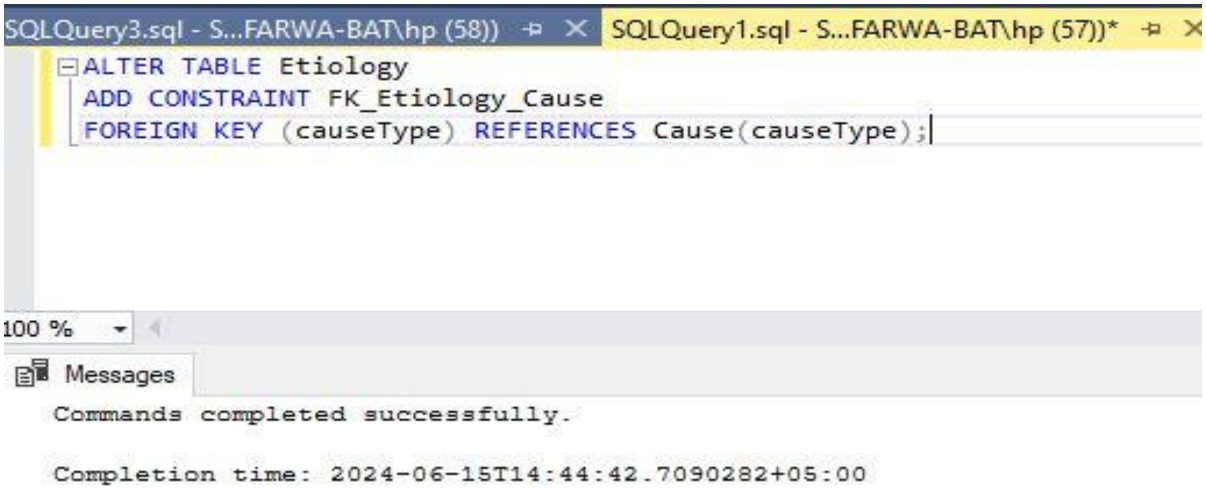



SQLQuery3.sql - S...FARWA-BAT\hp (58))
SQLQuery1.sql - S...FARWA-BAT\hp (57))*
ALTER TABLE diagnosis
ADD CONSTRAINT FK_diagnosis_pinkeyeinfection
FOREIGN KEY (infectionID) REFERENCES Pinkeyeinfection(infectionID);
100 %
Messages
Commands completed successfully.
Completion time: 2024-06-15T14:21:22.1432175+05:00

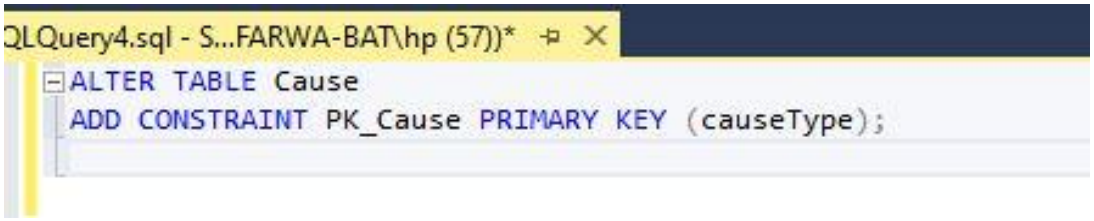
7- Etiology:


SQLQuery3.sql - S...FARWA-BAT\hp (58))
SQLQuery1.sql - S...FARWA-BAT\hp (57))*
ALTER TABLE Etiology
ADD CONSTRAINT PK_Etiology PRIMARY KEY (etiologyID);


SQLQuery3.sql - S...FARWA-BAT\hp (58))
SQLQuery1.sql - S...FARWA-BAT\hp (57))*
ALTER TABLE Etiology
ADD CONSTRAINT FK_Etiology_pinkeyeinfection
FOREIGN KEY (infectionID) REFERENCES Pinkeyeinfection(infectionID);
100 %
Messages
Commands completed successfully.
Completion time: 2024-06-15T14:41:18.1510056+05:00


SQLQuery3.sql - S...FARWA-BAT\hp (58))
SQLQuery1.sql - S...FARWA-BAT\hp (57))*
ALTER TABLE Etiology
ADD CONSTRAINT FK_Etiology_Cause
FOREIGN KEY (causeType) REFERENCES Cause(causeType);
100 %
Messages
Commands completed successfully.
Completion time: 2024-06-15T14:44:42.7090282+05:00

8- Cause:



9- Assigned: