Inner Join:

Table A   Table B
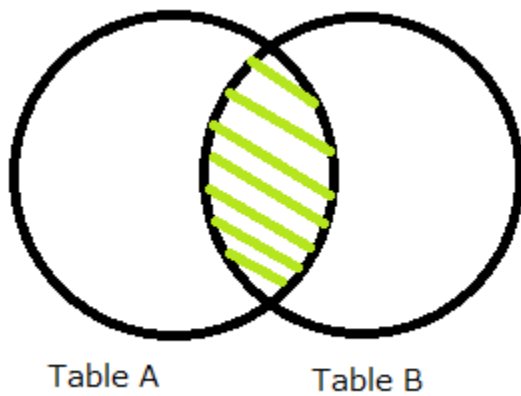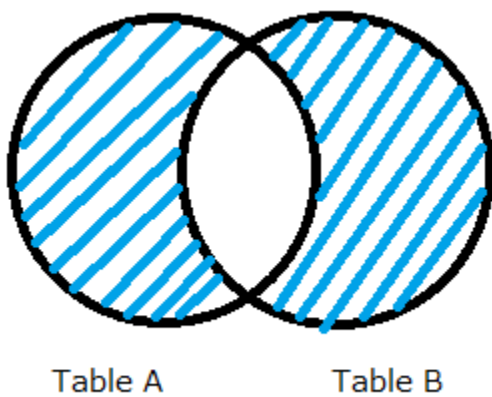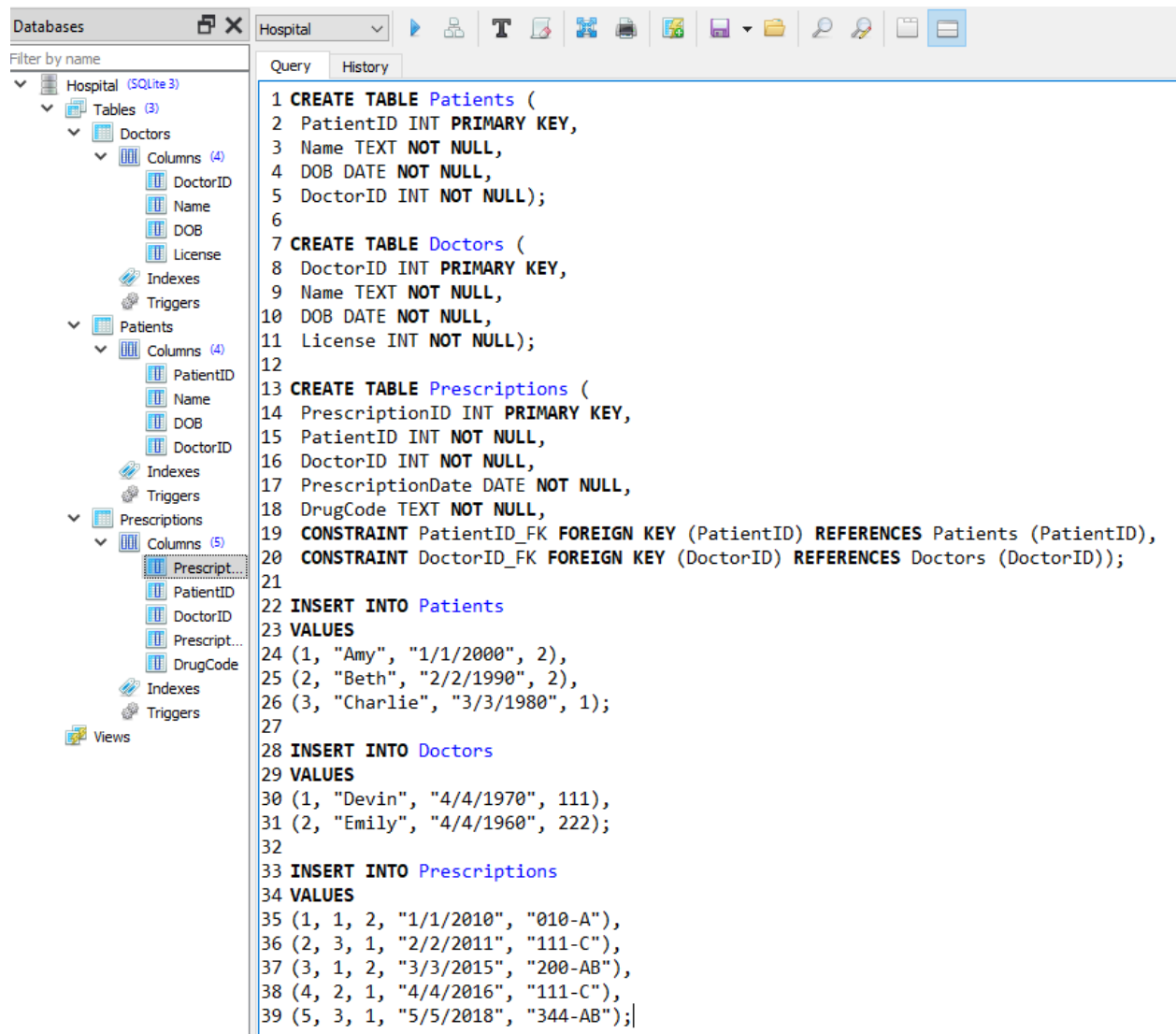
The new table in the middle will be created when using combing two tables into a new table that focus on intersection part of circle

Outer Join:

Table A   Table B

The new table is created without intersection. This is called symmetric difference; therefore, Table A and Table B are symmetric difference (A Δ B). (The triangle symbol is delta symbol by the way)

CREATE TABLE and INSERT INTO VALUES:

```sql
 1 CREATE TABLE Patients (
 2  PatientID INT PRIMARY KEY,
 3  Name TEXT NOT NULL,
 4  DOB DATE NOT NULL,
 5  DoctorID INT NOT NULL);
 6
 7 CREATE TABLE Doctors (
 8  DoctorID INT PRIMARY KEY,
 9  Name TEXT NOT NULL,
10  DOB DATE NOT NULL,
11  License INT NOT NULL);
12
13 CREATE TABLE Prescriptions (
14  PrescriptionID INT PRIMARY KEY,
15  PatientID INT NOT NULL,
16  DoctorID INT NOT NULL,
17  PrescriptionDate DATE NOT NULL,
18  DrugCode TEXT NOT NULL,
19  CONSTRAINT PatientID_FK FOREIGN KEY (PatientID) REFERENCES Patients (PatientID),
20  CONSTRAINT DoctorID_FK FOREIGN KEY (DoctorID) REFERENCES Doctors (DoctorID));
21
22 INSERT INTO Patients
23 VALUES
24 (1, "Amy", "1/1/2000", 2),
25 (2, "Beth", "2/2/1990", 2),
26 (3, "Charlie", "3/3/1980", 1);
27
28 INSERT INTO Doctors
29 VALUES
30 (1, "Devin", "4/4/1970", 111),
31 (2, "Emily", "4/4/1960", 222);
32
33 INSERT INTO Prescriptions
34 VALUES
35 (1, 1, 2, "1/1/2010", "010-A"),
36 (2, 3, 1, "2/2/2011", "111-C"),
37 (3, 1, 2, "3/3/2015", "200-AB"),
38 (4, 2, 1, "4/4/2016", "111-C"),
39 (5, 3, 1, "5/5/2018", "344-AB");
```

SELECT * FROM for each table (Patients, Doctors, and Prescriptions):

```sql
41 SELECT * FROM Patients;
42
43 SELECT * FROM Doctors;
44
45 SELECT * FROM Prescriptions;
```

	PatientID	Name	DOB	DoctorID
1	1	Amy	1/1/2000	2
2	2	Beth	2/2/1990	2
3	3	Charlie	3/3/1980	1

DoctorID	Name	DOB	License
1	1 Devin	4/4/1970	111
2	2 Emily	4/4/1960	222

	PrescriptionID	PatientID	DoctorID	PrescriptionDate	DrugCode
1	1	1	2	1/1/2010	010-A
2	2	3	1	2/2/2011	111-C
3	3	1	2	3/3/2015	200-AB
4	4	2	1	4/4/2016	111-C
5	5	3	1	5/5/2018	344-AB

Now I use INNER JOIN and WHERE to meet the condition if DoctorID == 1:

```
47 SELECT Patients.Name, Patients.DOB
48 FROM Patients
49 INNER JOIN Doctors ON Patients.DoctorID = Doctors.DoctorID
50 WHERE Patients.DoctorID == 1;
```

Result:

	Name	DOB
1	Charlie	3/3/1980