**Module 11**

1. Apply the simple BCNF procedure to define BCNF tables using the FD list Table 2. Show the result of each step in your analysis. For the final result, you should show the tables, columns, primary key of each table, foreign keys, and unique constraints. You do not need to provide CREATE TABLE statements.

**Step 1: Arrange FDs into groups by determinant:**

PatNo -> PatAge,PatZip9

PatZip9 -> PatCity

VistiNo -> VisitDate,PatNo

ProvNo -> ProvSpeciality,ProvEmail

VisitNo,ProvNo -> Diagnosis

ProvEmail -> ProvNo

**Step 2: For each FD group, make a table with the determinant as the primary key. In the table list, the primary keys are underlined.**

Patient(**PatNo**,PatAge,PatZip9)

FOREIGN KEY(PatZip9) REFERENCES PatientZip

PatientZip(**PatZip9**,PatCity)

Visit(**VisitNo**,VisitDate,PatNo)

FOREIGN KEY(PatNo) REFERENCES Patient

Provider(**ProvNo**,ProvSpeciality,ProvEmail)

FOREIGN KEY(ProvEmail) REFERENCES ProviderEmail

ProvVisit(**ProvNo**, **VisitNo**, Diagnosis)

FOREIGN KEY( ProvNo ) REFERENCES Provider

FOREIGN KEY( VisitNo ) REFERENCES Visit

ProviderEmail(**ProvEmail**,ProvNo)

FOREIGN KEY(ProvNo) REFERENCES Provider

**Step 3: Merge tables with the same columns.**

**Merge Provider and ProviderEmail**

Patient(**PatNo**,PatAge,PatZip9)

FOREIGN KEY(PatZip9) REFERENCES PatientZip

PatientZip(**PatZip9**,PatCity)

Visit(**VisitNo**,VisitDate,PatNo)

FOREIGN KEY(PatNo) REFERENCES Patient

Provider(**ProvNo**,ProvSpeciality,ProvEmail)

UNIQUE(ProvEmail)

ProvVisit(**ProvNo**, **VisitNo**, Diagnosis)

FOREIGN KEY( ProvNo ) REFERENCES Provider

FOREIGN KEY( VisitNo ) REFERENCES Visit