

Assignment Week 11

Problem 2:

Apply the simple BCNF procedure to define BCNF tables using the FD list Table 2. You should show the tables, columns, primary key of each table, foreign keys, and unique constraints.

| |
|-----------------------------|
| PatNo → PatAge |
| PatZip9 → PatCity |
| VisitNo → VisitDate |
| PatNo → PatZip9 |
| ProvNo → ProvSpecialty |
| VisitNo → PatNo |
| VisitNo, ProvNo → Diagnosis |
| ProvNo → ProvEmail |
| ProvEmail → ProvNo |

Table 2.

Solution 2:

- List of FDs

PatNo → PatAge, PatZip
PatZip → PatCity
VisitNo → PatNo, VisitDate
ProvNo → ProvSpecialty, ProvEmail
ProvNo, VisitNo → Diagnosis

- BCNF tables:

PationTable1 (PatNo, PatAge, PatZip)
FOREIGN KEY (PatZip) REFERENCES **PationTable1-1**

PationTable1-1 (PatZip, PatCity)

PationTable2 (VisitNo, PatNo, VisitDate)
FOREIGN KEY (PatNo) REFERENCES **PationTable1**

PationTable3 (ProvNo, ProvEmail, ProvSpecialty)
UNIQUE(ProvEmail)

PationTable4 (ProvNo, VisitNo, Diagnosis)
FOREIGN KEY (ProvNo) REFERENCES **PationTable3**
FOREIGN KEY (VisitNo) REFERENCES **PationTable2**