

Nurse(NurseID, Name, SSN, DoB, Address, DoctorID(fk))

Doctor(DoctorID, Name, SSN, DoB, Specialization)

Pharmacy (RequestNo, PatientInfo, DrugName, Dose, PrescribedBy)

Doctor\_Pharmacy(DoctorID(fk), RequestNo(fk))

Patients (PatientID, MedicalRecord, Address, DoB, Insurance, DoctorID(fk))

Bill (TransactionNo, BillDate, Status, PayMethod, DetailedReport)

- Is it in 1NF? Why? If it is not, normalize it to 1NF. Yes.
- Is it in 2NF? Why? If it is not, normalize it to 2NF. Yes. Because there is no partial FD.
- Is it in 3NF? Why? If it is not, normalize it to 3NF. No because there is transitive functional dependency in NurseID-> SSN DoctorID Name Address DoB and SSN -> Name Address DoB so I created a new relation SSN\_NameDoBAddress to normalize it.

Nurse(NurseID, Name, SSN(fk), DoB, Address, DoctorID(fk))

FD1: NurseID -> SSN, DoctorID

SSN\_NameDoBAddress(SSN, Name, DoB, Address)

FD1: SSN -> Name, Dob, Address

Doctor(DoctorID, SSN(fk), Specialization)

FD1: DoctorID -> SSN, Specialization

Pharmacy (RequestNo, PatientInfo, DrugName, Dose, PrescribedBy)

FD1: RequestNo -> PatientInfo, DrugName, Dose

Doctor\_Pharmacy(DoctorID(fk), RequestNo(fk))

Patients (PatientID, MedicalRecord, Address, DoB, Insurance, DoctorID(fk))

Fd1: patientID -> medicalRecord, DoB, Insurance, Address, DoctorID

Bill (TransactionNo, BillDate, Status, PayMethod, DetailedReport)

TransactionNo, patientID -> status, PayMethod, DetailedReport, BillDate