b. Create a dependency diagram for each table to illustrate the normalization process.

Person Phone Number

|  |  |
| --- | --- |
| P-ID | P-mobile-number |

Person

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P-ID | First | Middle | Last | Person\_Gender | Person\_BDate | Street | City | State | Zip |

FD1: P-ID -> FirstName, MiddleName, LastName, Gender, DOB, Street, City, State, Zip

Patient

|  |  |  |  |
| --- | --- | --- | --- |
| Patient\_ID | P-ID | Contact\_Number | Email\_ID |

FD2: PatientID, P-ID -> Contact\_Number,Email\_ID

Patient Contact

|  |  |
| --- | --- |
| PatientID | ContactNumber |

Patient Email

|  |  |
| --- | --- |
| PatientID | EmailID |

Healthcare Employee

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Healthcare-Employee-ID | Contact\_Information | Department | Specialization | YearsOfExperience | Working\_Hours | P-ID |

FD3: Healthcare-Employee-ID,P-ID -> ContactInfo, Department, Specialization, YearsOfExperience, WorkingHours, P-ID

Administrative-Staff

|  |
| --- |
| Healthcare-Employee-ID |

FD4:Healthcare-Employee-ID -> Healthcare-Employee-ID

Nurses

|  |
| --- |
| Healthcare-Employee-ID |

FD5: Healthcare-Employee-ID -> Healthcare-Employee-ID

Doctors

|  |
| --- |
| Healthcare-Employee-ID |

FD6: Healthcare-Employee-ID -> Healthcare-Employee-ID

Technicians

|  |
| --- |
| TechnicianID |

Student

|  |
| --- |
| StudentID(S1) |

Instruct

|  |
| --- |
| InstructorID(I1) |

Courses

|  |  |
| --- | --- |
| CourseID | TrainingCenterID |

FD7: CourseID -> TrainingCenterID

Training Center

|  |
| --- |
| TrainingCenterID |

Appointment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| AppointmentID | AppointmentDate | AppointmentTime | Purpose | Patient-ID | Healthcare-Employee-ID |

FD8: AppointmentID -> Date, Time, Purpose, Patient-ID, Healthcare-Employee-ID

Enroll

|  |  |  |
| --- | --- | --- |
| Enroll-ID | StudentID | CourseID |

FD9: EnrollD -> StudentID, CourseID

Teaches

|  |  |  |
| --- | --- | --- |
| Teaches-ID | InstructorID | CourseID |

FD10: TeachesD -> InstructorID, CourseID

Treatment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TreatmentID | Description | StartDate | EndDate | Outcome |

FD11: TreatmentID -> Description, StartDate, EndDate, Outcome

Billing Information

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BillingID | Date | Hospital\_Stays | Procedures | Installment\_Plans | Total\_Cost | Patient\_ID |

FD12: BillingID -> Date, Hospital-stays, Procedure, Installment\_Plans, Total\_Cost, Patient\_ID

Prescription

|  |  |  |  |
| --- | --- | --- | --- |
| PrescriptionID | Prescription-Date | Dosage | RefillInformation |

FD13: PrescriptionID -> Prescription-Date, Dosage, RefillInformation

Payment Method

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Insurance\_ID | Payment\_ID | Billing\_ID | Insurance\_Company\_Name | Insurance\_Amount |

FD14: payment-ID -> Billing-ID, Insurance-ID, Insurance\_Company\_Name, Insurance\_Amount

Insurance

|  |  |  |  |
| --- | --- | --- | --- |
| PaymentID | InsuranceID | Amount | Company-name |

FD15: PaymentID, InsuranceID -> Amount, Company-name

Medical Record

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Medical-Record-ID | TreatmentHistory | PastDiagnosis | CurrentMedications | Patient\_ID | Lab\_Results | Allergies |

FD16: Medical-Record-ID -> TreatmentHistory, PastDiagnoses, CurrentMedications, Patient\_ID, Lab\_Results, Allergies

Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| Schedule-ID | Day | Opening-Time | Closing-Time |

FD17: Schedule-ID-> Day, Opening-Time,Closing-Time

Pharmacy

|  |  |  |  |
| --- | --- | --- | --- |
| PharmacyID | Pharmacy-Name | Pharmacy-Address | Bussiness\_Ph\_No |

FD18: PharmacyID -> Pharmacy-Name, Pharmacy-Address, BussinessPhoneNo

Inventory\_System

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Inventory-ID | Pharmacy-ID | Medication-Name | Stock-Level | Supplier-Information |

FD19: Inventory-ID->Pharmacy-ID, Medication-Name, Stock-level, Supplier-Information

Medication

|  |  |  |
| --- | --- | --- |
| Medication-ID | Pharmacy-ID | Medication-Name |

FD20: Medication-ID-> Pharmacy-ID, Medication-Name

Comments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comment-ID | Comment-Contents | Rating-Score | Pharmacy\_ID | Patient-ID |

FD21: Comment-ID->comment-Contents, Rating Score, Pharmacy-ID, Patient-ID

Sell

|  |  |  |  |
| --- | --- | --- | --- |
| Pharmacy\_ID | Medication\_ID | Price | Sell\_ID |

FD22: SellID -> Pharmacy\_ID,Medication\_ID, Price

Provides

|  |  |  |  |
| --- | --- | --- | --- |
| Healthcare-employee-ID | Treatment-ID | Provides\_ID | P-ID |

FD23: Provides\_ID-> Healthcare-employee-ID, P-ID, Treatment-ID

Appointed To

|  |  |  |
| --- | --- | --- |
| PatientID | Healthcare-Employee-ID | Appointment-ID |

FD24: PatientID, EmployeeID -> AssignedDate

Receives

|  |  |  |
| --- | --- | --- |
| Receives-ID | Patient-ID | Prescription-ID |

Receives-ID -> Patient-ID, Prescription-ID

Gets

|  |  |  |
| --- | --- | --- |
| Gets-ID | Patient-ID | Treatment-ID |

Gets-ID -> Patient-ID,Treatment-ID

Specifies

|  |  |  |
| --- | --- | --- |
| Specifies-ID | Prescription-ID | Medication-ID |

Specifies-ID -> Prescription-ID, Medication-ID

HasBill

|  |  |  |
| --- | --- | --- |
| HasBill-ID | Billing-ID | Patient-ID |

HasBill-ID -> Billing-ID, Patient-ID

Administers

|  |  |  |
| --- | --- | --- |
| Administers-ID | Treatment-ID | Prescription-ID |

Administers-ID -> Treatment-ID, Prescription-ID

ModeofPayment

|  |  |  |
| --- | --- | --- |
| ModeofPayment-ID | Billing-ID | Payment-ID |

ModeofPayment-ID -> Billing-ID, Payment-ID

M1\_Person

|  |  |  |
| --- | --- | --- |
| M1-Person-ID | P-ID | P-Mobile-No |

M1-Person-ID -> P-ID, P-Mobile-No

M1\_Patient

|  |  |  |
| --- | --- | --- |
| M1-Patient-ID | Patient-ID | Contact-Number |

M1-Patient-ID -> Patient-ID, Contact-Number

M2\_Patient

|  |  |  |
| --- | --- | --- |
| M2-Patient-ID | Patient-ID | Email-ID |

M2-Patient-ID -> Patient-ID, Email-ID

M1\_Medical\_Record

|  |  |  |
| --- | --- | --- |
| M1-Medical-Record-ID | Medical-Record-ID | Lab-Result |

M1-Medical-Record-ID -> Medical-Record-ID, Lab-Result

M2\_Medical\_Record

|  |  |  |
| --- | --- | --- |
| M2-Medical-Record-ID | Medical\_Record\_ID | Allergies |

M2-Medical-Record-ID -> Medical-Record-ID, Allergies

Working-Hours

|  |  |  |  |
| --- | --- | --- | --- |
| Working-Hours-ID | Schedule-ID | Healthcare-Employer-ID | Pharmacy-ID |