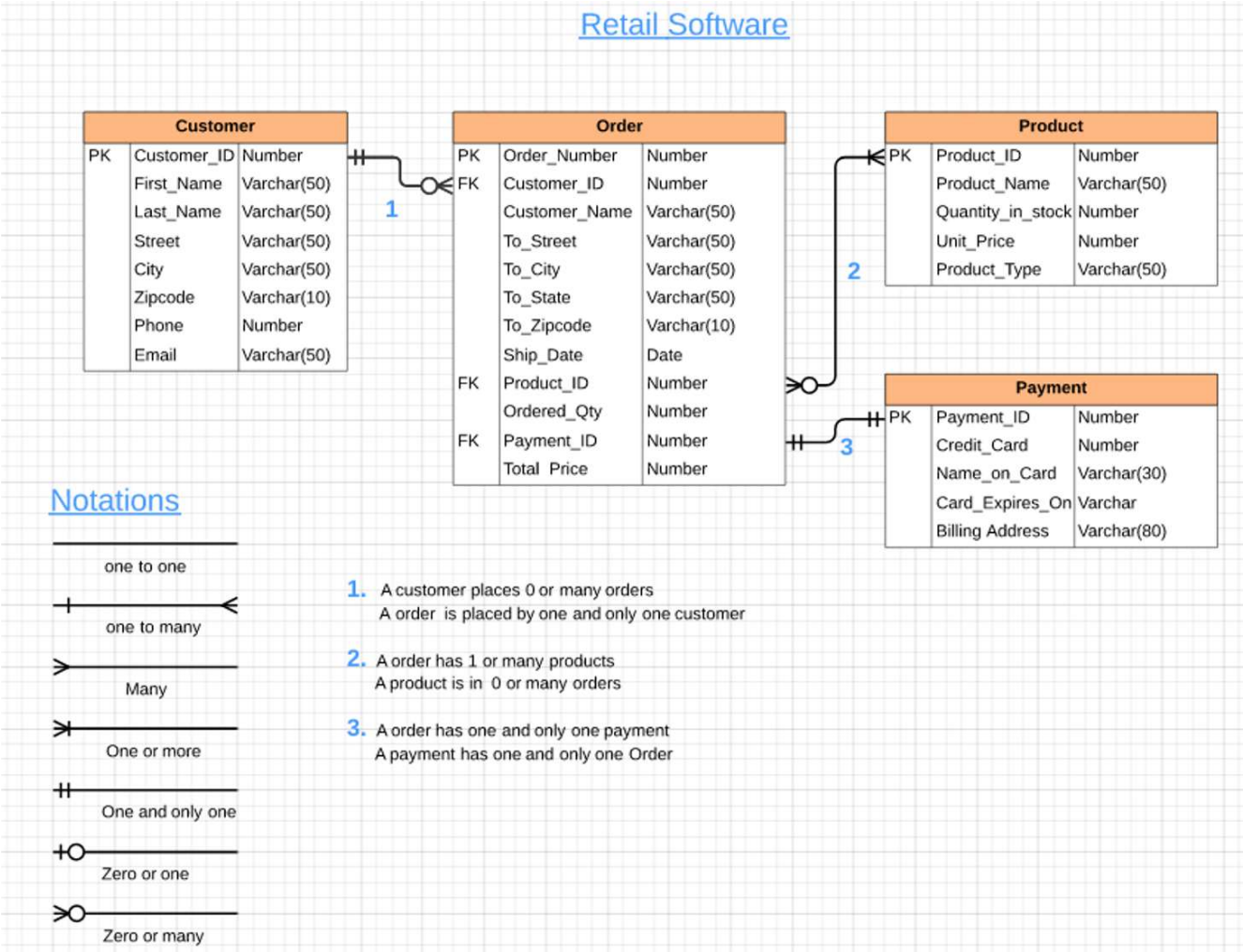
1. What is the difference between DBMS and File Systems?

DBMS	File System
Software to create and manage databases Ex: MySQL, MSSQL, Oracle, DB2	Software that manages the data files in a computer system Ex: NTFS and Ext
Helps to easily store, retrieve and manipulate data in a database	Helps to store a collection of raw data files into the hard disk
DBMS is a collection of data and user is not required to write the procedures for managing the database	File system is a collection of data. Any management with the file system, user has to write the procedures
Updating, searching, selecting data is easier since it allows using SQL querying	Storing, retrieving, updating and searching are done manually. So, it is difficult to manage data
Provides higher data consistency using normalization	Has data inconsistency. When data is redundant, it is difficult to update.
There is low redundant data	There is more redundant data
There is no procedure to check the constraints automatically in File systems.	DBMS maintains the data integrity by enforcing the constraints by adding appropriate code
DBMS have high level security like encryption, passwords etc	Less data security. General security provided by file systems are locks, guards etc
Has a sophisticated backup and recovery	Backup and recovery process is not efficient because it is not possible to recover the lost data
Suitable for medium to large organizations or multiple users	Appropriate to handle data of a small-scale organization or individual users
In DBMS data can be shared very easily due to centralized system	File system doesn't allow sharing of data or data sharing is very complex
DBMS takes care of Concurrent access using some form of locking	Concurrent access to the data in the file system has many problems like: Reading the file while other form of locking. deleting some information, updating some information

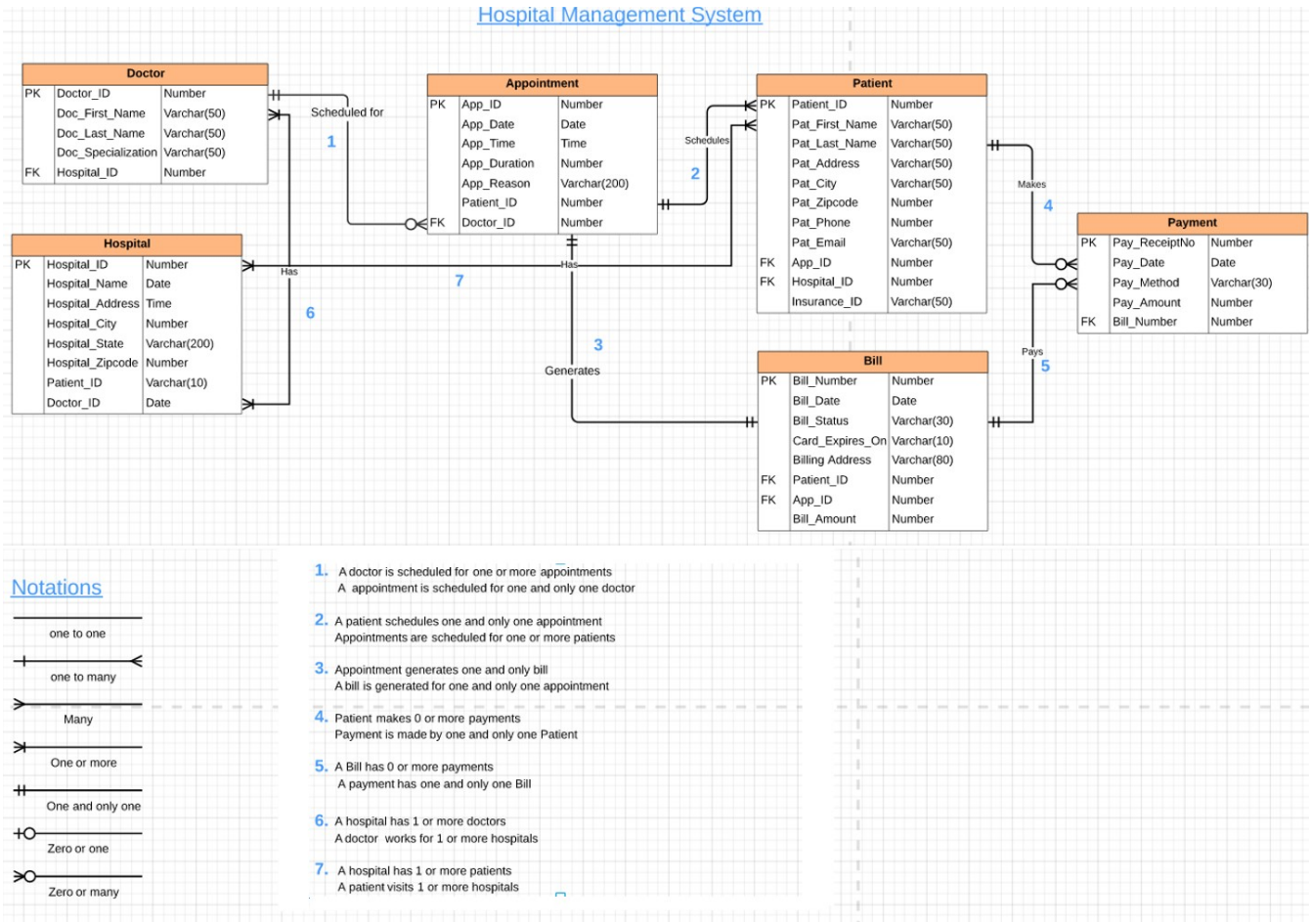
2. Please Write the ER Diagram for below
   a) Retail Software [Ex: Amazon]
   b) Hospital management system
   c) Banking Software
   d) Telecom Domain
   e) University Software
   d) Ticket Booking System

   All these ER diagrams should contain Entities, Attributes, Relations (1:1, 1:M, M:1, M:M)
   You can use any tool to Draw

ER Diagram for Retail Software [Ex: Amazon]



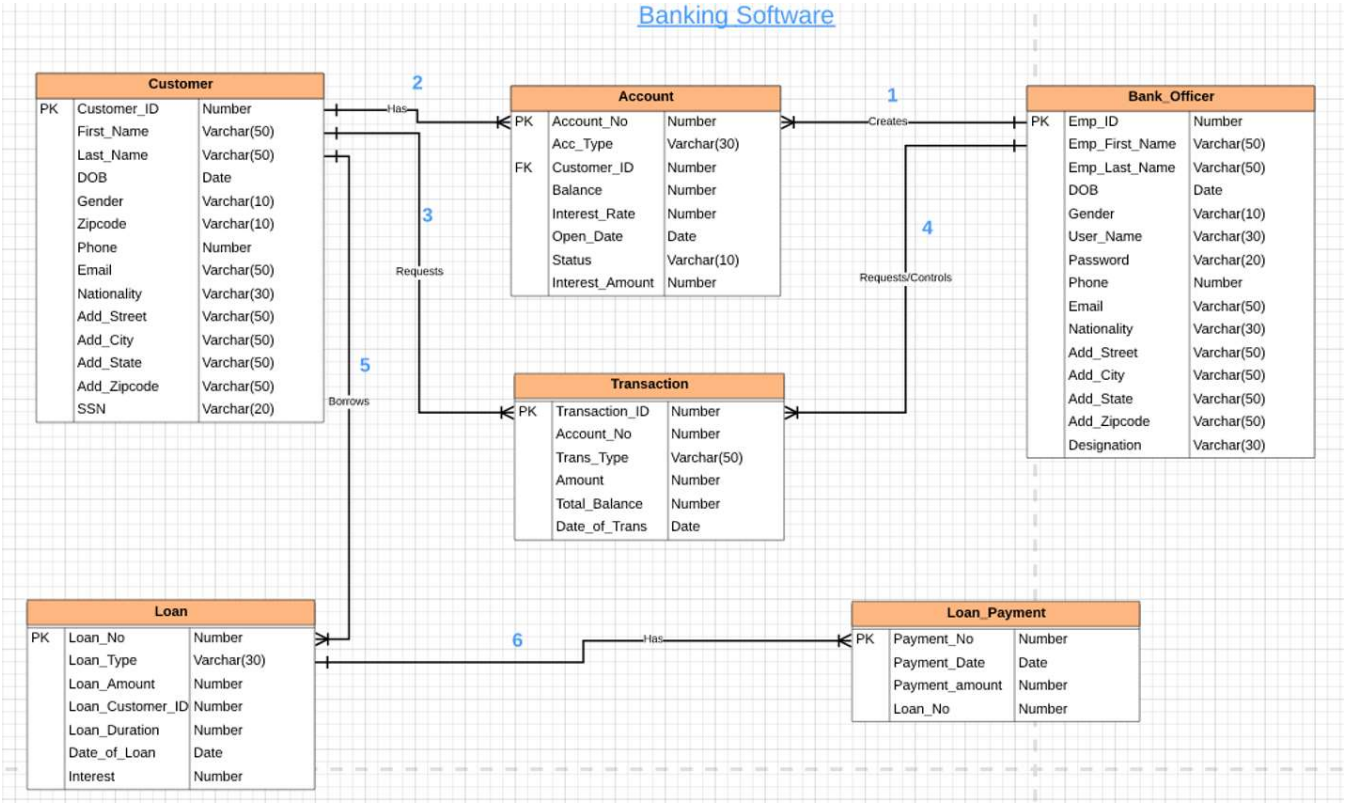
ER Diagram for Hospital management system



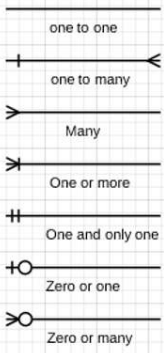
Notations

1. A doctor is scheduled for one or more appointments
   A appointment is scheduled for one and only one doctor
2. A patient schedules one and only one appointment
   Appointments are scheduled for one or more patients
3. Appointment generates one and only bill
   A bill is generated for one and only one appointment
4. Patient makes 0 or more payments
   Payment is made by one and only one Patient
5. A Bill has 0 or more payments
   A payment has one and only one Bill
6. A hospital has 1 or more doctors
   A doctor works for 1 or more hospitals
7. A hospital has 1 or more patients
   A patient visits 1 or more hospitals

ER Diagram for Banking Software

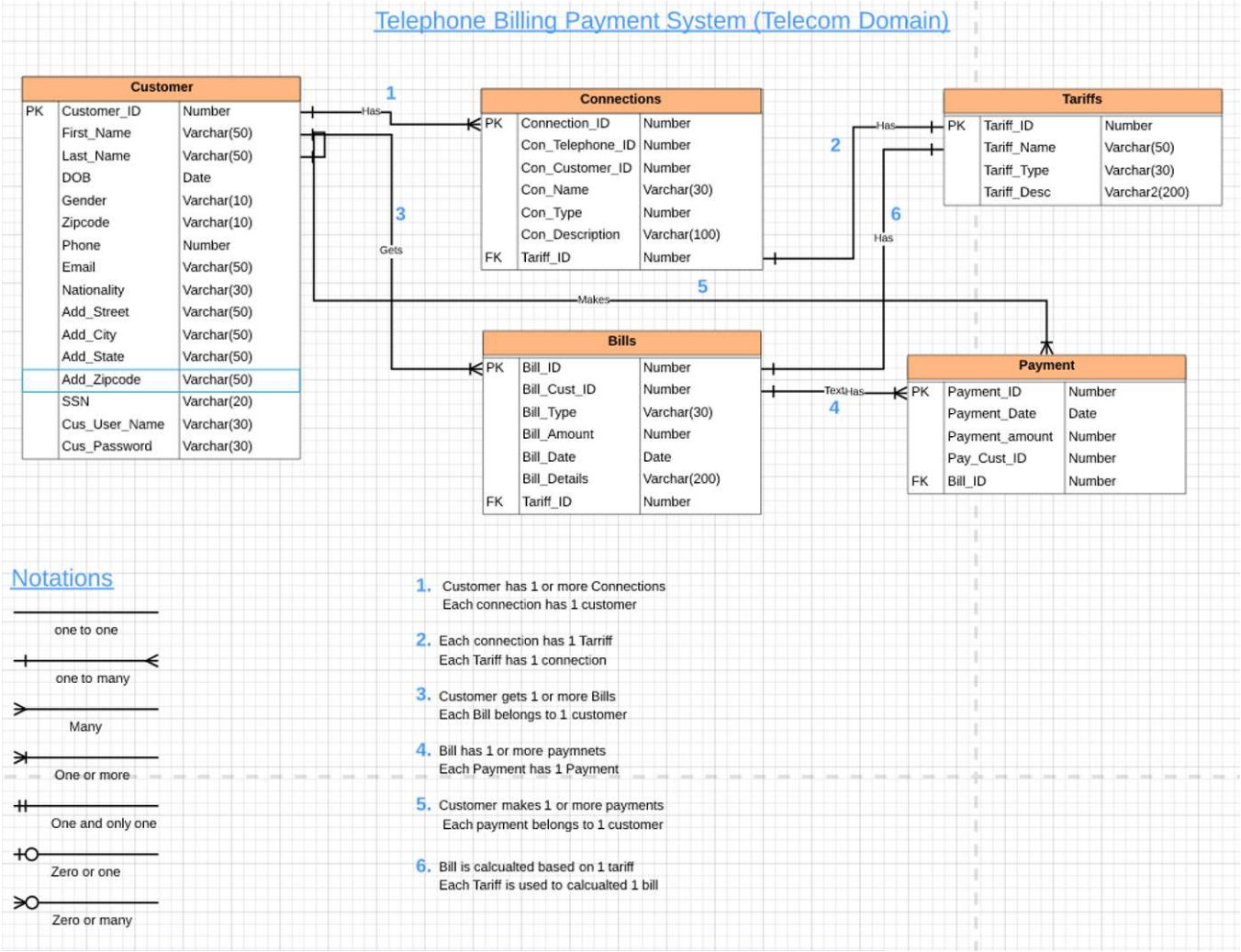


Notations

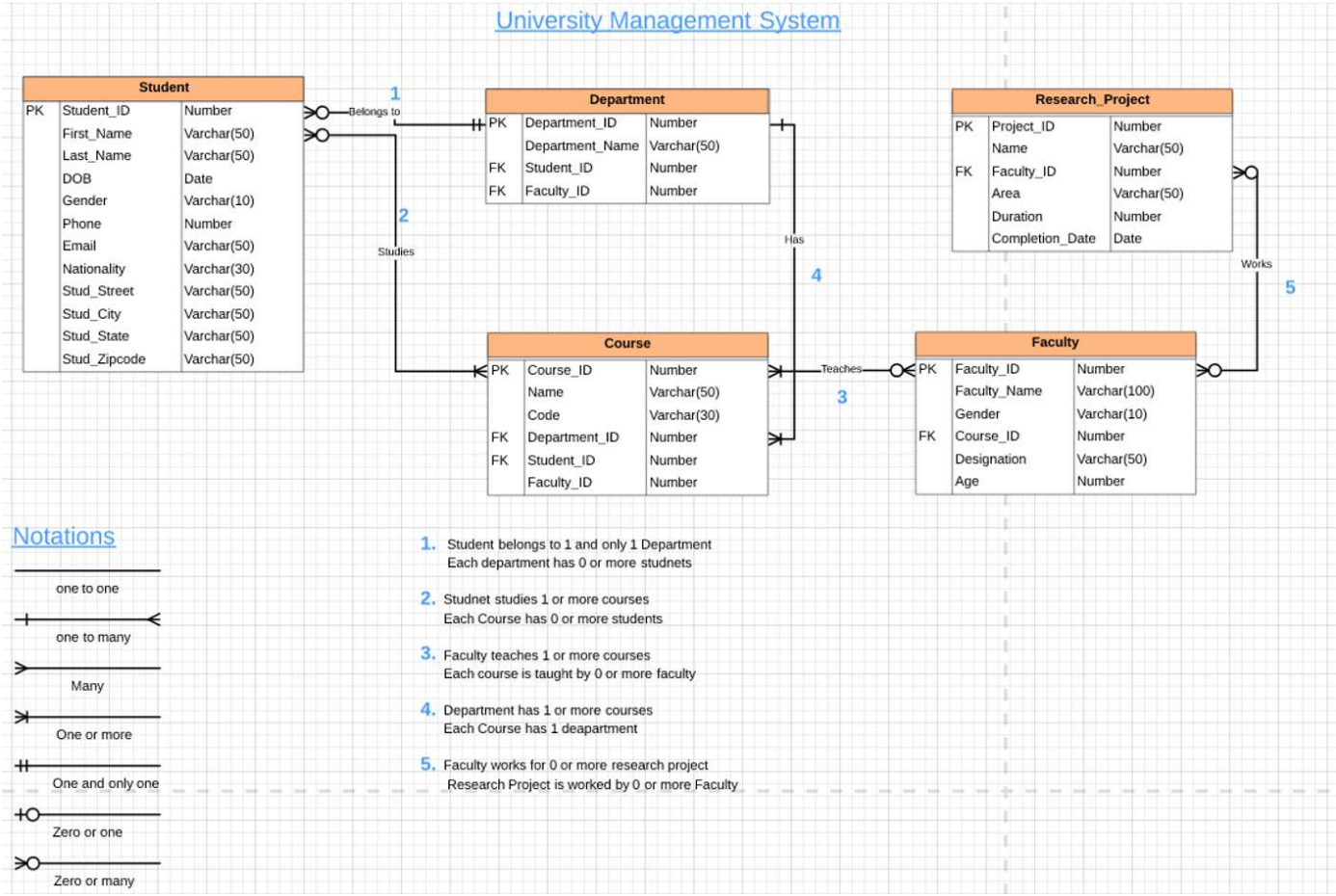


1. Bank Officer creates one or more accounts
   Account is created by one Bank Officer
2. Customer has 1 or more Accounts
   Each Account belongs to 1 customer
3. Customer requests 1 or more transactions
   Each Transaction belongs to one customer Account
4. Bank office controls/requests 1 or more transactions
   Each transaction is controlled by 1 Bank Officer
5. Customer borrows 1 or more Loans
   Each Loan is borrowed by 1 customer
6. Loan has 1 or more payments
   Each payment is for 1 Loan

ER Diagram for Telecom Domain



ER Diagram for University Software



ER Diagram for Ticket Booking System