Data and Application

Assignment 1

Team Name: Kalasala
2018111007 (Dolton M. Fernandes)
2018111006 (Giri Prasath B)
2018111019 (S.Shreevginesh)

1. A paragraph or two describing the mini-world, purpose of the database, and users of the database. What will the users do with the database?

Ans: The mini-world is about a database for a hospital. Managing a hospital is very hard as it includes many variables like patients doctors rooms etc and various relations between them a person cannot possibly remember all this and thus is prone to mistakes. Thus the purpose of the database is to store all these variables and their relations so that these mistakes can be avoided.

The users of this database are Doctors, Patients, Nurses, Patient attenders.

What different users do with the database:

1. Doctors:
    a. Find who all patients he needs to attend and not miss any of them.
    b. Remind him to attend to all his patients.
    c. Help him to locate the rooms of these patients.
    d. Make it easy for him to treat the patients as the database contains the status and condition of the patient.
    e. Find the number of patients he needs to attend a certain day so he can plan his day.
2. Patients:
    a. Keep track of their condition.
    b. Find which doctor treats them so it is easy for them to contact.
    c. Remind them of the medications they should buy or take.
    d. See their diet restrictions and their do’s and dont’s.
    e. Keep track of their bill so they can manage money
3. Nurses:
    a. Keep track of the rooms they take care of.
    b. Make it easy for them to know about the conditions of all the patients in these rooms
    c. Know what medicines to give to patients.

2) Database requirements section:

Entities:

1) Patient
2) Doctor
3) Rooms
4) Disease
5) Medicine

Weak Entities:

1) Nurse
2) Patient attendant
3) Treatment

Relationship:

1) Doctor - Patient (Attending)
2) Patient - Room (Assigned)
3) Patient - Patient attender (Caretaker)
4) Patient - Disease (Illness)
5) Nurse - Room (Governed)
6) Patient - Medicine (Prescription)
7) Doctor - Disease - Treatment - Medicine (Bill)

Subclass:

1) Doctor -> { Trainee , Permanent , Visiting }

Composite Attributes:

1) Patient Name { First, Middle, Last}
2) Nurse Name {First. Middle, Last}
3) Doctor Name {First. Middle, Last}

Multi-valued Attribute:

1) Patient -> { D.O.B , ID , Phone No , Name , Address , Gender }
2) Doctor -> { ID , Phone No , Name , Qualification , Gender, Class }
3) Medicine -> {ID, Expiry Date , Price }
4) Patient attendant -> { ID , Phone No , Name , Gender }

5) Treatment -> { ID , Cost , Time }
6) Rooms -> {Room No, Type, Cost}
7) Nurse -> {ID, Phone No , Name , Qualification, Gender }

Derived Attributes:

1) Bill
2) Age

3) Functional Requirements section:

A)**Insertion:**
1) Admit_Patient (Name,Sex,Address,Ph_no,DOB,Disease)
2) Hire_Nurse (Name,Sex,,Ph_no,Qualification)
3) Hire_Doctor (Name,Sex,Qualification,Class,Ph_no)
4) Add_ new_medicine (Name,Expiration_time)

B)**Updation:**
1) Update_PatientCondition (Patient_ID,Condition)
2) Update_PatientMedicine (Patient_ID,From_Medicine,To_Medicine)

C)**Deletion:**
1) Discharge_Patient(Patient_ID)
2) Delete_Medicine(Medicine_ID)
3) Fire_Doctor(Doctor_ID)
4) Fire Nurse (Nurse ID)

D)**Report:**
1) Create_Discharge_Summary(All IDs)
2) Create_Bill(All IDs)

Sample tables for entities:

1.Patient Details:

Patient ID	Patient Name			Patient D.O.B	Patient Addr	Patient Ph.no	Patient Gender
	First	Middle	Last				

2. Nurse Details

Nurse ID	Nurse Name			Qualification	Gender	Phone Number
	First	Middle	Last			

3.Doctor details

Doctor ID	Doctor Name			Qualification	Gender	Phone Number	Doctor Class (T , P , V)
	First	Middle	Last				

T = Trainee
P = Permanent
V = Visiting

4.Medicine details

Medicine ID	Expiry Date	Price

5.Patient Attender details

Patient Attender ID	Name			Address	Phone Number	Gender
	First	Middle	Last			

6.Treatment details

Treatment ID	Cost	Time

7.Room details

Room No.	Type	Cost

8.Disease details

Disease ID	Disease Name

Relationship Tables:

1) Attending

Patient ID	Doctor ID	Duration	Consultancy fee / day	Total Doctor Fees

2) Assignment

Patient ID	Room No	Number of days

3) Caretaker

Patient ID	Patient attender ID	Relation

4) Illness

Patient ID	Disease ID	Severity

5) Governance

Room No	Nurse ID

6) Prescription

Patient ID	Medicine ID	Qty

7) Bill

Patient ID	Total doctor fee	Medicine fee	Treatment fee	Total bill