

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## Description Of the Project:

Hospital management system is basically a system which helps efficiently store the record of the patients admitted in hospital along with the employee's detail.

In this system, the entities are patient, employees, rooms for patients, and patient's record. When a patient is admitted for a certain treatment in a hospital, the system efficiently store the admitted room number for the patient, assigned doctors for treatment, assigned nurses, other employees involved along with the span of treatment, patient record like when to meet the doctor again after the discharge. Furthermore, the system stores records of medicine that the patients has to buy until he recover totally. In addition, the system will store the record- name, address, phone number, of the employees as well, In fact, the certain doctors who are specialized in certain treatments. Hence the system is useful to store all kind of record prevailed in a hospital

This is my 4th phase of project, my project is hospital management system. I have all together 13 tables. I have taken snapshot of all the table I have created and inserted the 3 data entities in each table.

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## ER Diagram:

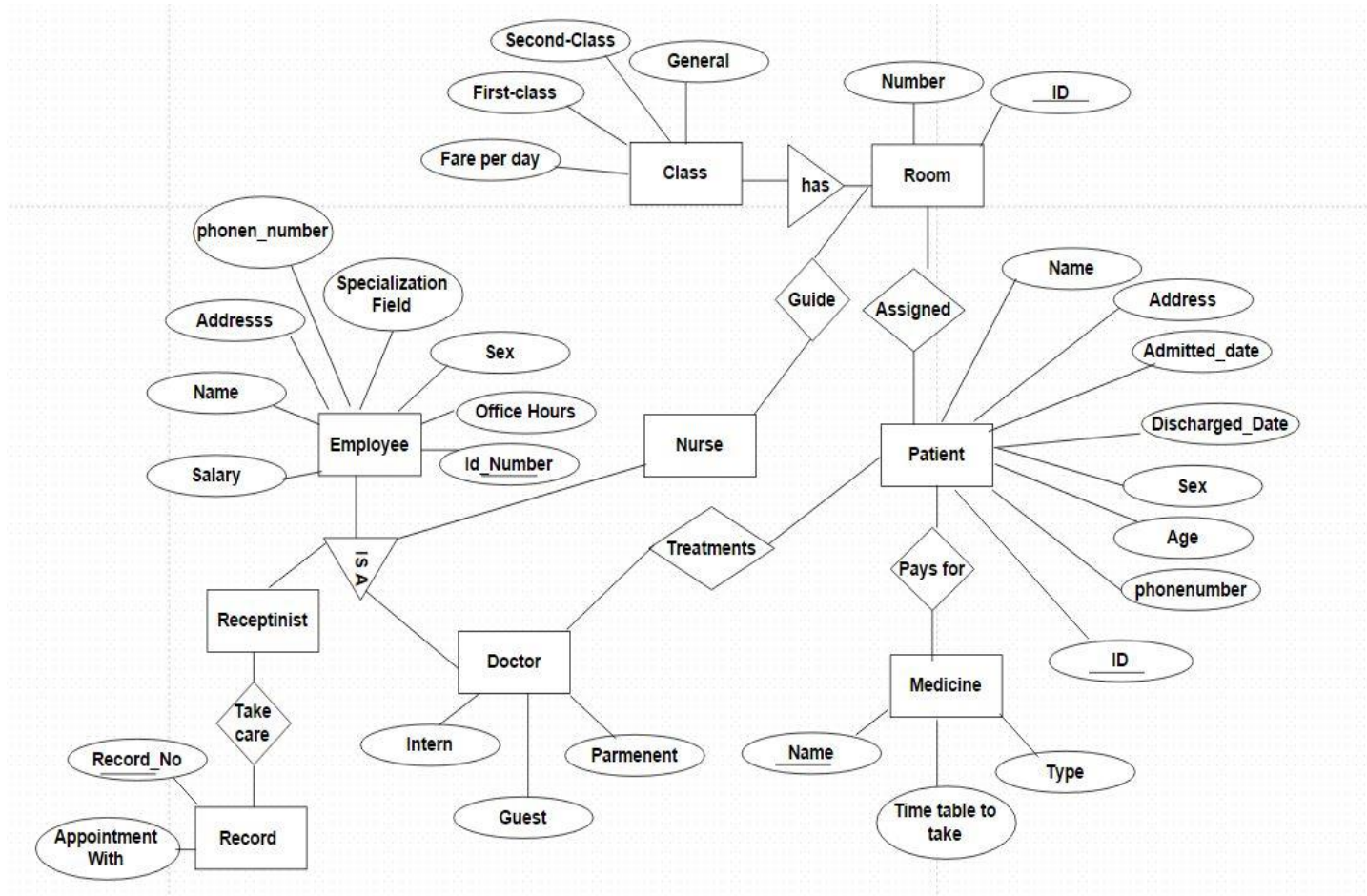


FIG: I. Hospital Management System

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## Relation Schema:

Employee (Salary, Name, Address,  
Phone\_number, Specilization\_Feild, Sex, Office  
\_Hours, Id Number)  
Doctor (Intern, Guest, permanent, Id Number)  
Guide (ID, Id Number)  
Medicine (Name, Time\_table\_to\_take, Type)  
Nurse (Name, Id Number)  
Patient (ID, PhoneNumber, Age, Sex,  
Discharged\_Date, Adimitted\_Date, Address,  
Name)  
Pays\_for (Id, Name)  
Receptnist (Name, Id Number)  
Record (Record No, Appointment With)  
Room (Number, ID)  
Room\_class (First\_Class, Second\_class,  
General, Fare\_per\_day)  
Take\_Care (Record No, Appointment\_With)  
Treatment (Id\_number, ID)

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> \d
List of relations
Schema | Name | Type | Owner
-----+-----+-----+-----
public | doctor | table | pramod.kc
public | employee | table | pramod.kc
public | guide | table | pramod.kc
public | medicine | table | pramod.kc
public | nurse | table | pramod.kc
public | patient | table | pramod.kc
public | pays_for | table | pramod.kc
public | receptnist | table | pramod.kc
public | record | table | pramod.kc
public | room | table | pramod.kc
public | room_class | table | pramod.kc
public | take_care | table | pramod.kc
public | treatment | table | pramod.kc
(13 rows)
```

```
pramod.kc=> select * from doctor;
intern | guest | parmanent | id_number
-----+-----+-----+-----
Dr.Raffel | DR.Jenesse | DR.KC | E7
| | | E21
| | | EF41
(3 rows)
```

```
pramod.kc=> select * from guide;
id | room_number
---+-----
2345 | N1
2346 | N2
2307 | N3
(3 rows)
```

```
pramod.kc=> select * from medicine;
name | time_to_take | type
-----+-----+-----
Paravitamin | 9 am | Energy
Gulcose | 12 pm | Energy
Paracetamol | 8 pm | fever
(3 rows)
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> select *from nurse;
intern | guest | parmanent | id_number
-----+-----+-----+-----
ronny  |  |  | N1
      | Bunny |  | N2
      |  | Honney | N3
(3 rows)

pramod.kc=> Select * from patient;
name | patient_id_number | address | phone_number | sex | admitted_date | discharged_date | age
-----+-----+-----+-----+-----+-----+-----+-----
Janny | p3 | NYC Joe | 879564356 | male | Feb 3 | Feb 26 | 21
Rabi | p1 | NYC Jonsebor | 879544356 | male | Jan 3 | Jan 26 | 29
James | p21 | NYC Wallstreet | 879504356 | male | Jan 31 | Feb 30 | 79
(3 rows)

pramod.kc=> Select * from pays-for;
ERROR: syntax error at or near "."
LINE 1: Select * from pays-for;
                        ^

pramod.kc=> Select * from pays_for;
name | patient_id_number
-----+-----
Paravitamin | p1
Glucose | p2
Paracetamol | p3
(3 rows)
```

```
pramod.kc=> select * from record;
record_no | appointment_with
-----+-----
E7 | DR.Raffel
E8 | DR.Janesses
E9 | DR.KC
(3 rows)

pramod.kc=> select * from room;
room_number
-----
9756
9654
9346
(3 rows)

pramod.kc=> select * from room_class;
general | first_class | second_class | room_number
-----+-----+-----+-----
(0 rows)
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> select * from take_care;
record_no | id_number
-----+-----
E7        | E21
E8        | E7
E9        | EF41
(3 rows)

pramod.kc=> Select * from treatment;
id_number | patient_id_number
-----+-----
E7        | p1
E21       | p3
EF41      | p2
(3 rows)
```

Find all the Employees' names.

**ANSWER:**

```
SELECT Name FROM Employee;
SELECT * FROM Employee;
```

```
pramod.kc=> select name from employee;
name
-----
Peter
Rambo
Adil
Dr.KC
Dr.Raffel
Dr.Jenesse
(6 rows)
```

```
pramod.kc=> |
```

```
pramod.kc=> select * from employee;
name | id_number | address | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+-----+-----+-----+-----+-----
Peter | 56784 | d Street | Male | 9 | Cardeologist | 40000 | 8704237
Rambo | 56794 | ad Street | Male | 10 | Phesotheraphist | 5000000 | 1704237
Adil | 16794 | ADCD Street | Female | 10 | Phesotheraphist | 500000 | 2704237
Dr.KC | EF41 | Walking loads Street | Male | 3 | Dentist | 700000 | 4704237
Dr.Raffel | E7 | Walking Street | Female | 10 | Physothirapist | 800000 | 5704237
Dr.Jenesse | E21 | Walking dead Street | Male | 5 | Cardiologist | 600000 | 3704237
(6 rows)

pramod.kc=> |
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Find salary of peter.

**ANSWER:**

```
SELECT Salary
FROM Employee
WHERE Name = 'Peter';
```

```
pramod.kc=> select salary from employee where name = 'Peter';
salary
-----
40000
(1 row)
```

Find all the Employee who are dentist.

**ANSWER:**

```
SELECT Name
FROM Employee
WHERE Specialization_Field = 'Dentist';
```

```
pramod.kc=> select name from employee where specialization_field = 'Dentist';
name
-----
Dr.KC
(1 row)

pramod.kc=> █
```

Find the employee who lives in d street.

**ANSWER:**

```
SELECT Name
FROM Employee
WHERE Address = 'd street';
```

```
pramod.kc=> select name from employee where address = 'd Street';
name
-----
Peter
(1 row)

pramod.kc=> █
```



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Find all the Employee who are Phesotheraphist.

**ANSWER:**

```
SELECT Name
FROM Employee
WHERE Specialization_Field = 'Phesotheraphist';
```

```
pramod.kc=> select name from employee where specialization_field = 'Phesotheraphist';
          name
-----
Rambo
Adil
(2 rows)

pramod.kc=> █
```

Find all the Employee whose office hours is less than 10.

**ANSWER:**

```
SELECT Name
FROM Employee
WHERE Office_hours < 10;
```

```
pramod.kc=> select name from employee where office_hours < 10;
          name
-----
Peter
Dr.KC
Dr.Jenesse
(3 rows)

pramod.kc=> █
```

Find all the Employee whose salary is less than 100000.

**ANSWER:**

```
SELECT Name
FROM Employee
WHERE Salary < 100000;
```

```
pramod.kc=> select name from employee where salary < 100000;
          name
-----
Peter
(1 row)
```



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Find the Employee whose id is EF41 and is Dentist.

**ANSWER:**

```
SELECT Name
FROM Employee WHERE id_number = 'EF41' and
Specialization_field = 'Dentist';
```

```
pramod.kc=> select name from employee where id_number = 'EF41'and specialization_field = 'Dentist';
      name
-----
Dr.KC
(1 row)

pramod.kc=> █
```

Find the Employee whose salary is above 50,000 and office hour is greater than 3.

**ANSWER:**

```
SELECT Name
FROM Employee
WHERE Salary > 500000 and office_Hours = 3;
```

```
pramod.kc=> select name from employee where salary > 500000 and office_hours > 3;
      name
-----
Rambo
Dr.Raffel
Dr.Jenesse
(3 rows)

pramod.kc=> █
```

Find the addresses, and names for those who are dentist.

**ANSWER:**

```
SELECT Name,Adress
FROM employee
WHERE Specialization field = 'Dentist'
```

```
pramod.kc=> select name, address from employee where specialization_field = 'Dentist';
      name      |      address
-----+-----
Dr.KC           | Walking loads Street
(1 row)
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Find the address of the doctor who gives treatment to the patient\_id\_number p1.

**ANSWER:**

```
SELECT Address
FROM Treatment,Employee
WHERE patient_idnumber = 'p1' and treatment.id-number=
employee.id_number;
```

```
pramod.kc=> select address from treatment, employee where patient_id_number = 'p1' and treatment.id_number = employee.id_number;
address
-----
Walking Street
(1 row)

pramod.kc=> |
```

Find the office\_hour of the doctor who gives treatment to the patient\_id\_number p2.

**ANSWER:**

```
SELECT Office_hours
FROM Treatment Employee WHERE patient_id_number
=Employee.id_number;
```

```
pramod.kc=> select office_hours from treatment, employee where patient_id_number = 'p2' and treatment.id_number = employee.id_number;
office_hours
-----
3
(1 row)
```

Find the name,office hour of the doctor who gives treatment to the patient\_id\_number p3.

**ANSWER:**

```
SELECT Office_hours,Name FROM Employee,Treatment WHRE
patient_id_number = 'p3'and treatment.id_number =
employee.id_number;
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> select office_hours,name from employee,treatment where patient_id_number = 'p3' and treatment.id_number = employee.id_number;
office_hours |      name
-----+-----
          5 | Dr.Jenesse
(1 row)
```

Find the name, office hour and Specialization of the doctor who gives treatment to the patient\_id\_number p2 who is the patient of cardio. Is the doctor chosen for this operation is good to take treatment?

**ANSWER:**

```
SELECT Office-hours,name, specification_Field FROM
Treatment where Patient_Id_Number = 'P2'and
Treatment.Id_Number = Employee.Id_Number;
```

```
pramod.kc=> select office_hours,name,specialization_field from employee,treatment where patient_id_number = 'p2' and treatment.id_number = employee.id_number;
office_hours |      name      | specialization_field
-----+-----+-----
          3 | Dr.KC          | Dentist
(1 row)
```

No the doctor is not good to do operation since he is dentist and the patient is having problem about cardio.

Find Name and address of those employee, whose salary is more than the average salary with the help of subquery ALL.

**ANSWER:**

```
SELECT Name,Address
FROM Employee WHERE Salary >= All(Select avg(salary) FROM
Employee);
```

```
pramod.kc=> Select name, address from employee where salary >= ALL (select avg(salary) from employee);
name      | address
-----+-----
Rambo     | ad Street
(1 row)
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Select name of the employee who are not guide with the use of NOT EXISTS subquery.

**ANSWER:**

```
SELECT Name
FROM Employee WHERE NOT EXIST (SELECT Id FROM guide
WHERE id = Id_Number);
```

```
pramod.kc=> Select name from employee where not EXISTS ( select id from guide where id = id_number);
name
-----
Peter
Rambo
Adil
Dr.KC
Dr.Raffel
Dr.Jenesse
(6 rows)

pramod.kc=> █
```

Select all the employee data except for those employees who have minimum salary?

**ANSWER:**

```
SELECT * FROM Employee
WHERE Salary > any(SELECT Salary FROM Employee);
```

```
pramod.kc=> SELECT * from employee where salary > any (select salary from employee);
name | id_number | address | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+-----+-----+-----+-----+-----
Rambo | 56794 | ad Street | Male | 10 | Phesotheraphist | 5000000 | 1704237
Adil | 16794 | ADCD Street | Female | 10 | Phesotheraphist | 500000 | 2704237
Dr.KC | EF41 | Walking loads Street | Male | 3 | Dentist | 700000 | 4704237
Dr.Raffel | E7 | Walking Street | Female | 10 | Physothirapist | 800000 | 5704237
Dr.Jenesse | E21 | Walking dead Street | Male | 5 | Cardiologist | 600000 | 3704237
(5 rows)
```

Find ID , office\_hours and Salary of those employee who are involved in treatments with the help of IN subquery.

**ANSWER:**

```
SELECT Name,Office_Hours,Salary FROM Employee WHERE
ID_Number In(SELECTTreatment.ID_Number FROM Treatment
WHERE Employee.id_Number = Treatment.id_number);
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> Select name, office hours, Salary from employee where id_number IN(Select treatment.id_number from treatment where employee.id_number=treatment.id_number);
      name      | office_hours | salary
-----+-----+-----
Dr.KC           |           3 | 700000
Dr.Raffel       |          10 | 800000
Dr.Jenesse      |           5 | 600000
(3 rows)

pramod.kc=> █
```

Find the name of the medicines which are EXISTS in pays for with the use of EXIST subquery.

**ANSWER:**

```
SELECT Medicine FROM Medicine WHERE Exists (SELECT Name
FROM Pays_For WHERE Pays_For.Name = Medicine.Name);
```

```
pramod.kc=> Select medicine.name from medicine where exists (select name from pays_for where pays_for.name = medicine.name);
      name
-----
Paravitamin
Glucose
Paracetamol
(3 rows)

pramod.kc=> █
```

Find hospital rooms which are not used in guiding purpose with the help of NOT IN subquery.

**ANSWER:**

```
SELECT ID FROM Guide WHERE ID NOT IN(SELECT Room WHERE
Room_Number = Guide.Room_Number);
```

```
pramod.kc=> Select id from guide where ID not IN(select room_number from room where room.room_number =guide.room_number);
      id
-----
2345
2346
2307
(3 rows)

pramod.kc=> █
```

Find all the IDS of the employees (with reputation allows) who are also taking care of patients with the help of UNION ALL Subquery.

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## ANSWER:

```
SELECT Id_Number FROM Employee UNION all SELECT  
Id_Number FROM Take_Care;
```

```
pramod.kc=> Select id_number from employee UNION all select id_number from take_care;  
id_number  
-----  
56784  
56794  
16794  
EF41  
E7  
E21  
E21  
E7  
EF41  
(9 rows)
```

Find the id of the Employees that are not taking care of patients with the help of EXCEPT sub Query.

## ANSWER:

```
SELECT Id_Number  
  
FROM Employee EXCEPT SELECT Id_number FROM Take_Care;
```

```
pramod.kc=> Select id_number from employee except select id_number from take_care;  
id_number  
-----  
16794  
56794  
56784  
(3 rows)
```

Find the common ids which are in Employee as well as taking care of person list.

## ANSWER:

```
SELECT Id-Number  
FROM Employee INTERSECT SELECT Id_Number FROM Take_Care;
```

```
pramod.kc=> Select id_number from employee intersect select id_number from take_care;  
id_number  
-----  
E7  
E21  
EF41  
(3 rows)  
pramod.kc=> █
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Select all medicines names which are in medicines as well as in pays for with the use of UNION ( without repetition of medicine name)

**ANSWER:**

```
SELECT Name From Pays_for UNION SELECT Name FROM  
Medicine;
```

```
pramod.kc=> select name from pays_for UNION select name from medicine;  
name  
-----  
Paravitamin  
Paracetamol  
Gulcose  
(3 rows)  
  
pramod.kc=> █
```

Find name of the all medicines since which are in medicines but not in pays for with the help of EXCEPT subquery.

**ANSWER:**

```
SELECT Name  
FROM Pays_for EXCEPT SELECT Name FROM Medicine;
```

```
pramod.kc=> select name from pays_for except select name from medicine;  
name  
-----  
(0 rows)  
  
pramod.kc=> █
```

Using CROSS JOIN, NATURAL JOIN, THETA JOIN (INNER JOIN)

Find the name and the record number of the employee using Inner Join.

**ANSWER:**

```
SELECT Employee.Name, Take_care.Record_No, Employee.Address  
FROM Employee  
Inner Join Take care  
ON Employee.Id_Number = Take_care.Id_Number;
```



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> select * from take_care;
record_no | id_number
-----+-----
E7        | E21
E8        | E7
E9        | EF41
(3 rows)

pramod.kc=> select * from employee;
name      | id_number | address      | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+-----+-----+-----+-----+-----
Peter     | 56784    | d Street    | Male | 9            | Cardeologist        | 40000 | 8704237
Rambo     | 56794    | ad Street   | Male | 10           | Phesotheraphist     | 5000000 | 1704237
Adil      | 16794    | ADCD Street | Female | 10          | Phesotheraphist     | 5000000 | 2704237
Dr.KC     | EF41     | Walking loads Street | Male | 3            | Dentist             | 700000 | 4704237
Dr.Raffel | E7       | Walking Street | Female | 10          | Physothirapist      | 800000 | 5704237
Dr.Jenesse | E21     | Walking dead Street | Male | 5            | Cardiologist        | 600000 | 3704237
(6 rows)

pramod.kc=> select employee.name, take_care.record_no,employee.address
from employee
Inner join take_care
ON employee.id_number = take_care.id_number;
name      | record_no | address
-----+-----+-----
Dr.Jenesse | E7        | Walking dead Street
Dr.Raffel  | E8        | Walking Street
Dr.KC      | E9        | Walking loads Street
(3 rows)
```

**Find the name,record\_no,address, and the specialization\_field of the doctors using Inner Join.**

**ANSWER:**

```
SELECT Employee.Name, Take_care.Record_No,
Employee.Address,Employee.specialization_field
FROM Employee
Inner Join Take care
ON Employee.Id Number = Take care.Id Number;
```

```
pramod.kc=> select employee.name, take_care.record_no,employee.address,employee.specialization_field
from employee
Inner join take_care
ON employee.id_number = take_care.id_number;
name      | record_no | address      | specialization_field
-----+-----+-----+-----
Dr.Jenesse | E7        | Walking dead Street | Cardiologist
Dr.Raffel  | E8        | Walking Street | Physothirapist
Dr.KC      | E9        | Walking loads Street | Dentist
(3 rows)
```

**Find the patient\_ID\_Number who is treated by the doctor with certain using Inner Join.**

**ANSWER:**

```
SELECT Treatment.Patient_ID_Number, Patient.Name
FROM Patient
Inner Join Treatment
ON Treatment.patient_Id_Nuumber =
Patient.patient_ID_Number;
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> select treatment.patient_id_number,patient.name
from patient
Inner join treatment
ON treatment.patient_id_number = patient.patient_id_number;
  patient_id_number |          name
-----+-----
p1                  | Rabi
p3                  | Janny
(2 rows)

pramod.kc=> █
```

Find the patient Discharge date who was assign to take the certain medicine using Inner Join.

**ANSWER:**

```
SELECT Patient.patient_ID_Number, pays_for.Name,
Patient.Dischargedd_date
FROM Patient
INNER JOIN Pays_for
ON Pays_for.Patient_ID_Number = Patient.patient_ID_Nmber;
```

```
pramod.kc=> select patient.patient_id_number,pays_for.name, patient.discharged_date
from patient
Inner join pays_for
On pays_for.patient_id_number = patient.patient_id_number;
  patient_id_number |    name    | discharged_date
-----+-----+-----
p1                  | Paravitamin | Jan 26
p3                  | Paracetamol | Feb 26
(2 rows)

pramod.kc=> █
```

Find the age, name and id number of patient who is treated by the doctor with certain doctor Id number using Inner Join.

**ANSWER:**

```
SELECT
patient.name,patient.patient_ID_Number,patient.age,treatmen
t.id_Number
FROM Patient
INNER JOIN Treatment
ON Treatment.patient_ID_Number = Patient.patient_id_Number
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> select patient.name, patient.patient_id_number,patient.age,treatment.id_Number
from patient
Inner join treatment
On treatment.patient_id_number = patient.patient_id number;
      name      | patient_id_number | age | id_number
-----+-----+-----+-----
Rabi             | p1                | 29  | E7
Janny            | p3                | 21  | E21
(2 rows)
```

List all the doctor who are employee using upper Join.

**Answer:**

```
SELECT Employee.Name, Doctor.Id_Number
FROM Employee
LEFT JOIN Doctor
ON Employee.ID_Number = Doctor.ID_Number
Order BY Employee.ID_Number;
```

```
pramod.kc=> SELECT Employee.name,Doctor.id_number
FROM Employee
LEFT Join Doctor
ON Employee.id_number = Doctor.id_number
Order BY Employee.id_number;
      name      | id_number
-----+-----
Adil
Peter
Rambo
Dr.Jenesse
Dr.Raffel
Dr.KC
(6 rows)

pramod.kc=> █
```

Find the name of the patient and the name of the medicine they are taking using right join.

**ANSWER:**

```
SELECT pays_for.name,patient.name
FROM pays_for
RIGHT JOIN patient
ON Pays_For.patient_Id_Number = Patient.patient_ID_Number
Order by patient.name;
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> Select pays_for.name,patient.name
FROM Pays_for
RIGHT Join patient
ON pays_for.patient_id_number = patient.patient_id_Number
Order by patient.name;
  name      |      name
-----+-----
Paracetamol | James
Paravitamin | Janny
(3 rows)

pramod.kc=> █
```

SELECT all Doctor and all patients who has taken treatments from the doctors using Outer Join.

**ANSWER:**

```
SELECT Doctor.parmanent,Treatment.Patient_ID_Number
FROM Doctor
FULL OUTER JOIN Treatment
ON Doctor.Id_Number = Treatment.id_Number
ORDER BY Doctor.parmanent;
```

```
pramod.kc=> SELECT doctor.parmanent, treatment.patient_id_number
FROM doctor
Full Outer Join treatment
On doctor.id_number = treatment.id_number
Order By doctor.parmanent;
 parmanent | patient_id_number
-----+-----
DR.KC      | p1
           | p3
           | p2
(6 rows)

pramod.kc=> █
```

Find the id\_number and the Recod\_number using Outer Join.

**ANSWER:**

```
SELLECT Take_Care.Id_Number,Record_No
FROM Take_Care
Full Outer Join Record
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

On Take\_Care.Record\_No = Record.Record\_No;

```
pramod.kc=> SELECT take_care.id_number, record.record_no
pramod.kc-> FROM take_care
pramod.kc-> FULL Outer Join Record
pramod.kc-> On take_care.record_no = record.Record_no
pramod.kc-> ;
  id_number | record_no
-----+-----
  E21      | E7
  E7       | E8
  EF41     | E9
(3 rows)
```

Find the maximum salary by the each sex using having, group by and aggregate function.

ANSWER:

```
SELECT Sex, MAX (Salary)
FROM Employee
Group By Sex MAX(office_hours) = 10;
```

```
pramod.kc=> SELECT Sex, max (Salary)
FROM Employee
Group By Sex having max(office_hours) = 10;
  sex      | max
-----+-----
  Female   | 8000000
  Male     | 5000000
(2 rows)
```

Find the MIN salary and the Sex whose office hours is equal to 10.

Answer:

```
SELECT Sex, MIN (Salary)
FROM Employee
Group by Sex
Having MIN(Office Hours) = 10;
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> SELECT Sex, min (Salary)
FROM Employee
Group By Sex having min(office_hours) = 10;
  sex      | min
-----+-----
  Female   | 500000
(1 row)
```

Grouping by SEX, Find the total working hours of all male and female along with their total sum of salary.

**ANSWER:**

```
SELECT SEX , SUM(Office_Hours) AS perday, SUM(Salary) AS
Total_Gender_salary
FROM Employee
GROUP BY Sex having MIN(Office_Hours) >1;
```

```
pramod.kc=> SELECT Sex,sum(office_hours) as perDay, SUM (Salary) as Total_Gender_salary
FROM Employee
Group By Sex having min(office_hours) > 1;
  sex      | perday | total_gender_salary
-----+-----+-----
  Female   | 20     | 13000000
  Male     | 27     | 63400000
(2 rows)

pramod.kc=> █
```

Find the average salary of the sex who has minimum working hours equal to 10.

**ANSWER:**

```
SELECT SEX, AVG(Salary)
FROM Employee
GROUP BY Sex having MIN(Office_Hours) = 10;
```



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> SELECT Sex, AVG (Salary)
FROM Employee
Group By Sex having min(office_hours) = 10;
  sex      |      avg
-----+-----
  Female   | 650000.000000000000
(1 row)

pramod.kc=> █
```

Find the Number of employee group by sex having Minimum office hours equal to 10

**ANSWER:**

```
SELECT Sex, Count (Salary)
FROM Employee
Group By Sex having MIN(Office_Hours) =10;
```

```
pramod.kc=> SELECT Sex, Count (Salary)
FROM Employee
Group By Sex having min(office_hours) = 10;
  sex      | count
-----+-----
  Female   |      2
(1 row)

pramod.kc=> █
```

Insert a value into the table Employee.

**Answer:**

```
INSERT INTO
Employee (Name, Id_Number, Address, Sex, Office_Hours, Specializa
tion_Field, Salary, Phone_Number)
```

```
Values ('Randy', '54328', 'DangoRando
Street', 'male', '17', 'physicyan', '10000000', '8702106');
```

```
pramod.kc=> Select * from Employee;
  name      | id_number | address      | sex  | office_hours | specialization_field | salary | phone_number
-----+-----+-----+-----+-----+-----+-----+-----
  Peter     | 56784    | d Street    | Male | 9            | Cardeologist        | 40000  | 8704237
  Rambo     | 56794    | ad Street   | Male | 10           | Phesotheraphist     | 5000000 | 1704237
  Adil      | 16794    | ADCD Street | Female | 10          | Phesotheraphist     | 500000  | 2704237
  Dr.KC     | EF41     | Walking loads Street | Male | 3            | Dentist              | 700000  | 4704237
  Dr.Raffel | E7       | Walking Street | Female | 10          | Physothirapist      | 800000  | 5704237
  Dr.Jenesse | E21     | Walking dead Street | Male | 5            | Cardiologist         | 600000  | 3704237
(6 rows)
```



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
pramod.kc=> Insert Into Employee(name,id_number,address,sex,office_hours,specialization_field,salary,phone_number)
Values('Randy','54328','DangoRando Street','male','17','Physician','100000000','8702106');
INSERT 0 1
```

```
pramod.kc=> select * from Employee;
```

name	id_number	address	sex	office_hours	specialization_field	salary	phone_number
Peter	56784	d Street	Male	9	Cardeologist	40000	8704237
Rambo	56794	ad Street	Male	10	Phesotheraphist	5000000	1704237
Adil	16794	ADCD Street	Female	10	Phesotheraphist	500000	2704237
Dr.KC	EF41	Walking loads Street	Male	3	Dentist	700000	4704237
Dr.Raffel	E7	Walking Street	Female	10	Physothirapist	800000	5704237
Dr.Jenesse	E21	Walking dead Street	Male	5	Cardiologist	600000	3704237
Randy	54328	DangoRando Street	male	17	Physician	100000000	8702106

(7 rows)

```
pramod.kc=>
```

Insert into a table from subquery

```
pramod.kc=> select * from treatment;
```

id_number	patient_id_number
E7	p1
E21	p3
EF41	p2

(3 rows)

```
pramod.kc=> select * from patient;
```

name	patient_id_number	address	phone_number	sex	admitted_date	discharged_date	age
Janny	p3	NYC Joe	879564356	male	Feb 3	Feb 26	21
Rabi	p1	NYC Jonsebor	879544356	male	Jan 3	Jan 26	29
James	p21	NYC Wallstreet	879504356	male	Jan 31	Feb 30	79

(3 rows)

```
pramod.kc=> insert into treatment(id_number, patient_id_number)
pramod.kc-> VALUES('E18',(SELECT patient_id_number FROM patient WHERE name = 'Janny'));
INSERT 0 1
pramod.kc=> select * from treatment;
```

id_number	patient_id_number
E7	p1
E21	p3
EF41	p2
E18	p3

(4 rows)

```
pramod.kc=>
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## DELETE PRAMOD

### DELETE

```
pramod.kc=> select * from employee;
      name | id_number | address | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+----+-----+-----+-----+-----
Peter      | 56784     | d Street | Male | 9             | Cardeologist         | 40000  | 8704237
Rambo      | 56794     | ad Street | Male | 10            | Phesotheraphist      | 5000000 | 1704237
Adil       | 16794     | ADCD Street | Female | 10           | Phesotheraphist      | 500000  | 2704237
Dr.Raffel  | E7        | Walking Street | Female | 10           | Physothirapist       | 800000  | 5704237
Dr.Jenesse | E21       | Walking dead Street | Male | 5             | Cardiologist          | 600000  | 3704237
Randy      | 54328     | DangoRando Street | male | 17           | Physicyan             | 100000000 | 8702106
(6 rows)

pramod.kc=> DELETE FROM Employee
WHERE Address = 'd Street';
DELETE 1
pramod.kc=> select * from employee;
      name | id_number | address | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+----+-----+-----+-----+-----
Rambo      | 56794     | ad Street | Male | 10            | Phesotheraphist      | 5000000 | 1704237
Adil       | 16794     | ADCD Street | Female | 10           | Phesotheraphist      | 500000  | 2704237
Dr.Raffel  | E7        | Walking Street | Female | 10           | Physothirapist       | 800000  | 5704237
Dr.Jenesse | E21       | Walking dead Street | Male | 5             | Cardiologist          | 600000  | 3704237
Randy      | 54328     | DangoRando Street | male | 17           | Physicyan             | 100000000 | 8702106
(5 rows)
```

## UPDATE1

```
pramod.kc=> select * from employee;
      name | id_number | address | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+----+-----+-----+-----+-----
Rambo      | 56794     | ad Street | Male | 10            | Phesotheraphist      | 5000000 | 1704237
Adil       | 16794     | ADCD Street | Female | 10           | Phesotheraphist      | 500000  | 2704237
Dr.Raffel  | E7        | Walking Street | Female | 10           | Physothirapist       | 800000  | 5704237
Dr.Jenesse | E21       | Walking dead Street | Male | 5             | Cardiologist          | 600000  | 3704237
Randy      | 54328     | DangoRando Street | male | 17           | Physicyan             | 100000000 | 8702106
(5 rows)

pramod.kc=> UPDATE Employee SET name = 'Jeff' where name = 'Adil';
UPDATE 1
pramod.kc=> select * from employee ;
      name | id_number | address | sex | office_hours | specialization_field | salary | phone_number
-----+-----+-----+----+-----+-----+-----+-----
Rambo      | 56794     | ad Street | Male | 10            | Phesotheraphist      | 5000000 | 1704237
Dr.Raffel  | E7        | Walking Street | Female | 10           | Physothirapist       | 800000  | 5704237
Dr.Jenesse | E21       | Walking dead Street | Male | 5             | Cardiologist          | 600000  | 3704237
Randy      | 54328     | DangoRando Street | male | 17           | Physicyan             | 100000000 | 8702106
Jeff       | 16794     | ADCD Street | Female | 10           | Phesotheraphist      | 500000  | 2704237
(5 rows)

pramod.kc=> █
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## VIEW

```
pramod.kc=> select * from employee ;
```

name	id_number	address	sex	office_hours	specialization_field	salary	phone_number
Rambo	56794	ad Street	Male	10	Phesotheraphist	5000000	1704237
Dr.Raffel	E7	Walking Street	Female	10	Physothirapist	800000	5704237
Dr.Jenesse	E21	Walking dead Street	Male	5	Cardiologist	600000	3704237
Randy	54328	DangoRando Street	male	17	Physicyan	100000000	8702106
Jeff	16794	ADCD Street	Female	10	Phesotheraphist	500000	2704237

(5 rows)

```
pramod.kc=> CREATE View show_Employee AS SELECT name, address, office_hours, specialization_field, phone_number
FROM Employee;
CREATE VIEW
pramod.kc=> select * from show_employee;
```

name	address	office_hours	specialization_field	phone_number
Rambo	ad Street	10	Phesotheraphist	1704237
Dr.Raffel	Walking Street	10	Physothirapist	5704237
Dr.Jenesse	Walking dead Street	5	Cardiologist	3704237
Randy	DangoRando Street	17	Physicyan	8702106
Jeff	ADCD Street	10	Phesotheraphist	2704237

(5 rows)

```
pramod.kc=> █
```

## Trigger;

```
CREATE TABLE Employee(First_Name varchar(20), Last_Name
Varchar(20),ID_Number Number);
CREATE TABLE Employee_Duplicate(First_Name varchar(20),
Last_Name Varchar(20),ID_Number number);

CREATE or REPLACE TRIGGER asty AFTER INSERT ON Employee
FOR EACH ROW
DECLARE
BEGIN
INSERT INTO Employee_Duplicate VALUES (:NEW.First_Name,
:NEW.Last_Name, :NEW.ID_Number);
END;
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
SELECT * from Employee;  
INSERT INTO EMPLOYEE VALUES('PRAMOD','KC', 870);
```

```
SQL> SELECT * FROM EMPLOYEE;  
  
no rows selected  
(70)
```

```
SQL> CREATE or REPLACE TRIGGER asty AFTER INSERT ON Employee  
SQL> EACH ROW  
SQL> RE  
SQL> 3 4 5 INSERT INTO Employee_Duplicate VALUES(:NEW.First_Name, :NEW.Last_Name,:NEW.ID_Number);  
SQL> 6  
SQL> .  
SQL> run  
SQL> CREATE or REPLACE TRIGGER asty AFTER INSERT ON Employee  
SQL> FOR EACH ROW  
SQL> DECLARE  
SQL> BEGIN  
SQL> INSERT INTO Employee_Duplicate VALUES(:NEW.First_Name, :NEW.Last_Name,:NEW.ID_Number);  
SQL> END;  
SQL>  
SQL> er created.  
SQL>  
SQL> INSERT INTO EMPLOYEE VALUES ('PRAMOD', 'KC',870);  
SQL> T INTO EMPLOYEE VALUES ('PRAMOD', 'KC'  
SQL>  
SQL> INSERT INTO EMPLOYEE VALUES ('PrINSERT ..." - rest of line ignored.  
SQL> 734: unknown command beginning "  
SQL>
```

```
SQL> INSERT INTO EMPLOYEE VALUES('PRAMOD','KC', 870);  
  
1 row created.
```

```
SQL> Select * from Employee;
```

FIRST_NAME	LAST_NAME	ID_NUMBER
PRAMOD	KC	870

```
SQL> Select * from Employee_Duplicate;  
Select * from Employee_Duplicate  
*
```

```
ERROR at line 1:  
ORA-00911: invalid character
```

```
SQL> Select * from Employee_Duplicate;
```

FIRST_NAME	LAST_NAME	ID_NUMBER
PRAMOD	KC	870

```
SQL> █
```



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## Psm

```
CREATE OR REPLACE PROCEDURE insert_Employee(a IN Varchar, b
IN varchar, c IN Number)
AS
BEGIN
INSERT INTO Employee VALUES(a,b,c);
dbms_output.put_line('Yahooooo Data added.');
```

/

```
execute insert_Employee('PRAMOD', 'KC', 870);
```

```
SQL> CREATE OR REPLACE PROCEDURE insert_Employee(a IN Varchar, b IN varchar, c IN Number)
AS
BEGIN
  2  3  4  INSERT INTO Employee VALUES(a,b,c);
  5  dbms_output.put_line('Yahooooo Data added.');
```

EN 6 D;

```
  7  /
```

Procedure created.

```
SQL> execute insert_Employee('PRAMOD', 'KC', 870);
```

PL/SQL procedure successfully completed.

```
SQL> Select * from Employee;
```

FIRST_NAME	LAST_NAME	ID_NUMBER
PRAMOD	KC	870
PRAMOD	KC	870

```
SQL> █
```

## Primary key.

```
pramod.kc=> \d employee1;
```

Column	Type	Modifiers
firstname	character varying(20)	
lastname	character varying(30)	
id	integer	not null

Indexes:

```
"employee1_pkey" PRIMARY KEY, btree (id)
```

```
pramod.kc=> █
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## Foreign key

```
pramod.kc=> CREATE table Employee2(FirstName Varchar(20), LastName Varchar(30),EYP2_ID Int,Foreign Key (Eyp2_id) references Employee1(id));
CREATE TABLE
pramod.kc=> \employee2;
Invalid command \employee2;. Try \? for help.
pramod.kc=> \d employee2;
Table "public.employee2"
  Column      |      Type      | Modifiers
-----+-----+-----
firstname     | character varying(20) |
lastname      | character varying(30) |
eyp2_id       | integer          |
Foreign-key constraints:
    "employee2_eyp2_id_fkey" FOREIGN KEY (eyp2_id) REFERENCES employee1(id)
pramod.kc=> █
```

## Check

```
pramod.kc=> \d employee3;
Table "public.employee3"
  Column      |      Type      | Modifiers
-----+-----+-----
firstname     | character varying(20) |
lastname      | character varying(30) |
id            | integer          |
phone         | character varying(20) |
Check constraints:
    "employee3_phone_check" CHECK (phone::text ~~ '977%'::text)
pramod.kc=> █
```

## Constraints

```
pramod.kc=> \d employee3;
Table "public.employee3"
  Column      |      Type      | Modifiers
-----+-----+-----
firstname     | character varying(20) |
lastname      | character varying(30) |
id            | integer          |
phone         | character varying(20) |
Check constraints:
    "employee3_phone_check" CHECK (phone::text ~~ '977%'::text)
    "id" CHECK (id > 0)
pramod.kc=> █
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## Normalization:

**Database normalization** is the process of organizing the **attributes** and **tables** of a **relational database** to minimize **data\_redundancy**.

Normalization involves refactoring a table into less redundant (and smaller) tables but without losing information; defining **foreign keys** in the old table referencing the **primary keys** of the new ones. The objective is to isolate data so that additions, deletions, and modifications of an attribute can be made in just one table and then propagated through the rest of the database using the defined foreign keys.

SOURCE: [http://en.wikipedia.org/wiki/Database\\_normalization](http://en.wikipedia.org/wiki/Database_normalization)

On “patient” table we have relation R(Name,Phonenumber,Address)

Functional Dependency Name to Address

To find super keys and keys, first we have to find closures:

$Name^+ = \{Name, Address\}$

$Phonenumber^+ = \{phoneNumber\}$

$Address^+ = \{Address\}$

$NamePhoneNumber^+ = \{Name, Address, PhoneNumber\}$  **IS A SUPERKEY and KEY**

$NameAddress^+ = \{Name, Address\}$

$PhoneNumberAddress^+ = \{Phonenumber, Address\}$

Super Key is NamePhoneNumber



# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

Key is NamePhonenumber

Checking the functional dependency is in BCN(Boyce-Codd Normal) and 3NF

## **FD Name to Address**

Here Left hand side “name” is not a super key. So it violates the BCNF

## **CHECKING 3NF**

FD Name to Address

Here left hand side of FD “name” is not a super key and right hand side “Address” is not a prime. Hence, it violates the 3NF.

Decompose the relation according to the BCF decomposition

Name to Address

$X = \text{name};$

$R1 = X^+ = \{\text{Name}, \text{Address}\};$

$R2 = (R - X^+) \cup X = \{\text{Name}, \text{Address}, \text{PhoneNumber}\}$

Final decomposition relations are  $R1\{\text{name}, \text{Address}\}$ ,  $R2\{\text{Name}, \text{Address}, \text{PhoneNumber}\}$

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

## PHP programming code with SQL:

Connection String:

```
<?php
$hostname = "localhost";    //host name
$dbname = "pramod.kc";      //db name
$username = "pramod.kc";    //user name
$password = "50437964";     //user password
Try {
    $conn = new PDO(
        "pgsql:host=$hostname; dbname = $dbname",
        $username, $password);
}
catch (PDOException $e) {
    //echo $e->getMessage();
    echo "Database connection failed!";
    exit(1);
}
?>
```

```
<?php
```

## Fetching Data and connecting to SQL

```
<?php

$sql = "select * from pramod_kc";

$statement = $conn->prepare($sql, array(PDO::ATTR_CURSOR =>
PDO::CURSOR_FWDONLY));
$statement->execute();
?>
```

```
<div class="container">
    <div class="header" >
        
        <h1>PRAMOD KC</h1>
    </div>
```

```
<h2> <?php echo $sql; ?> ;</h1>
```

```
<table> <!-- table starts -->
```

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)

```
<tr>
    <th> Department </th>
    <th> Course number </th>
    <th> Title </th>
    <th> Credit hours </th>
</tr>

<?php
while($row = $statement->fetch(PDO::FETCH_ASSOC))
{
echo '<tr><td>'.$row['department'].'</td>';
echo '<td>'.$row['course_number'].'</td>';
echo '<td>'.$row['title'].'</td>';
echo '<td>'.$row['credit_hours'].'</td></tr>';
}
?>

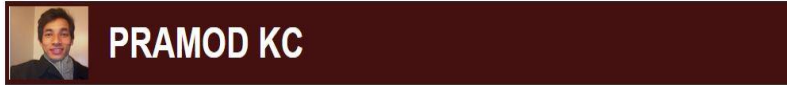
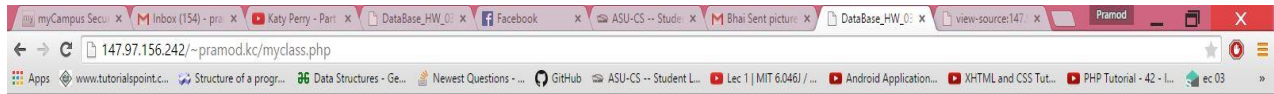
</table> <!-- table ends -->
</div>

</div>
```

SCREENSHOT OF THE WEBPAGE:

# HOSPITAL MANAGEMENT SYSTEM

PRAMOD KC  
(50437964)



**select \* from pramod\_kc ;**

Department	Course number	Title	Credit hours
CS	CS6823	BioInformatics	3
CS	CS5313	Computer_Network	3
CS	CS5543	Database_System	3

# THANKS