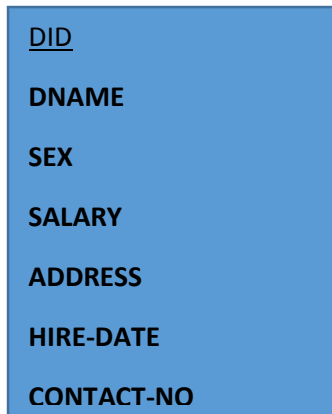
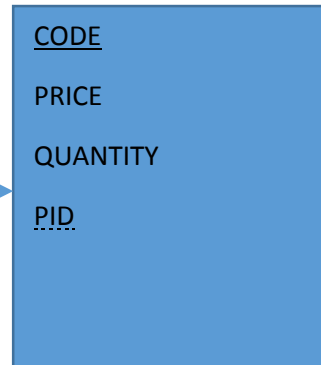


THE SCHEMA DIAGRAM

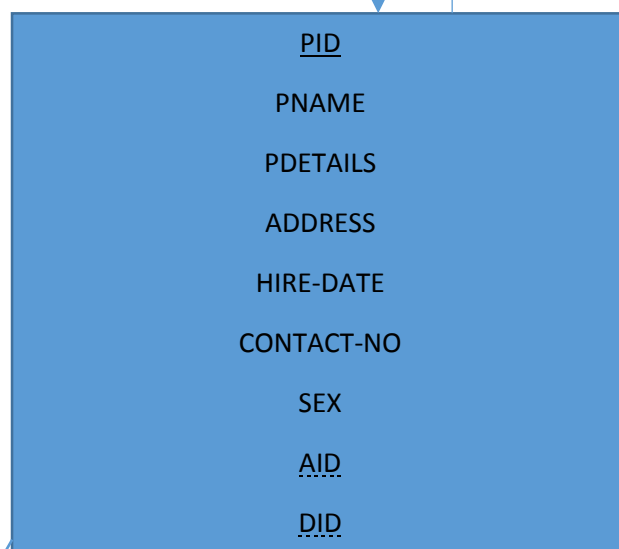
DOCTOR



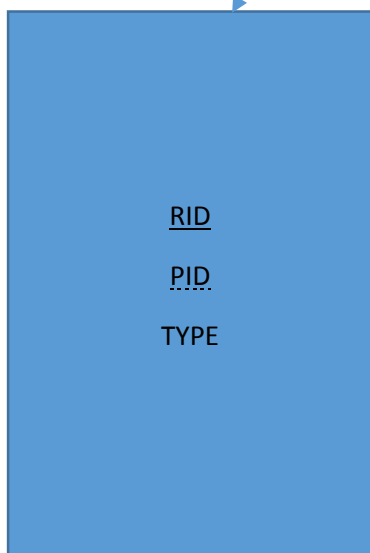
MEDICINE



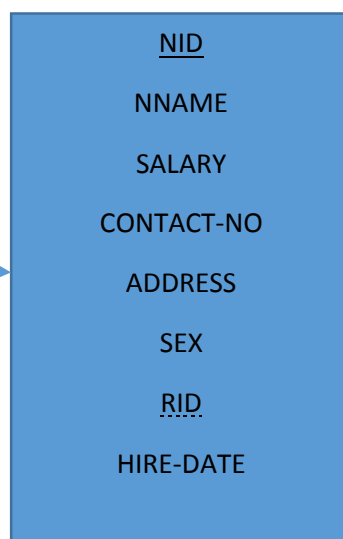
PATIENT



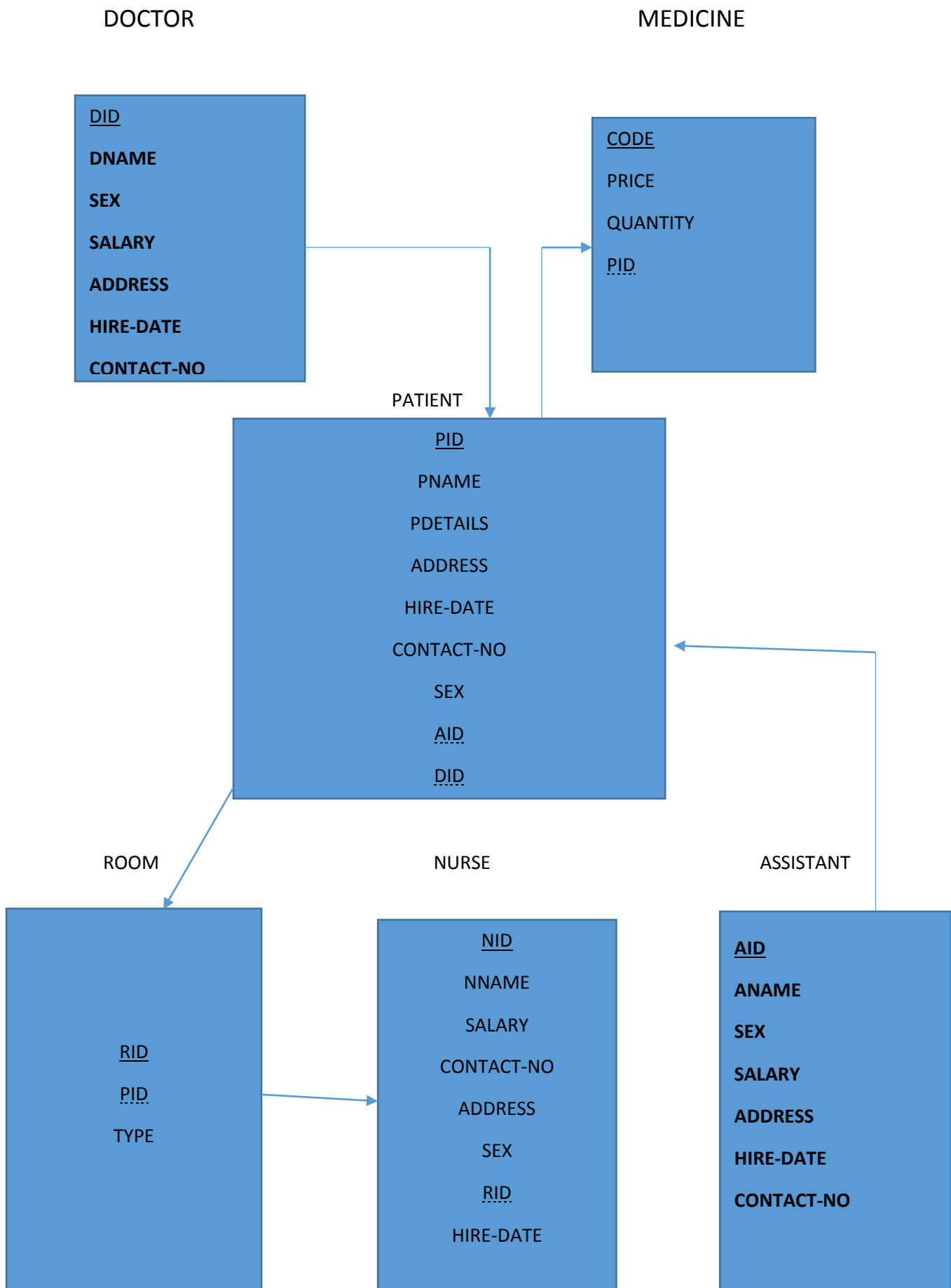
ROOM

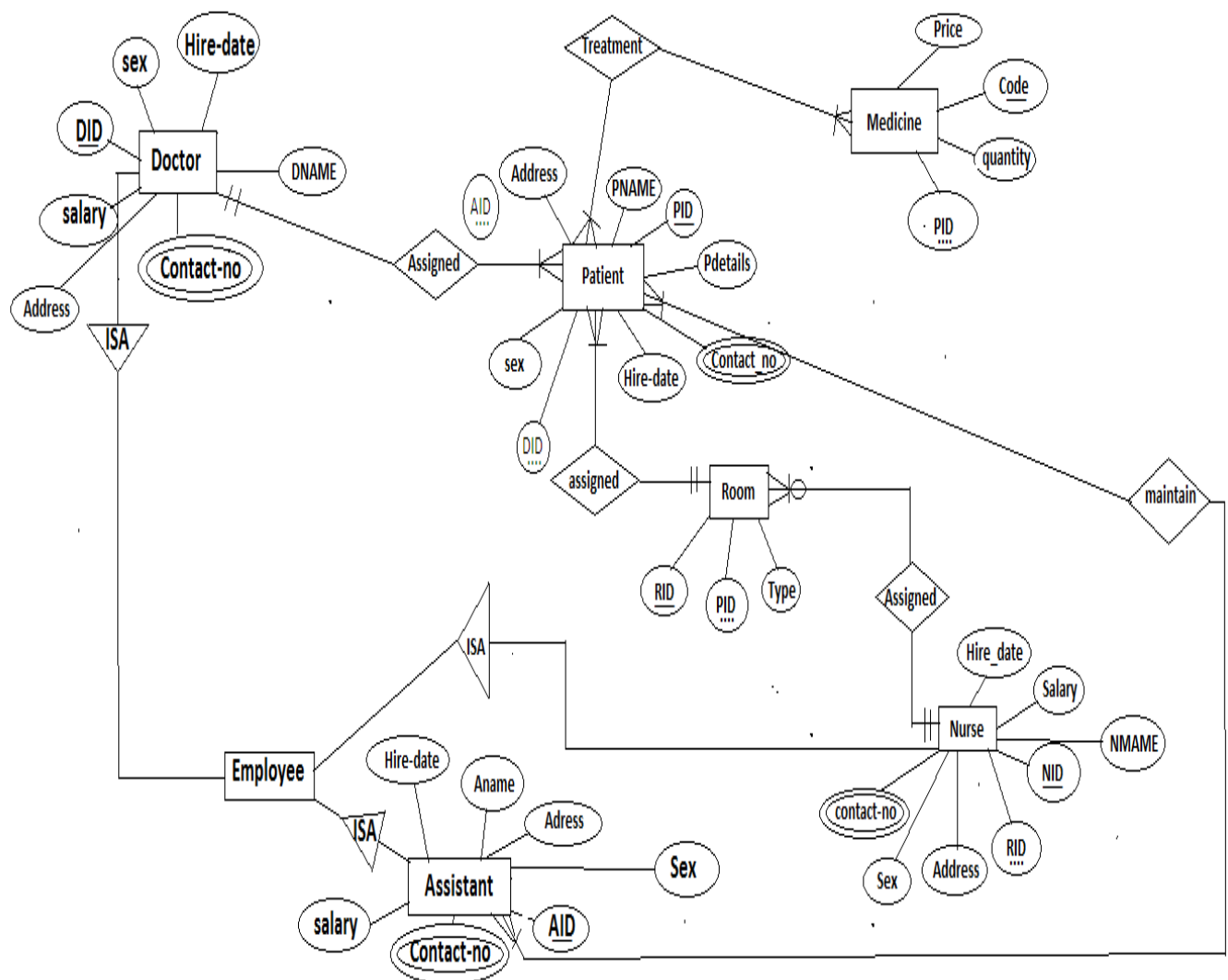


NURSE



ASSISTANT





HOSPITAL MANAGEMENT SYSTEM

SQL

```
1.CREATE TABLE Doctor(DID NUMBER,DNAME VARCHAR2(23),Hire_date
VARCHAR2(32),Address VARCHAR2(32),Sex VARCHAR2(23),Contuct_no
VARCHAR2(34),Sal NUMBER,CONSTRAINT Doctor_DID_pk PRIMARY KEY(DID));
2.CREATE TABLE Contuct_no(CID NUMBER,DID NUMBER,Contuct_no
VARCHAR2(34),CONSTRAINT Contuct_no_CID_pk PRIMARY KEY(CID),
CONSTRAINT Contuct_no_DID_fk FOREIGN KEY(DID) REFERENCES
Doctor (DID));

3.CREATE TABLE Assistant(AID NUMBER,ANAME VARCHAR2(23),Hire_date
VARCHAR2(32),Address VARCHAR2(32),Sex VARCHAR2(23),Contuct_no
VARCHAR2(34),Sal NUMBER,CONSTRAINT Assistant_AID_pk PRIMARY
KEY(AID));

4.CREATE TABLE Contuct_no1(CID NUMBER,AID NUMBER,Contuct_no
VARCHAR2(34),CONSTRAINT Contuct_no1_CID_pk PRIMARY KEY(CID),
CONSTRAINT Contuct_no1_AID_fk FOREIGN KEY(AID) REFERENCES
Assistant (AID));
5.CREATE TABLE Patient(PID NUMBER,PNAME VARCHAR2(23),Pdetails
VARCHAR2(32),Hire_date VARCHAR2(32),Address VARCHAR2(32),Sex
VARCHAR2(23),Contuct_no VARCHAR2(34),DID NUMBER,AID
NUMBER,CONSTRAINT Patient_PID_pk PRIMARY KEY(PID),CONSTRAINT
Patient_DID_fk FOREIGN KEY(DID) REFERENCES Doctor (DID),CONSTRAINT
Patient_AID_fk FOREIGN KEY(AID) REFERENCES Assistant (AID));
6.CREATE TABLE Contuct_no2(CID NUMBER,PID NUMBER,Contuct_no
VARCHAR2(34),CONSTRAINT Contuct2_no_CID_pk PRIMARY KEY(CID),
CONSTRAINT Contuct_no2_PID_fk FOREIGN KEY(PID) REFERENCES
Patient (PID));
7.CREATE TABLE Medicine(Code NUMBER,Price NUMBER,Quantity
VARCHAR2(31),PID NUMBER,CONSTRAINT Medicine_Code_pk PRIMARY
KEY(Code),
CONSTRAINT Medicine_PID_fk FOREIGN KEY(PID) REFERENCES Patient
(PID));
8.CREATE TABLE Room(RID NUMBER,PID NUMBER,Type
VARCHAR2(34),CONSTRAINT Room_RID_pk PRIMARY KEY(RID),
CONSTRAINT Room_PID_fk FOREIGN KEY(PID) REFERENCES Patient
(PID));
9.CREATE TABLE Nurse(NID NUMBER,NNAME VARCHAR2(23),Hire_date
VARCHAR2(32),Address VARCHAR2(32),Sex VARCHAR2(23),Contuct_no
VARCHAR2(34),Sal NUMBER,RID NUMBER,CONSTRAINT Nurse_NID_pk PRIMARY
KEY(NID),CONSTRAINT Nurse_RID_fk FOREIGN KEY(RID) REFERENCES Room
(RID));
10.CREATE TABLE Contuct_no3(CID NUMBER,NID NUMBER,Contuct_no
VARCHAR2(34),CONSTRAINT Contuct_no3_CID_pk PRIMARY KEY(CID),
CONSTRAINT Contuct_no3_RID_fk FOREIGN KEY(NID) REFERENCES
Nurse (NID));
```

```

insert into Doctor VALUES(1401,'Amdadol','18-FEB-
98','Altabnagor','Male','018-2405',45000);
insert into Doctor VALUES(1402,'Latifa','19-DEC-
98','Rangpur','Female','015-2305',45000);
insert into Doctor VALUES(1403,'Hasim','15-SEP-
98','Bogra','Male','019-2305',40000);
insert into Doctor VALUES(1405,'Rahet','17-MAR-
99','Rajshahi','Male','018-2395',35000);
insert into Doctor VALUES(1406,'Nahid','13-MAR-
99','Khulna','Male','015-2396',33000);
insert into Doctor VALUES(1407,'Nahida','13-MAY-
99','Raipur','Female','016-2396',42000);

```

```

insert into Contuct_no VALUES(1501,1401,'018-2405');
insert into Contuct_no VALUES(1503,1402,'015-2305');
insert into Contuct_no VALUES(1504,1403,'019-2305');
insert into Contuct_no VALUES(1505,1405,'018-2395');
insert into Contuct_no VALUES(1506,1406,'015-2396');
insert into Contuct_no VALUES(1507,1407,'016-2396');

```

```

insert into Assistant VALUES(1901,'Roman','18-FEB-
98','Altabnagor','Male','018-2001',18000);
insert into Assistant VALUES(1902,'Hasna','19-DEC-
98','Rangpur','Female','016-2005',20000);
insert into Assistant VALUES(1903,'Haris','15-SEP-
98','Bogra','Male','019-9905',19000);
insert into Assistant VALUES(1904,'Haris','17-SEP-
98','Bogra','Male','019-9905',19000);
insert into Assistant VALUES(1905,'Ratul','17-MAR-
99','Rajshahi','Male','018-2110',22000);
insert into Assistant VALUES(1906,'Nahir','13-MAR-
99','Khulna','Male','015-2106',17000);
insert into Assistant VALUES(1907,'Nisi','13-MAY-
99','Raipur','Female','019-2207',27000);

```

```

insert into Contuct_no1 VALUES(2001,1901,'018-2001');
insert into Contuct_no1 VALUES(2002,1902,'016-2005');
insert into Contuct_no1 VALUES(2003,1903,'019-9905');
insert into Contuct_no1 VALUES(2004,1905,'018-2110');
insert into Contuct_no1 VALUES(2005,1906,'015-2106');
insert into Contuct_no1 VALUES(2006,1907,'019-2207');

```

```

insert into Patient VALUES(1201,'Rahim','Farmer',TO_DATE('FEB 3,
97', 'MON DD, YY'),'Raipur','Male','017-2340',1401,1901);
insert into Patient VALUES(1202,'Karim','Labour','8-FEB-97'
,'Ropgong','Male','017-2580',1402,1902);
insert into Patient VALUES(1203,'Zahir','Busenessman','12-FEB-99'
,'Jamalpur','Male','017-3920',1401,1901);
insert into Patient VALUES(1204,'Siam','Engeneear','05-DEC-98'
,'Sripure','Male','017-2980',1403,1903);
insert into Patient VALUES(1205,'Somi','Housewife','05-OCT-98'
,'Raninagar','Female','017-2200',1405,1904);
insert into Patient VALUES(1206,'Sosmita','Student','09-OCT-14'
,'Raninagar','Female','017-2940',1406,1905);
insert into Patient VALUES(1207,'Sosmita','Student','11-OCT-14'
,'Raninagar','Female','017-2940',1407,1907);

```

```

insert into Contuct_no2 VALUES(1301,1201,'017-2340');
insert into Contuct_no2 VALUES(1302,1201,'017-2340');
insert into Contuct_no2 VALUES(1303,1202,'017-2580');
insert into Contuct_no2 VALUES(1304,1204,'017-2980');
insert into Contuct_no2 VALUES(1305,1205,'017-2200');
insert into Contuct_no2 VALUES(1306,1205,'017-2200');
insert into Contuct_no2 VALUES(1307,1206,'017-2940');

```

```

insert into Medicine VALUES(301,130,'SI',1201);
insert into Medicine VALUES(302,150,'ACI',1201);
insert into Medicine VALUES(303,160,'ACI',1202);
insert into Medicine VALUES(304,150,'SQURE',1204);
insert into Medicine VALUES(305,157,'SQURE',1203);
insert into Medicine VALUES(306,150,'SQURE',1205);
insert into Medicine VALUES(307,180,'SI',1206);

```

```

insert into Room VALUES(1601,1201,'Cabin_no1');
insert into Room VALUES(1602,1202,'Ward_no1');
insert into Room VALUES(1603,1203,'Ward_no2');
insert into Room VALUES(1604,1204,'Cabin_no2');
insert into Room VALUES(1605,1205,'Ward_no3');
insert into Room VALUES(1606,1206,'Cabin_no3');

```

```

insert into Nurse VALUES(1701,'Lamia','18-FEB-
98','Altabnagor','Female','019-2905',25000,1601);
insert into Nurse VALUES(1702,'Nadia','19-DEC-
98','Rangpur','Female','018-2905',25000,1602);
insert into Nurse VALUES(1703,'Raisa','15-SEP-
98','Bogra','Female','016-2365',20000,1603);

```

```
insert into Nurse VALUES(1704,'Raisa','17-SEP-98','Bogra','Female','016-2365',20000,1603);
insert into Nurse VALUES(1705,'Rehana','17-MAR-99','Rajshahi','Female','018-2225',21000,1604);
insert into Nurse VALUES(1706,'Nadia','13-MAR-99','Khulna','Female','015-5596',19000,1605);
insert into Nurse VALUES(1707,'Nazifa','13-MAY-99','Raipur','Female','016-1196',22000,1606);
```

```
insert into Contuct_no3 VALUES(1801,1701,'019-2905');
insert into Contuct_no3 VALUES(1802,1702,'018-2905');
insert into Contuct_no3 VALUES(1803,1703,'016-2365');
insert into Contuct_no3 VALUES(1804,1704,'016-2365');
insert into Contuct_no3 VALUES(1805,1705,'018-2225');
insert into Contuct_no3 VALUES(1806,1706,'015-5596');
insert into Contuct_no3 VALUES(1807,1707,'016-1196');
```

STORY

1.Find all the patient details who work as a buisnessman.

select * from Patient where Pdetails='Busenessman';

$\sigma_{pdetails="Buisnessman"}(Patient)$

2. Find the number of total price of medicine in quantity.

select Quantity,Price from Medicine where Price in(select sum(Price) from Medicine group by Quantity);

price,Quantity g sum(price)(Medicine)

3.Doctor treatment his patient and give some medicine whose id is same but medicine is different quantity,find price and quantity of medicine.

select Price,Quantity from Medicine where PID=1201;

$\pi_{price,quantity}(\sigma_{PID=1201}(Medicine))$

4.Fine all the doctor details who lives in Bogra.

select * from Doctor where Address='Bogra';

$\sigma_{Address="Bogra"}(Doctor)$

5.Doctor assigned patients in the different type of rooms.Find the patient details.

select * from Patient,Room where Patient.PID=Room.PID;

$(Patient \bowtie Room)$

$\sigma_{patient.PID=Room.PID}(Patient \times Room)$

6.Find all the doctor details whose salary is greater than 350000.

select * from Doctor where sal>350000;

$\sigma_{sal>350000}(Doctor)$

7.next time patients change his quantity of medicine firstly it use square quantity but next time use ARS quantity whose ID 1204.

update Medicine set Quantity='ARS' where PID=1204;

8.Count how many patient use of this different quantity of medicine.

select count(PID) from Medicine group by quantity;

Quantity Σ count(PID)(Medicine)

9. Find the doctors name, patients name, address of doctors and patients details.

select DNAME, PNAME, Doctor.Address, Pdetails from Doctor, Patient Where Doctor.DID=Patient.DID;

Π DNAME, PNAME, DOCTOR, Address, Pdetails (Doctor \bowtie Patient)

10. Find all the details of nurse who assigned in the Room cabin no.1.

select * from Nurse where RID=1601;

σ RID=1601(Nurse)

11. Find maximum salary of the nurse.

select max(Sal) from Nurse;

Σ max(sal)(Nurse)

12. Count how many nurse assigned different type pf the room.

select count(NID) from Nurse group by RID;

RID Σ count (NID)(Nurse)

13. When Lamia changed his address aftabnagar to Bogra.

update Nurse set Address='Bogra' where NID=1701;

14. Find the average salary of all doctor.

select avg(sal) from Doctor;

Σ avg(sal)(Doctor)

15. Find all the details of nurse Who joined in 17-9-98.

select * from Nurse where Hire_date='17-SEP-98';

σ Hire_date="17-sep-98"(Nurse)

16.Count all of the contact no that uses nurse and eliminate same number twice.

select count(distinct contact_no) from Nurse;

ρ count(distinct contact_no)(Nurse)

17.Find all details of Assistant who lives in Bogra.

select * from Assistant where Address='Bogra';

σ Address="Bogra"(Assistant)

18.Find the minimum salary of the doctor.

select min(sal) from Doctor;

ρ min (sal)(doctor)

19.Find the doctors name,salary,sex use salary ascending order.

select DNAME,sal,Sex from Doctor order by sal asc;

20. Find the doctor name,sal,patient name,patient details use sal descending order.

select DNAME,Sal,Patient.Sex,PNAME from Doctor,Patient Order by sal desc;

21. Find the assistant sex related sum of the salary.

select sum(sal)from Assistant group by sex;

sex ρ sum(sal)(Assistant)

22.Find the all of the details of Assistant whose ID 1904.

select *from Assistant where AID=1904;

σ AID=1904(Assistant)

23. Find the doctor name,adress,patient name and patient details who treatment a farmer.

select DNAME,PNAME,Doctor.Address,Pdetails from Doctor,Patient Where Doctor.DID=Patient.DID
and Pdetails='Farmer';

π DNAME,PNAME,DOCTOR,Address,pdetails

(∂ pdetails="Farmer"(Doctor \bowtie patient))

24.Find all of the doctors name,Address,Sex and Salary whose maximum salary different by Sex.

select DNAME,Address,Sex,Sal from Doctor where Sal in(select Max(Sal) from Doctor group by Sex);

25. Find the doctor name,address,patient name and patient details salary>40000.

select DNAME,PNAME,Doctor.Address,Pdetails from Doctor,Patient Where Doctor.DID=Patient.DID
and sal>40000;

π DNAME,Doctor,Address,DNAME,Pdetails(σ sal>40000(Doctor \bowtie patient))

26.find the assistant name, address, patient name and patient details whose salary > 19000

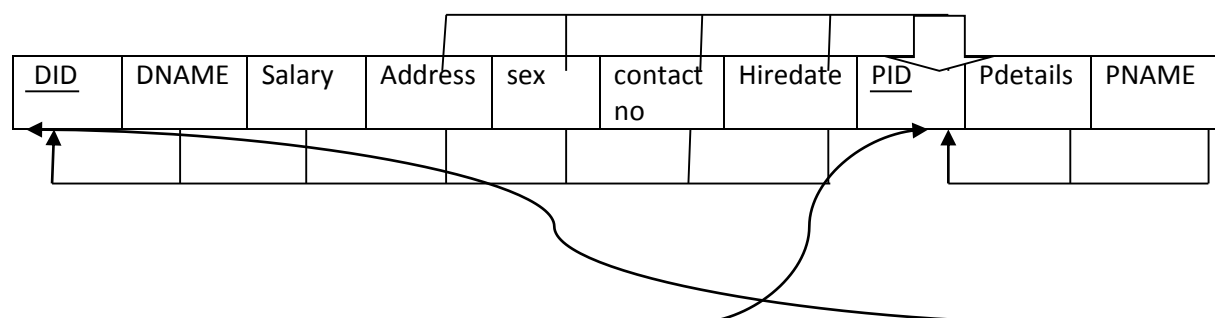
select ANAME,PNAME,Assistant.Address,Pdetails from Assistant,Patient Where
Assistant.AID=Patient.AID and sal>19000;

π ANAME, Assistant.Address,PNAME,Pdetails(σ sal > 19000 (Assistant \bowtie patient))

NORMALIZATION

<u>DID</u>	DNAME	Salary	Address	sex	contact no	Hiredate	<u>PID</u>	Pdetails	PNAME
------------	-------	--------	---------	-----	------------	----------	------------	----------	-------

1 NF:Remove Multiple attribute



<u>CID</u>	Contact no.	PID	DID
------------	-------------	-----	-----

2 NF: Remove partial dependencies: Let them be composite key.

Patient

<u>DID</u>	PNAME	Pdetails	Contact no.	Hire-date	Address	Sex
------------	-------	----------	-------------	-----------	---------	-----

Doctor

<u>PID</u>	DNAME	Salary	Address	Sex	Contact no.	Hire-date	DID
------------	-------	--------	---------	-----	-------------	-----------	-----

3 NF:

Remove Transitive Dependency. When PID non-key attribute.

PID	PNAME	Pdetails	Address	Hiredate	contact no	sex	<u>code</u>	Quantity	price

Medicine

<u>Code</u>	Quantity	Price	PID
-------------	----------	-------	-----

Patient

<u>PID</u>	PNAME	Pdetails	Address	Hiredate	contact no.	sex
------------	-------	----------	---------	----------	-------------	-----

2nd choose

<u>RID</u>	Type	<u>PID</u>	sex	PNAME	Contact no.	Address	pdetails	Hiredate

1 S NF: Remove multivalued attribute

Room

<u>RID</u>	Type
------------	------

Patient

<u>PID</u>	sex	PNAME	Contact no.	Address	pdetails	Hiredate
------------	-----	-------	-------------	---------	----------	----------

contact-no

<u>CID</u>	PID	Contact no.
------------	-----	-------------

2 NF: Remove partial Dependencies. Let them be composite key.

<u>PID</u>	Pdetails	sex	Address	PNAME	Hire-date	Contact no.
------------	----------	-----	---------	-------	-----------	-------------

Room

<u>RID</u>	Type	PID
------------	------	-----

3 NF: Remove Transitive Dependency. When PID non-key attribute.

Room

<u>RID</u>	Type	PID
------------	------	-----

Patient

<u>PID</u>	PNAME	Pdetails	Address	sex	Hiredate	contact no.
------------	-------	----------	---------	-----	----------	-------------

3rd choose

<u>NID</u>	NNAME	sex	salary	Address	Hire-date	contact no.	<u>RID</u>	Type
------------	-------	-----	--------	---------	-----------	-------------	------------	------

1 NF:

Remove multivalued attribute

Nurse

<u>NID</u>	NNAME	sex	salary	Address	Hire-date	contact no.
------------	-------	-----	--------	---------	-----------	-------------

contact no.

<u>CID</u>	NID	Contact no.
------------	-----	-------------

Room

<u>RID</u>	Type
------------	------

2 NF: When those tables are composite primary key. Removing partial dependencies.

Room

<u>RID</u>	Type
------------	------

Name

<u>NID</u>	NNAME	sex	salary	Address	Hire-date	code	RID
------------	-------	-----	--------	---------	-----------	------	-----

3 NF: Removing Transitive dependencies. When RID is non-key attribute.

Nurse

<u>NID</u>	NNAME	sex	salary	Address	Hire-date	Contact no.	RID
------------	-------	-----	--------	---------	-----------	-------------	-----

Room

<u>RID</u>	Type
------------	------

4th Choose

<u>AID</u>	ANAME	sex	salary	Address	contact no.	Hire-date	PID	PNAME	Pdetails
------------	-------	-----	--------	---------	-------------	-----------	-----	-------	----------

1 NF:Removing multivalued attribute

Assistant

<u>AID</u>	ANAME	sex	salary	address	contact no.	Hire-date
------------	-------	-----	--------	---------	-------------	-----------

Contact no.

<u>CID</u>	AID			Contact no.		
<u>PID</u>	PNAME	Pdetails	Address	Hire-date	sex	Contact no.

Contact no.

<u>CID</u>	PID	Contact no.				
------------	-----	-------------	--	--	--	--

1 NF: Removing multivalued attribute

Assistant

<u>AID</u>	ANAME	sex	salary	Address	Contact no.	Hire-date
------------	-------	-----	--------	---------	-------------	-----------

Contact no.

<u>CID</u>	AID	Contact no.
------------	-----	-------------

Patient

<u>PID</u>	PNAME	Pdetails	Address	Hiredate	sex	Contact no.
------------	-------	----------	---------	----------	-----	-------------

Contact no.

<u>CID</u>	PID	Contact no.
------------	-----	-------------

2 NF: When those tables are composite primary key removing partial dependencies

ASSISTANT

<u>AID</u>	ANAME	sex	Address	contact no.	Hiredate	salary
------------	-------	-----	---------	-------------	----------	--------

PATIENT

<u>PID</u>	PNAME	SEX	PDETAILS	ADDRESS	CONTACT-NO	HIRE-DATE	AID
------------	-------	-----	----------	---------	------------	-----------	-----

3 NF: Removing Transitive dependencies when AID non-key attribute.

patient

<u>PID</u>	PNAME	sex	Pdetails	Address	Contact no.	Hire-date	AID
------------	-------	-----	----------	---------	-------------	-----------	-----

Assistant

<u>AID</u>	ANAME	sex	Address	Contact no.	Hire-date	salary
------------	-------	-----	---------	-------------	-----------	--------

1st choose:

INSERTION:First time Doctor joined the hospital no patient treatment of this doctor. so,it can not insert of this table.

DELETION:If we delete patient ID 1203,we loose many information of this tuple.

UPDATE:Giving a salary increases to 40k-50k update multiple time.

2nd Choose:

INSERTION:patient assigned in the hospital but no room of this patient. So,it can not be inserted.

DELETION:When patient 1203 going to the hospital we loose many information.

UPDATE:If patient change his room update multiple time.

3rd choose:

INSERTION:First time Nurse joined the hospital but not assigned in the room.So,it can not insert of this table.

DELETION:If delete the name Raisa we loose many information.

UPDATE:Giving a salary increases to 20k-30k update multiple time.

4th choose:

INSERTION:First time assistant joined in the hospital. They have no record of the patient.So,it can not be inserted of this table.

DELETION:When HARis left the hospital we loose many infromation.

UPDATE:If we change name of Haris,we can update multiple time.

Project Learning Experience

LESSON LEARNED:

In this project we learned how to make a table, relationship diagram and clearly presenting every table. We can add new features as and when we require. We have learned about primary key and foreign key and also know about 1nf, 2nf and 3nf.

Software Scope and future plan

This project was developed to fulfill some requirement; however there is lots of scope to improve the performance of this management system in the area of database interface, database performance. There are many features like linking and integration of other database. Integration with hospital management system . We can also develop data security and system security. Our future plan is to include various features to our hospital management system.We want to make a user free hospital management system.

Problem faced

During creation of this database system we faced some problem. We used oracle 10g software and sometime its shows server error for why we failed to login. To complete database relationship diagram clearly showing every table, attributes and data type was tough task to done. We faced some problem while creating table. We also faced some problem to find primary key and foreign key. After acquiring 1nf, 2nf and 3nf it was easy to find foreign key. For some simple mistake it was difficult to create the required table like using wrong character or using the same name. But we tried our best to make this data base. We have learned from our mistake and we have also gained knowledge from our project and we will apply it in our future project.

