



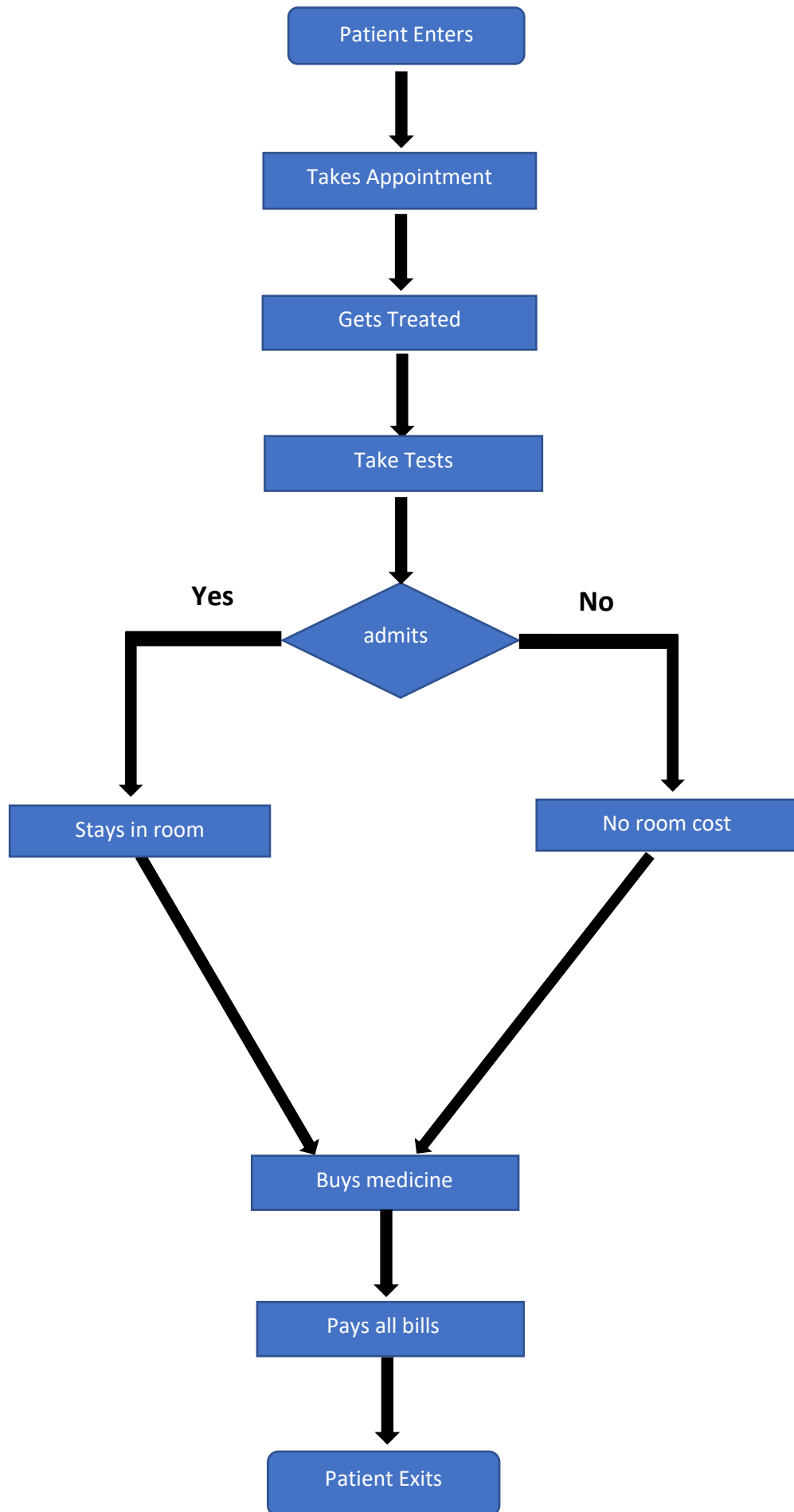
HOSPITAL MANAGEMENT DATABASE

PROBLEM STATEMENT:

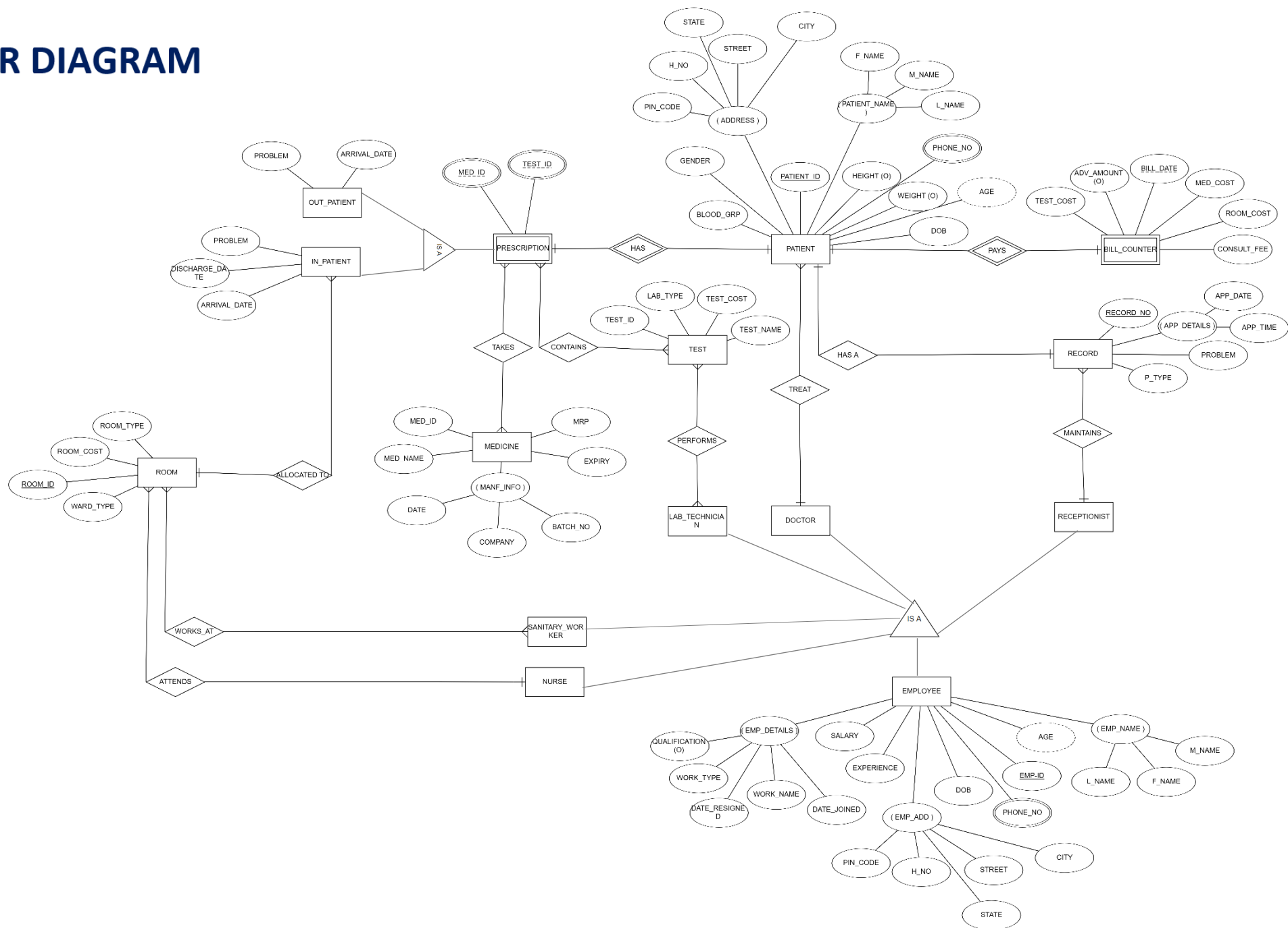
Our model represents a Hospital where our main aim is to keep a record of all the patients in the hospital, treatment they were prescribed(i.e tests, medicines and room if necessary), cost of the treatment, records of the employees and the work they are doing. This database helps ensure that all the records of both patients and employees are neatly organized and easily accessible.

OUR THOUGHT PROCESS:

Patient enters a hospital and takes an appointment. He/She waits for his turn and then gets treated by the doctor. Then, he/she is provided with a prescription. According to prescription, he/she pays the bill and completes their treatment. And if it is mentioned in prescription that he/she needs to get admitted, they become in-patients and they are also expected to pay the room bill. All the payment is done at bill-counter where patient gives his patient_id and gets the details of his payment.



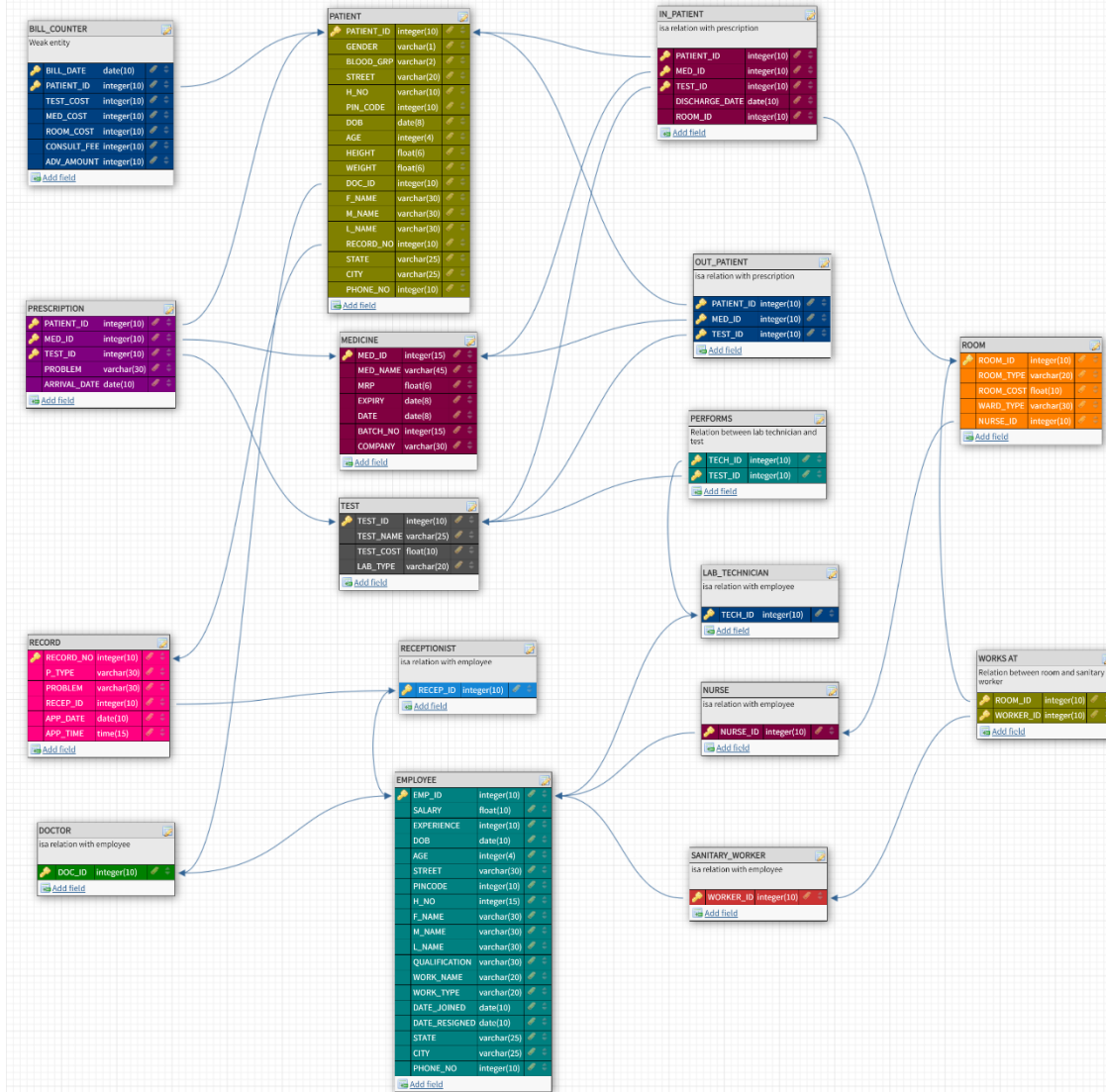
ER DIAGRAM



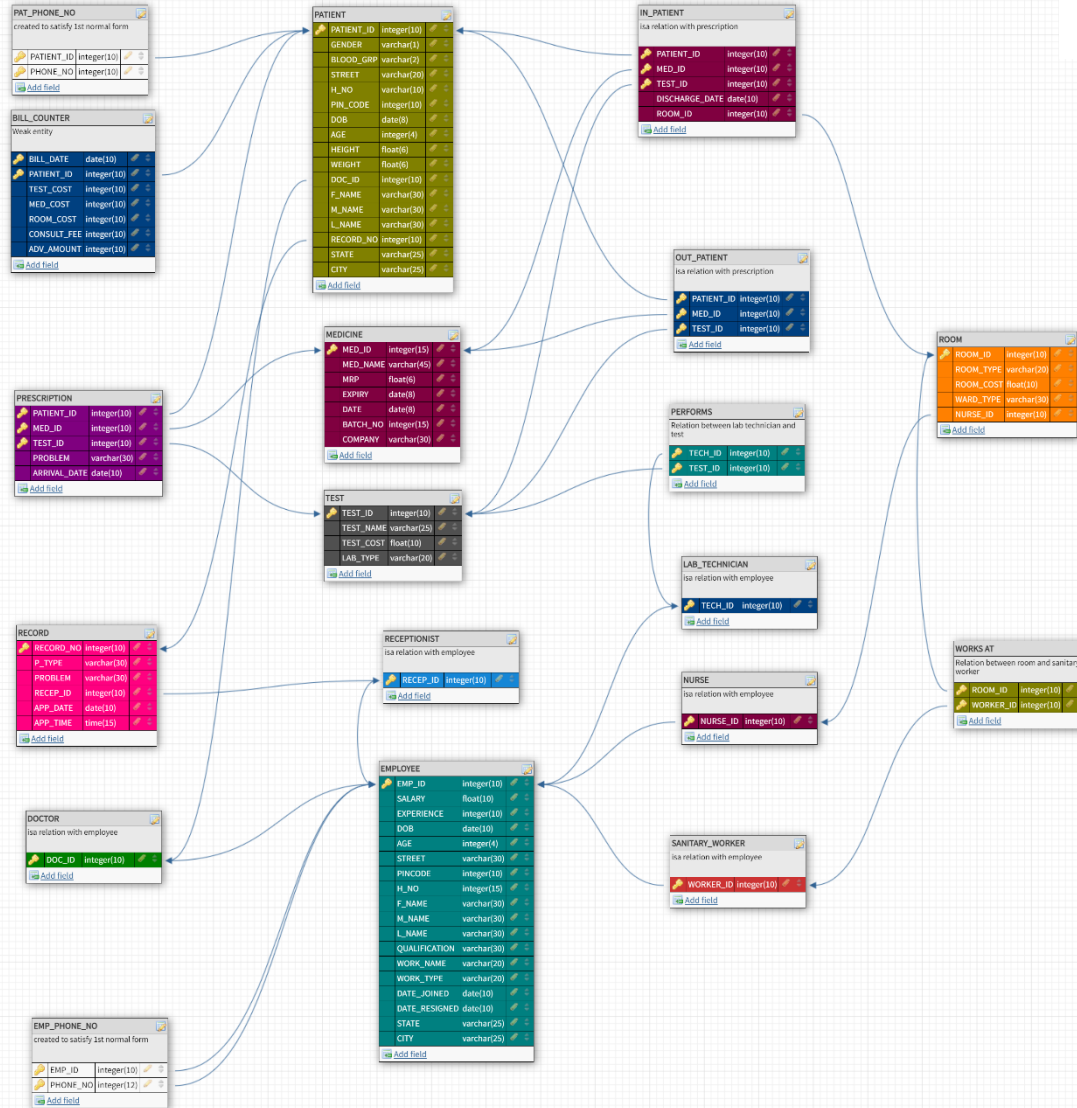
RELATIONSHIPS

SL.NO	ENTITY-1	ENTITY-2	RELATIONSHIP NAME	RELATIONSHIP TYPE	EXPLANATION
1.	PATIENT	BILL-COUNTER	PAYS	ONE TO ONE	A patient has only one bill to pay and a bill is addressed to a single patient.
2.	PATIENT	RECORD	HAS A	ONE TO ONE	A patient has only one row in record and one row in record is associated to a single patient.
3.	PATIENT	DOCTOR	TREAT	MANY TO ONE	A doctor can treat many patients but a patient gets treated by only one doctor.
4.	PATIENT	PRESCRIPTION	HAS	ONE TO ONE	A patient is prescribed a single prescription and a prescription is addressed to a single patient.
5.	RECORD	RECEPTIONIST	MAINTAINS	MANY TO ONE	One receptionist can handle many rows in a record but a single row in a record can't be handled by many receptionists.
6.	PRESCRIPTION	MEDICINE	TAKES	MANY TO MANY	One prescription can contain many medicines and one medicine can be in many prescriptions.
7.	PRESCRIPTION	TEST	CONTAINS	MANY TO MANY	One prescription can contain many tests and one test can be in many prescriptions.
8.	TEST	LAB_TECHNICIAN	PERFORMS	MANY TO MANY	One test can be performed by many lab-technicians and one lab-technician can perform many tests.
9.	IN_PATIENT	ROOM	ALLOCATED TO	MANY TO ONE	One room can be allotted to many patients but one patient can't be allotted to many rooms.
10.	ROOM	SANITARY_WORKER	WORKS_AT	MANY TO MANY	A sanitary worker can work at many rooms and a room can have many sanitary workers working.
11.	ROOM	NURSE	ATTEND	MANY TO ONE	A nurse can attend to many rooms but room can only be attended by one nurse

RELATIONAL SCHEMA



AFTER FIRST NORMAL FORM



Functional Dependencies:

Patient:

- patient_id → (gender, blood_grp, street, h_no, pincode, dob, age, height, weight, doc_id, f_name, m_name, l_name)
- record_id → (gender, blood_grp, street, h_no, pincode, dob, age, height, weight, doc_id, f_name, m_name, l_name)
- pincode → (state, city)

Prescription:

- (patient_id, med_id, test_id) → (problem, arrival_date)

Medicine:

- med_id → (med_name, mrp, expiry, mfg_date, batch_no, company)

Record:

- record_no → (p_type, problem, recep_id, app_date, app_time)

Test:

- test_id → (test_name, test_cost, lab_type)

Bill_counter:

- (bill_date, patient_id) → (test_cost, med_cost, room_cost, consult_fee, adv_amount)

Employee:

- emp_id → (salary, experience, dob, age, street, pincode, h_no, f_name, m_name, l_name, qualification, work_name, work_type, date_joined, date_resigned)
- pincode → (state, city)

Room:

- room_id → (room_type, room_cost, ward_type, nurse_id)

Works at:

- PK=(room_id, worker_id)

Performs:

- PK=(tech_id, test_id)

Doctor:

- PK=doc_id

Receptionist:

- PK=recep_id

Nurse:

- PK=nurse_id

Sanitary_worker:

- PK=worker_id

In_patient:

- (patient_id, med_id, test_id)->(discharge_date, room_id)

Out_patient:

- PK=(patient_id, med_id, test_id)

****NOTE: rest all tables in the schema diagram are multivalued attributes represented as tables (1st NF)*******

Normal Forms:

1st NF:

- Atomic attributes: To ensure that all attributes are atomic,
 - for composite attributes, all its components are included in the table. (address attribute in *Patient* and *Employee* tables).
 - for multivalued attributes, we maintained a separate table referencing to the main table (pat_phone_no with patient_id referencing to patient and emp_phone_no with emp_id referencing to employee)
- Uniqueness: We made sure that every attribute in a table has a unique name and there are no repeated tuples

Thus, 1st NF is achieved.

2nd NF:

- Partial dependency: There is no relation with one of the proper subsets of the candidate keys functionally dependent on the non-prime attributes. Hence, there is no partial dependency in any of the relations.

As all relations are in 1st NF and there is no partial dependency, we can say that the relational schema is already in 2nd NF.

3rd NF:

- Transitive dependency: Except for *employee* and *patient* relations, there is no relation where there is a functional dependency between two non-prime attributes. I.e. only *employee* and *patient* relations are transitively dependent.

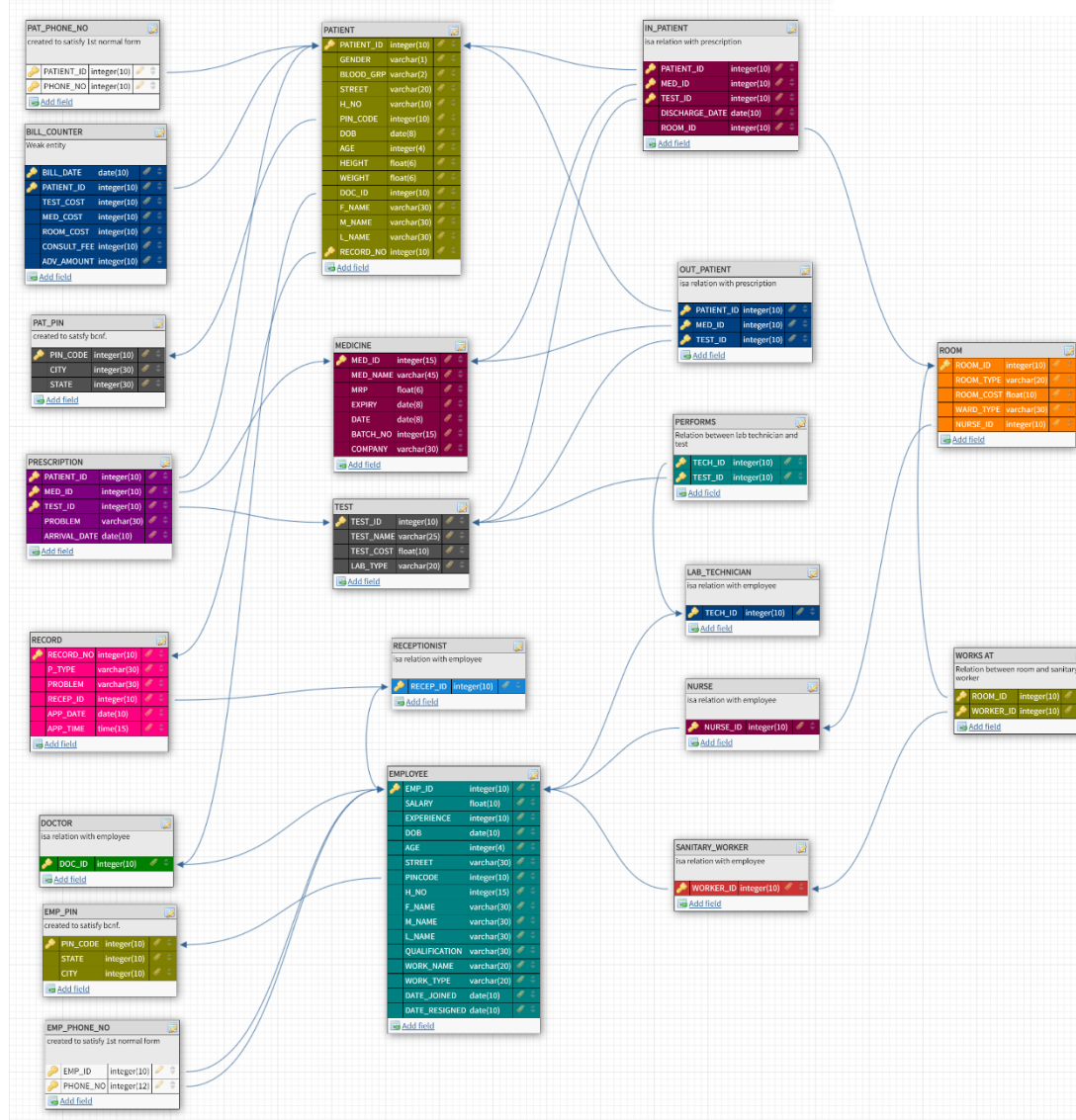
So, all relations except *employee* and *patient* are in 3rd NF. In *employee* and *patient* relations, we have a FD *pincode* → (*state*, *city*). To convert it into 3rd normal form, we are creating a relation with *pincode* as primary key and *state* and *city* as the other two attributes. In the main table we referenced *pincode* attribute to the *pincode* from this table.

Hence, the relational schema is in now 3rd NF.

BCNF:

Here, after converting the schema into 3rd NF there are no relations with functional dependencies without their left hand side being a super key. So, the relational schema is in BCNF.

AFTER CONVERSION INTO BCNF



NOTE:

Before conversion into 1st NF, there are 17 relations in the schema. After conversion into 1st NF there are 19 relations. After conversion BCNF there are 21 relations.

SQL - PART

```

CREATE TABLE PAT_PIN(
  PIN_CODE INT PRIMARY KEY,
  STATE VARCHAR(25),
  CITY VARCHAR(25)
);
INSERT INTO PAT_PIN VALUES(523102,'KARNATAKA','BANGALORE');
INSERT INTO PAT_PIN VALUES(623001,'TAMILNADU','CHENNAI');
INSERT INTO PAT_PIN VALUES(234502,'WESTBENGAL','KOLKATA');
INSERT INTO PAT_PIN VALUES(214502,'RAJASTHAN','JAIPUR');
INSERT INTO PAT_PIN VALUES(515004,'ANDHRA PRADESH','ANANTAPUR');
INSERT INTO PAT_PIN VALUES(523001,'MAHARASTRA','MUMBAI');

```

	PIN_CODE	STATE	CITY
1	523102	KARNATAKA	BANGALORE
2	623001	TAMILNADU	CHENNAI
3	234502	WESTBENGAL	KOLKATA
4	214502	RAJASTHAN	JAIPUR
5	515004	ANDHRA PRADESH	ANANTAPUR
6	523001	MAHARASTRA	MUMBAI

--EMP_PIN:

```

CREATE TABLE EMP_PIN(
  PIN_CODE INT PRIMARY KEY,
  STATE VARCHAR(25),
  CITY VARCHAR(25)
);
INSERT INTO EMP_PIN VALUES(523102,'KARNATAKA','BANGALORE');
INSERT INTO EMP_PIN VALUES(623001,'TAMILNADU','CHENNAI');
INSERT INTO EMP_PIN VALUES(234502,'WESTBENGAL','KOLKATA');
INSERT INTO EMP_PIN VALUES(214502,'RAJASTHAN','JAIPUR');
INSERT INTO EMP_PIN VALUES(515004,'ANDHRA PRADESH','ANANTAPUR');
INSERT INTO EMP_PIN VALUES(523001,'MAHARASTRA','MUMBAI');

```

	PIN_CODE	STATE	CITY
1	523102	KARNATAKA	BANGALORE
2	623001	TAMILNADU	CHENNAI
3	234502	WESTBENGAL	KOLKATA
4	214502	RAJASTHAN	JAIPUR
5	515004	ANDHRA PRADESH	ANANTAPUR
6	523001	MAHARASTRA	MUMBAI

--EMPLOYEE:

```
CREATE TABLE EMPLOYEE (  
    EMP_ID INT PRIMARY KEY,  
    SALARY NUMBER(8,2),  
    EXPERIENCE INT,  
    DOB DATE,  
    AGE INT,  
    STREET VARCHAR(30),  
    PINCODE INT,  
    H_NO VARCHAR(15),  
    F_NAME VARCHAR(30),  
    M_NAME VARCHAR(30),  
    L_NAME VARCHAR(30),  
    QUALIFICATION VARCHAR(30),  
    WORK_NAME VARCHAR(20),  
    WORK_TYPE VARCHAR(20),  
    DATE_JOINED DATE,  
    DATE_RESIGNED DATE,  
    FOREIGN KEY (PINCODE)  
    REFERENCES EMP_PIN(PIN_CODE)  
);
```

```
INSERT INTO EMPLOYEE VALUES (101,100000,12,'01-MAR-  
1972',49,'WALMART STREET',523001,'42A','MANIKATHA','RAJU','UPPURI',  
'MD','DOCTOR','PERMANENT','23-MAR-2010',NULL);  
INSERT INTO EMPLOYEE VALUES (102,100000,13,'01-APRIL-  
1963',58,'VIP STREET',234502,'32B','RAJIV','KUMAR','MUKHATI',  
'MBBS','DOCTOR','PERMANENT','23-JUNE-2015',NULL);  
INSERT INTO EMPLOYEE VALUES (103,100000,24,'10-JAN-  
1953',68,'HGT STRRET',623001,'34C','MAHENDHAR','RAJ','PATIYARI',  
'MBBS','DOCTOR','TEMPORARY','23-APR-2012',NULL);  
INSERT INTO EMPLOYEE VALUES (104,102003,23,'10-FEB-  
1956',65,'MENG STREET',523102,'33A','RAHUL','KUMAR','JARUN',  
'MBBS','DOCTOR','PERMANENT','24-APR-2014',NULL);  
INSERT INTO EMPLOYEE VALUES (105,102323,12,'10-JAN-  
1960',61,'NILMUK STREET',515004,'34A','RAJAN','KUMAR','IYER',  
'MBBS','DOCTOR','PERMANENT','23-SEP-2020',NULL);  
INSERT INTO EMPLOYEE VALUES (10001,10000,5,'01-APR-  
1989',31,'NGO STREET',214502,'33B','PRIYA','KAPOOR','KHAN',  
'B-TECH','RECEPTIONIST','PERMANENT','15-APR-2016',NULL);  
INSERT INTO EMPLOYEE VALUES (10002,12000,8,'01-APR-  
1995',25,'SUBASH STREET',234502,'34B','PREETI','RAJ','PANJA',  
'B-COM','RECEPTIONIST','PERMANENT','04-APR-2014',NULL);  
INSERT INTO EMPLOYEE VALUES (10003,11000,6,'19-AUG-  
1993',27,'HGT STREET',623001,'31A','SONY','VIKRAM','SINGH',  
'B-TECH','RECEPTIONIST','TEMPORARY','21-APR-2015',NULL);
```



```

INSERT INTO EMPLOYEE VALUES (10004,12000,7,'08-AUG-
1992',28,'MENG STREET',523102,'33C','MEHAK','RAJU','ACHARYA',
'B-COM','RECEPTIONIST','PERMANENT','12-APR-2014',NULL);
INSERT INTO EMPLOYEE VALUES (10005,12500,7,'09-SEP-
1992',28,'VIP STREET',234502,'32D','ANSHU','DEV','AHUJA',
'B-TECH','RECEPTIONIST','PERMANENT','09-APR-2014',NULL);
INSERT INTO EMPLOYEE VALUES (5001,15000,10,'09-SEP-
1984',36,'NGO STREET',214502,'32B','KAJAL','RAJ','MEHTA',
'M.SC','NURSE','PERMANENT','05-APR-2011',NULL);
INSERT INTO EMPLOYEE VALUES (5002,14000,10,'15-SEP-
1984',36,'NULMUK STREET',515004,'34B','VENKAT','KUMAR','AHUJA',
'B.SC','NURSE','PERMANENT','12-APR-2011',NULL);
INSERT INTO EMPLOYEE VALUES (5003,14500,11,'15-APR-
1985',35,'SUBASH STREET',234502,'39A','KEERTI','SURESH','IYER',
'B.SC','NURSE','PERMANENT','12-APR-2010',NULL);
INSERT INTO EMPLOYEE VALUES (5004,16000,12,'18-APR-
1984',36,'HGT STREET',623001,'39B','THANVI','RAJ','SHARMA',
'M.SC','NURSE','PERMANENT','08-APR-2009',NULL);
INSERT INTO EMPLOYEE VALUES (5005,7000,1,'17-APR-
1984',36,'NGO STREET',214502,'39C','SATVIK','MUKESH','PATEL',
'B.SC','NURSE','TEMPORARY','13-AUG-2020',NULL);
INSERT INTO EMPLOYEE VALUES (20001,20000,14,'18-JUN-
1982',38,'HGT STREET',623001,'40A','MANIKANTA','DEV','DARAM',
'B.SC(MLT)','LAB TECHNICIAN','PERMANENT','09-AUG-2007',NULL);
INSERT INTO EMPLOYEE VALUES (20002,25000,14,'18-AUG-
1982',38,'VIP STREET',234502,'32M','RAMAN','KUMAR','ACHARYA',
'DMLT','LAB TECHNICIAN','PERMANENT','09-JUN-2007',NULL);
INSERT INTO EMPLOYEE VALUES (20003,10000,1,'18-AUG-
1995',25,'MENG STREET',523102,'33M','KARTHIK','REDDY','KOTA',
'B.SC(MLT)','LAB TECHNICIAN','TEMPORARY','04-APR-2020',NULL);
INSERT INTO EMPLOYEE VALUES (20004,15000,6,'19-AUG-
1987',33,'NULMUK STREET',515004,'34N','KARTHIK','RAJ','JOSHI',
'B.SC(MLT)','LAB TECHNICIAN','PERMANENT','05-JUL-2015',NULL);
INSERT INTO EMPLOYEE VALUES (20005,17000,4,'14-APR-
1990',30,'SUBASH STREET',234502,'39P','KAVYA','RAJ','CHOWDARY',
'DMLT','LAB TECHNICIAN','PERMANENT','05-APR-2017',NULL);
INSERT INTO EMPLOYEE VALUES (6001,5000,2,'19-APR-
1985',35,'WALMART STREET',523001,'42A','LINGAYYA','RAJU','PALEM',
NULL,'SANITARY WORKER','PERMANENT','08-APR-2019',NULL);
INSERT INTO EMPLOYEE VALUES (6002,7000,6,'19-AUG-
1989',31,'VIP STREET',234502,'41D','RAGAMMA','RAJU','DARAM',
NULL,'SANITARY WORKER','PERMANENT','09-APR-2015',NULL);
INSERT INTO EMPLOYEE VALUES (6003,7000,5,'19-APR-
1989',31,'HGT STREET',623001,'39N','KARTHIK','RAJ','AHUJA',
NULL,'SANITARY WORKER','TEMPORARY','09-APR-2016',NULL);
INSERT INTO EMPLOYEE VALUES (6004,8000,7,'19-SEP-
1988',32,'NGO STREET',214502,'40M','DEVANSH','KUMAR','MEHTA',
NULL,'SANITARY WORKER','PERMANENT','18-APR-2014',NULL);
INSERT INTO EMPLOYEE VALUES (6005,9000,8,'08-AUG-
1990',30,'HGT STREET',623001,'40N','RAJESH','DEV','PATEL',
NULL,'SANITARY WORKER','PERMANENT','13-APR-2013',NULL);

```

	EMP_ID	SALARY	EXPERIENCE	DOB	AGE	STREET	FINCODE	H_NO	F_NAME	M_NAME	L_NAME	QUALIFICATION	WORK_NAME	WORK_TYPE	DATE_JOINED	DATE_RESIGNED
1	101	100000		12-01-03-72	49	WALMART STREET	523001	42A	MANIKATHA RAJU	UPPURI	MD	DOCTOR		PERMANENT	23-03-10	(null)
2	102	100000		13-01-04-63	58	VIP STREET	234502	32B	RAJIV KUMAR		MUKHATI MBBS	DOCTOR		PERMANENT	23-06-15	(null)
3	103	100000		24-10-01-53	68	HGT STREET	623001	34C	MAHENDHAR RAJ		PATYARI MBBS	DOCTOR		TEMPORARY	23-04-12	(null)
4	104	102003		23-10-02-56	65	MENG STREET	523102	33A	RAHUL KUMAR	JARUN	MBBS	DOCTOR		PERMANENT	24-04-14	(null)
5	105	102323		12-10-01-60	61	NILMUK STREET	515004	34A	RAJAN KUMAR	IYYER	MBBS	DOCTOR		PERMANENT	23-09-20	(null)
6	10001	10000		5-01-04-89	31	NGO STREET	214502	33B	PRIYA KAPOOR KHAN		B-TECH	RECEPTIONIST		PERMANENT	15-04-16	(null)
7	10002	12000		8-01-04-95	25	SUBASH STREET	234502	34B	PREETI RAJ	PANJA	B-COM	RECEPTIONIST		PERMANENT	04-04-14	(null)
8	10003	11000		6-19-08-93	27	HGT STREET	623001	31A	SONY VIKRAM SINGH		B-TECH	RECEPTIONIST		TEMPORARY	21-04-15	(null)
9	10004	12000		7-08-08-92	28	MENG STREET	523102	33C	MEHAK RAJU	ACHARYA	B-COM	RECEPTIONIST		PERMANENT	12-04-14	(null)
10	10005	12500		7-09-09-92	28	VIP STREET	234502	32D	ANSHU DEV	AHUJA	B-TECH	RECEPTIONIST		PERMANENT	09-04-14	(null)
11	5001	15000		10-09-09-84	36	NGO STREET	214502	32B	KAJAL RAJ	MEHTA	M.SC	NURSE		PERMANENT	05-04-11	(null)
12	5002	14000		10-15-09-84	36	NULMUK STREET	515004	34B	VENKAT KUMAR	AHUJA	B.SC	NURSE		PERMANENT	12-04-11	(null)
13	5003	14500		11-15-04-85	35	SUBASH STREET	234502	39A	KEERTI SURESH IYYER		B.SC	NURSE		PERMANENT	12-04-10	(null)
14	5004	16000		12-18-04-84	36	HGT STREET	623001	39B	THANVI RAJ	SHARMA	M.SC	NURSE		PERMANENT	08-04-09	(null)
15	5005	7000		1-17-04-84	36	NGO STREET	214502	39C	SATVIK MUKESH PATEL		B.SC	NURSE		TEMPORARY	13-08-20	(null)
16	20001	20000		14-18-06-82	38	HGT STREET	623001	40A	MANIKANTA DEV	DARAM	B.SC (MLT)	LAB TECHNICIAN		PERMANENT	09-08-07	(null)
17	20002	25000		14-18-08-82	38	VIP STREET	234502	32M	RAMAN KUMAR	ACHARYA	DMLT	LAB TECHNICIAN		PERMANENT	09-06-07	(null)
18	20003	10000		1-18-08-95	25	MENG STREET	523102	33M	KARTHIK REDDY	KOTA	B.SC (MLT)	LAB TECHNICIAN		TEMPORARY	04-04-20	(null)
19	20004	15000		6-19-08-87	33	NULMUK STREET	515004	34N	KARTHIK RAJ	JOSHI	B.SC (MLT)	LAB TECHNICIAN		PERMANENT	05-07-15	(null)
20	20005	17000		4-14-04-90	30	SUBASH STREET	234502	39P	KAVYA RAJ	CHOWDARY	DMLT	LAB TECHNICIAN		PERMANENT	05-04-17	(null)
21	6001	5000		2-19-04-85	35	WALMART STREET	523001	42A	LINGAYYA RAJU	PALEM	(null)	SANITARY WORKER		PERMANENT	08-04-19	(null)
22	6002	7000		6-19-08-89	31	VIP STREET	234502	41D	RAGAMMA RAJU	DARAM	(null)	SANITARY WORKER		PERMANENT	09-04-15	(null)
23	6003	7000		5-19-04-89	31	HGT STREET	623001	39N	KARTHIK RAJ	AHUJA	(null)	SANITARY WORKER		TEMPORARY	09-04-16	(null)
24	6004	8000		7-19-09-88	32	NGO STREET	214502	40M	DEVANSH KUMAR	MEHTA	(null)	SANITARY WORKER		PERMANENT	18-04-14	(null)
25	6005	9000		8-08-08-90	30	HGT STREET	623001	40N	RAJESH DEV	PATEL	(null)	SANITARY WORKER		PERMANENT	13-04-13	(null)

```
--EMP_PHONE_NO:
CREATE TABLE EMP_PHONE_NO (
    EMP_ID INT NOT NULL,
    PHONE_NO INT NOT NULL,
    FOREIGN KEY(EMP_ID) REFERENCES EMPLOYEE(EMP_ID),
    PRIMARY KEY(EMP_ID, PHONE_NO)
);
INSERT INTO EMP_PHONE_NO VALUES (101,9945201942);
INSERT INTO EMP_PHONE_NO VALUES (101,9946291942);
INSERT INTO EMP_PHONE_NO VALUES (102,9845201942);
INSERT INTO EMP_PHONE_NO VALUES (103,9945201941);
INSERT INTO EMP_PHONE_NO VALUES (103,9945201940);
INSERT INTO EMP_PHONE_NO VALUES (104,9945201842);
INSERT INTO EMP_PHONE_NO VALUES (105,9945101942);
INSERT INTO EMP_PHONE_NO VALUES (10001,9945211942);
INSERT INTO EMP_PHONE_NO VALUES (10002,9945221942);
INSERT INTO EMP_PHONE_NO VALUES (10002,9955201942);
INSERT INTO EMP_PHONE_NO VALUES (10003,9945201921);
INSERT INTO EMP_PHONE_NO VALUES (10004,9945201932);
INSERT INTO EMP_PHONE_NO VALUES (10005,9945201912);
INSERT INTO EMP_PHONE_NO VALUES (5001,9945121942);
INSERT INTO EMP_PHONE_NO VALUES (5001,9912201942);
INSERT INTO EMP_PHONE_NO VALUES (5002,9945201952);
INSERT INTO EMP_PHONE_NO VALUES (5003,8945201942);
INSERT INTO EMP_PHONE_NO VALUES (5004,9845201942);
INSERT INTO EMP_PHONE_NO VALUES (5005,9985201942);
INSERT INTO EMP_PHONE_NO VALUES (20001,9945201948);
INSERT INTO EMP_PHONE_NO VALUES (20002,9945201949);
INSERT INTO EMP_PHONE_NO VALUES (20003,9945201992);
INSERT INTO EMP_PHONE_NO VALUES (20004,9945208942);
INSERT INTO EMP_PHONE_NO VALUES (20005,9945901942);
INSERT INTO EMP_PHONE_NO VALUES (6001,7945201942);
INSERT INTO EMP_PHONE_NO VALUES (6002,9745201942);
INSERT INTO EMP_PHONE_NO VALUES (6002,7745201942);
INSERT INTO EMP_PHONE_NO VALUES (6003,9975201942);
INSERT INTO EMP_PHONE_NO VALUES (6004,9945201742);
INSERT INTO EMP_PHONE_NO VALUES (6005,9945201972);
INSERT INTO EMP_PHONE_NO VALUES (6005,9945201772);
```

	EMP_ID	PHONE_NO
1	101	9945201942
2	101	9946291942
3	102	9845201942
4	103	9945201941
5	103	9945201940
6	104	9945201842
7	105	9945101942
8	10001	9945211942
9	10002	9945221942
10	10002	9955201942
11	10003	9945201921
12	10004	9945201932
13	10005	9945201912
14	5001	9945121942
15	5001	9912201942
16	5002	9945201952
17	5003	8945201942
18	5004	9845201942
19	5005	9985201942
20	20001	9945201948
21	20002	9945201949
22	20003	9945201992
23	20004	9945208942
24	20005	9945901942
25	6001	7945201942
26	6002	9745201942
27	6002	7745201942
28	6003	9975201942
29	6004	9945201742
30	6005	9945201972
31	6005	9945201772

```
--DOCTOR:
CREATE TABLE DOCTOR (
  DOC_ID INT PRIMARY KEY,
  FOREIGN KEY(DOC_ID)
  REFERENCES EMPLOYEE(EMP_ID)
);
INSERT INTO DOCTOR VALUES (101);
INSERT INTO DOCTOR VALUES (102);
INSERT INTO DOCTOR VALUES (103);
INSERT INTO DOCTOR VALUES (104);
INSERT INTO DOCTOR VALUES (105);
```

	DOC_ID
1	101
2	102
3	103
4	104
5	105

```
CREATE TABLE RECEPTIONIST (
  RECEP_ID INT PRIMARY KEY,
  FOREIGN KEY(RECEP_ID)
  REFERENCES EMPLOYEE(EMP_ID)
);
INSERT INTO RECEPTIONIST VALUES (10001);
INSERT INTO RECEPTIONIST VALUES (10002);
INSERT INTO RECEPTIONIST VALUES (10003);
INSERT INTO RECEPTIONIST VALUES (10004);
INSERT INTO RECEPTIONIST VALUES (10005);
```

	RECEP_ID
1	10001
2	10002
3	10003
4	10004
5	10005

```
CREATE TABLE NURSE (  
  NURSE_ID INT PRIMARY KEY,  
  FOREIGN KEY(NURSE_ID)  
  REFERENCES EMPLOYEE(EMP_ID)  
);
```

```
INSERT INTO NURSE VALUES (5001);  
INSERT INTO NURSE VALUES (5002);  
INSERT INTO NURSE VALUES (5003);  
INSERT INTO NURSE VALUES (5004);  
INSERT INTO NURSE VALUES (5005);
```

	NURSE_ID
1	5001
2	5002
3	5003
4	5004
5	5005

```
CREATE TABLE LAB_TECHNICIAN (  
  TECH_ID INT PRIMARY KEY,  
  FOREIGN KEY(TECH_ID)  
  REFERENCES EMPLOYEE(EMP_ID)  
);
```

```
INSERT INTO LAB_TECHNICIAN VALUES (20001);  
INSERT INTO LAB_TECHNICIAN VALUES (20002);  
INSERT INTO LAB_TECHNICIAN VALUES (20003);  
INSERT INTO LAB_TECHNICIAN VALUES (20004);  
INSERT INTO LAB_TECHNICIAN VALUES (20005);
```

	TECH_ID
1	20001
2	20002
3	20003
4	20004
5	20005

```
CREATE TABLE SANITARY_WORKER (
  WORKER_ID INT PRIMARY KEY,
  FOREIGN KEY(WORKER_ID)
  REFERENCES EMPLOYEE(EMP_ID)
);
```

```
INSERT INTO SANITARY_WORKER VALUES (6001);
INSERT INTO SANITARY_WORKER VALUES (6002);
INSERT INTO SANITARY_WORKER VALUES (6003);
INSERT INTO SANITARY_WORKER VALUES (6004);
INSERT INTO SANITARY_WORKER VALUES (6005);
```

	WORKER_ID
1	6001
2	6002
3	6003
4	6004
5	6005

--RECORD:

```
CREATE TABLE RECORD(
  RECORD_NO NUMBER(10),
  P_TYPE VARCHAR(30),
  PROBLEM VARCHAR(30),
  RECEP_ID NUMBER(10),
  APP_DATE DATE,
  APP_TIME VARCHAR(15),
  PRIMARY KEY(RECORD_NO)
);
DROP TABLE RECORD;
INSERT INTO RECORD VALUES(401, 'OUT', 'FEVER', 10001, '07-MAR-2021', '07:00:00');
INSERT INTO RECORD VALUES(402, 'IN', 'HYPOTHERMIA', 10002, '08-MAR-2021', '10:00:00');
INSERT INTO RECORD VALUES(403, 'IN', 'STOMACH PAIN', 10003, '09-MAR-2021', '11:00:00');
INSERT INTO RECORD VALUES(404, 'OUT', 'HEAD ACHE', 10004, '10-MAR-2021', '16:00:00');
INSERT INTO RECORD VALUES(405, 'IN', 'VITAMIN DEFICIENCY', 10005, '11-MAR-2021', '19:00:00');
```

	RECORD_NO	P_TYPE	PROBLEM	RECEP_ID	APP_DATE	APP_TIME
1	401	OUT	FEVER	10001	07-03-21	07:00:00
2	402	IN	HYPOTHERMIA	10002	08-03-21	10:00:00
3	403	IN	STOMACH PAIN	10003	09-03-21	11:00:00
4	404	OUT	HEAD ACHE	10004	10-03-21	16:00:00
5	405	IN	VITAMIN DEFICIENCY	10005	11-03-21	19:00:00

--PATIENT:

```

CREATE TABLE PATIENT (
  PATIENT_ID INT PRIMARY KEY,
  GENDER VARCHAR(1),
  BLOOD_GRP VARCHAR(2),
  STREET VARCHAR(20),
  H_NO VARCHAR(10),
  PIN_CODE INT,
  DOB DATE,
  AGE INT,
  HEIGHT NUMBER(10,4),
  WEIGHT NUMBER(10,4),
  DOC_ID INT,
  F_NAME VARCHAR(30),
  M_NAME VARCHAR(30),
  L_NAME VARCHAR(30),
  RECORD_NO NUMBER(10),
  FOREIGN KEY (PIN_CODE) REFERENCES PAT_PIN(PIN_CODE),
  FOREIGN KEY (DOC_ID) REFERENCES DOCTOR(DOC_ID),
  FOREIGN KEY (RECORD_NO) REFERENCES RECORD(RECORD_NO)
);
INSERT INTO PATIENT VALUES(21001 , 'M' , 'O+' , 'SPRUSE STREET ' , '79B' , 523001
, '06-FEB-1998' , 23 , 5.8 , 60 , 101 , 'ARUN' , 'KUMAR' , 'SHARMA' , 401 );
INSERT INTO PATIENT VALUES(21002, 'M' , 'O-
' , 'MANKINDO STREET' , '34A' , 523102, '07-SEP-
1990' , 31 , 5.9 ,70 , 102 , 'SHEKHAR' , 'KUMAR' , 'AYYENDER' , 402 );
INSERT INTO PATIENT VALUES(21003, 'F' , 'A+' , 'REVENUE STREET' , '30A' , 623001 ,
'03-AUG-1970' , 51 , 6.0 ,68 , 103 , 'RENUKA' , 'DEVI' , 'IYYENDER' , 403 );
INSERT INTO PATIENT VALUES(21004, 'M' , 'B-
' , 'VIP STREET' , '24C' , 234502 , '07-JUN-
1975' , 46 , 5.6 ,70 , 104 , 'JOHN' , 'MICHEAL' , 'STANLEY' , 404 );
INSERT INTO PATIENT VALUES(21005, 'M' , 'B+' , 'HIR STREET' , '14A' , 2145
02 , '03-FEB-1980' , 41 , 5.6 ,69 , 105 , 'MICHEAL' , 'JOESPH' , 'JACKSON' , 405 );

```

PATIENT_ID	GENDER	BLOOD_GRP	STREET	H_NO	PIN_CODE	DOB	AGE	HEIGHT	WEIGHT	DOC_ID	F_NAME	M_NAME	L_NAME	RECORD_NO
1	21001M	O+	SPRUSE STREET	79B	523001	06-02-98	23	5.8	60	101	ARUN	KUMAR	SHARMA	401
2	21002M	O-	MANKINDO STREET	34A	523102	07-09-90	31	5.9	70	102	SHEKHAR	KUMAR	AYYENDER	402
3	21003F	A+	REVENUE STREET	30A	623001	03-08-70	51	6	68	103	RENUKA	DEVI	IYYENDER	403
4	21004M	B-	VIP STREET	24C	234502	07-06-75	46	5.6	70	104	JOHN	MICHEAL	STANLEY	404
5	21005M	B+	HIR STREET	14A	214502	03-02-80	41	5.6	69	105	MICHEAL	JOESPH	JACKSON	405

```

CREATE TABLE PAT_PHONE_NO(
    PATIENT_ID INT,
    PHONE_NO INT,
    PRIMARY KEY(PATIENT_ID,PHONE_NO),
    FOREIGN KEY (PATIENT_ID) REFERENCES PATIENT(PATIENT_ID)
);
INSERT INTO PAT_PHONE_NO VALUES(21001 ,9848364289);
INSERT INTO PAT_PHONE_NO VALUES(21001 ,9949223543);
INSERT INTO PAT_PHONE_NO VALUES(21003, 3412312342);
INSERT INTO PAT_PHONE_NO VALUES(21004, 1245244563);
INSERT INTO PAT_PHONE_NO VALUES(21005, 1234212444);

```

	PATIENT_ID	PHONE_NO
1	21001	9848364289
2	21001	9949223543
3	21003	3412312342
4	21004	1245244563
5	21005	1234212444

--MEDICINE:

```

CREATE TABLE MEDICINE(
    MED_ID INT PRIMARY KEY,
    MED_NAME VARCHAR(45),
    MRP NUMBER(10,4),
    EXPIRY DATE,
    MFG DATE,
    BATCH_NO INT,
    COMPANY VARCHAR(30)
);
INSERT INTO MEDICINE VALUES(34021,'PARACETEMOL',60.00,'23-DEC-2022','23-DEC-2021',200,'GRANUELS INDIA LTD');
INSERT INTO MEDICINE VALUES(34022,'CROCIN',20.48,'21-JAN-2022','23-FEB-2021',201,'GLAXO SMITHKLINE');
INSERT INTO MEDICINE VALUES(34023,'PEPTO BISMOL',30.43,'21-JAN-2024','21-MAR-2021',202,'THE PROCTOR AND GAMBLE COMPANY');
INSERT INTO MEDICINE VALUES(34024,'IBUPROFEN',23.23,'21-DEC-2023','21-JAN-2020',203,'ABBOTT LTD');
INSERT INTO MEDICINE VALUES(34025,'HEALTH OK',150.32,'21-FEB-2024','21-APR-2023',204,'MANKIND PRIVATE LIMITED');

```



```

INSERT INTO MEDICINE VALUES(34026,'BETADINE' ,147,'26-FEB-2024','20-APR-2023',205,'SUN PHARMACEUTICAL');
INSERT INTO MEDICINE VALUES(34027,'SSRI-ANTIDEPRESSANT' ,162.2,'21-FEB-2024','21-APR-2023',206,'CIPLA');
INSERT INTO MEDICINE VALUES(34028,'ACETAMINOPHEN' ,187,'21-MAR-2024','21-FEB-2023',207,'DR. REDDYS LABS');
INSERT INTO MEDICINE VALUES(34029,'ZOFRAN' ,126,'21-APR-2024','21-MAR-2023',208,'AUROBINDO PHARMA');
INSERT INTO MEDICINE VALUES(34030,'OMNI GEL' ,50.32,'21-JUN-2024','21-MAY-2023',209,'LUPID LTD');

```

	MED_ID	MED_NAME	MRP	EXPIRY	MFG	BATCH_NO	COMPANY
1	34021	PARACETEMOL	60	23-12-22	23-12-21	200	GRANUELS INDIA LTD
2	34022	CROCIN	20.48	21-01-22	23-02-21	201	GLAXO SMITHKLINE
3	34023	PEPTO BISMOL	30.43	21-01-24	21-03-21	202	THE PROCTOR AND GAMBLE COMPANY
4	34024	IBUPROFEN	23.23	21-12-23	21-01-20	203	ABBOTT LTD
5	34025	HEALTH OK	150.32	21-02-24	21-04-23	204	MANKIND PRIVATE LIMITED
6	34026	BETADINE	147	26-02-24	20-04-23	205	SUN PHARMACEUTICAL
7	34027	SSRI-ANTIDEPRESSANT	162.2	21-02-24	21-04-23	206	CIPLA
8	34028	ACETAMINOPHEN	187	21-03-24	21-02-23	207	DR. REDDYS LABS
9	34029	ZOFRAN	126	21-04-24	21-03-23	208	AUROBINDO PHARMA
10	34030	OMNI GEL	50.32	21-06-24	21-05-23	209	LUPID LTD

```

CREATE TABLE TEST(
    TEST_ID INT PRIMARY KEY,
    TEST_NAME VARCHAR(40),
    TEST_COST NUMBER(10,4),
    LAB_TYPE VARCHAR(40)
);

```

```

INSERT INTO TEST VALUES(1001, 'BLOOD_TEST',600,'CLINICAL LABORATORY');
INSERT INTO TEST VALUES(1002, 'COMMON COLD DIAGNOSIS',600, 'IMAGING LABORATORY');
INSERT INTO TEST VALUES(1003,'SCANNING' ,1000 , 'X RAY AND SCANNING LABORATORY');
INSERT INTO TEST VALUES(1004,'COMPUTER TOMOGRAPHY' , 1500, 'DIAGNOISIS LABORATORY');
INSERT INTO TEST VALUES(1005,'METHYMALONIC ACID TEST' , 1300 , 'MEDICAL IMAGINE LABORATORY');
INSERT INTO TEST VALUES(1006,'URINE TEST' , 300 , 'CLINICAL LABORATORY');
INSERT INTO TEST VALUES(1007,'ENDOSCOPY' , 3000 , 'DIAGNOISIS LABORATORY');

```

TEST_ID	TEST_NAME	TEST_COST	LAB_TYPE
1	1001 BLOOD TEST	600	CLINICAL LABORATORY
2	1002 COMMON COLD DIAGNOSIS	600	IMAGING LABORATORY
3	1003 SCANNING	1000	X RAY AND SCANNING LABORATORY
4	1004 COMPUTER TOMOGRAPHY	1500	DIAGNOSIS LABORATORY
5	1005 METHYMALONIC ACID TEST	1300	MEDICAL IMAGINE LABORATORY
6	1006 URINE TEST	300	CLINICAL LABORATORY
7	1007 ENDOSCOPY	3000	DIAGNOSIS LABORATORY

```

CREATE TABLE PRESCRIPTION(
    PATIENT_ID INT,
    MED_ID INT,
    TEST_ID INT,
    PROBLEM VARCHAR(30),
    ARRIVAL_DATE DATE,
    PRIMARY KEY(PATIENT_ID,MED_ID,TEST_ID),
    FOREIGN KEY (PATIENT_ID) REFERENCES PATIENT(PATIENT_ID),
    FOREIGN KEY (MED_ID) REFERENCES MEDICINE(MED_ID),
    FOREIGN KEY (TEST_ID) REFERENCES TEST(TEST_ID)
);

```

```

INSERT INTO PRESCRIPTION VALUES(21001,34021,1001,'FEVER','17-SEP-2021');
INSERT INTO PRESCRIPTION VALUES(21002,34022,1002,'HYPOTHERMIA','18-SEP-2021');
INSERT INTO PRESCRIPTION VALUES(21003,34023,1003,'STOMACH PAIN','17-MAR-2021');
INSERT INTO PRESCRIPTION VALUES(21004,34024,1004,'HEAD ACHE','12-MAR-2021');
INSERT INTO PRESCRIPTION VALUES(21005,34025,1005,'VITAMIN DEFECIENCE','23-APR-2021');
INSERT INTO PRESCRIPTION VALUES(21005,34026,1006,'VITAMIN DEFECIENCE','23-APR-2021');
INSERT INTO PRESCRIPTION VALUES(21005,34027,1007,'VITAMIN DEFECIENCE','23-APR-2021');
INSERT INTO PRESCRIPTION VALUES(21003,34028,1004,'STOMACH PAIN','17-MAR-2021');
INSERT INTO PRESCRIPTION VALUES(21002,34029,1007,'HYPOTHERMIA','18-SEP-2021');
INSERT INTO PRESCRIPTION VALUES(21001,34030,1006,'FEVER','17-SEP-2021');

```

	PATIENT_ID	MED_ID	TEST_ID	PROBLEM	ARRIVAL_DATE
1	21001	34021	1001	FEVER	17-09-21
2	21002	34022	1002	HYPOTHERMIA	18-09-21
3	21003	34023	1003	STOMACH PAIN	17-03-21
4	21004	34024	1004	HEAD ACHE	12-03-21
5	21005	34025	1005	VITAMIN DEFECIENCE	23-04-21
6	21005	34026	1006	VITAMIN DEFECIENCE	23-04-21
7	21005	34027	1007	VITAMIN DEFECIENCE	23-04-21
8	21003	34028	1004	STOMACH PAIN	17-03-21
9	21002	34029	1007	HYPOTHERMIA	18-09-21
10	21001	34030	1006	FEVER	17-09-21

-- ROOM --

```
CREATE TABLE ROOM(
  ROOM_ID INT,
  ROOM_TYPE VARCHAR(20),
  ROOM_COST NUMBER(10,2),
  WARD_TYPE VARCHAR(30),
  NURSE_ID INT,
  FOREIGN KEY( NURSE_ID ) REFERENCES NURSE( NURSE_ID),
  PRIMARY KEY(ROOM_ID)
);
```

```
INSERT INTO ROOM VALUES( 4001 , 'MULITBED' , 1000 , 'GENERAL' , 5001 );
INSERT INTO ROOM VALUES( 4002 , 'SINGLE' , 3000 , 'EMERGENCY' , 5002 );
INSERT INTO ROOM VALUES( 4003 , 'DOUBLE' , 2500 , 'HIGH DEPENDENCY' , 5003 );
INSERT INTO ROOM VALUES( 4004 , 'SINGLE' , 1500 , 'INTENSIVE CARE' , 5004 );
INSERT INTO ROOM VALUES( 4005 , 'DOUBLE' , 2000 , 'FIRST AID' , 5005 );
SELECT * FROM ROOM;
```

	ROOM_ID	ROOM_TYPE	ROOM_COST	WARD_TYPE	NURSE_ID
1	4001	MULITBED	1000	GENERAL	5001
2	4002	SINGLE	3000	EMERGENCY	5002
3	4003	DOUBLE	2500	HIGH DEPENDENCY	5003
4	4004	SINGLE	1500	INTENSIVE CARE	5004
5	4005	DOUBLE	2000	FIRST AID	5005

--INPATIENT--

```
CREATE TABLE IN_PATIENT(  
    PATIENT_ID INT,  
    MED_ID INT ,  
    TEST_ID INT ,  
    DISCHARGE_DATE DATE,  
    ROOM_ID INT,  
    PRIMARY KEY( PATIENT_ID , MED_ID , TEST_ID ),  
    FOREIGN KEY (PATIENT_ID) REFERENCES PATIENT(PATIENT_ID),  
    FOREIGN KEY (MED_ID) REFERENCES MEDICINE(MED_ID),  
    FOREIGN KEY (TEST_ID) REFERENCES TEST(TEST_ID)  
);
```

```
INSERT INTO IN_PATIENT VALUES( 21002 , 34022 , 1002 , '19-SEP-2021' , 4002 );  
INSERT INTO IN_PATIENT VALUES( 21003 , 34023 , 1003 , '20-MAR-2021' , 4003 );  
INSERT INTO IN_PATIENT VALUES( 21005 , 34025 , 1005 , '25-APR-2021' , 4005 );  
INSERT INTO IN_PATIENT VALUES( 21002 , 34029 , 1007 , '19-SEP-2021' , 4002 );  
INSERT INTO IN_PATIENT VALUES( 21003 , 34028 , 1004 , '20-MAR-2021' , 4003 );  
INSERT INTO IN_PATIENT VALUES( 21005 , 34026 , 1006 , '25-APR-2021' , 4005 );  
INSERT INTO IN_PATIENT VALUES( 21005 , 34027 , 1007 , '25-APR-2021' , 4005 );  
SELECT * FROM IN_PATIENT;
```

	PATIENT_ID	MED_ID	TEST_ID	DISCHARGE_DATE	ROOM_ID
1	21002	34022	1002	19-09-21	4002
2	21003	34023	1003	20-03-21	4003
3	21005	34025	1005	25-04-21	4005
4	21002	34029	1007	19-09-21	4002
5	21003	34028	1004	20-03-21	4003
6	21005	34026	1006	25-04-21	4005
7	21005	34027	1007	25-04-21	4005

--OUT-PATINET--

```
CREATE TABLE OUT_PATIENT(  
  
    PATIENT_ID INT,  
    MED_ID INT ,  
    TEST_ID INT ,  
    PRIMARY KEY( PATIENT_ID , MED_ID , TEST_ID ),  
    FOREIGN KEY (PATIENT_ID) REFERENCES PATIENT(PATIENT_ID),  
    FOREIGN KEY (MED_ID) REFERENCES MEDICINE(MED_ID),  
    FOREIGN KEY (TEST_ID) REFERENCES TEST(TEST_ID)  
);
```

```

INSERT INTO OUT_PATIENT VALUES( 21001 , 34021 , 1001 );
INSERT INTO OUT_PATIENT VALUES( 21004 , 34024 , 1004 );
INSERT INTO OUT_PATIENT VALUES( 21001 , 34030 , 1006 );
SELECT * FROM OUT_PATIENT;

```

	PATIENT_ID	MED_ID	TEST_ID
1	21001	34021	1001
2	21004	34024	1004
3	21001	34030	1006

--WORKS_AT--

```

CREATE TABLE WORKS_AT(

    ROOM_ID INT,
    WORKER_ID INT,
    PRIMARY KEY( ROOM_ID , WORKER_ID ),
    FOREIGN KEY( ROOM_ID ) REFERENCES ROOM(ROOM_ID),
    FOREIGN KEY( WORKER_ID ) REFERENCES SANITARY_WORKER( WORKER_ID )
);

```

```

INSERT INTO WORKS_AT VALUES( 4001 , 6001 );
INSERT INTO WORKS_AT VALUES( 4002 , 6002 );
INSERT INTO WORKS_AT VALUES( 4003 , 6003 );
INSERT INTO WORKS_AT VALUES( 4004 , 6004 );
INSERT INTO WORKS_AT VALUES( 4005 , 6005 );
SELECT * FROM WORKS_AT;

```

	ROOM_ID	WORKER_ID
1	4001	6001
2	4002	6002
3	4003	6003
4	4004	6004
5	4005	6005

--PERFORMS---

```
CREATE TABLE PERFORMS(  
    TECH_ID INT,  
    TEST_ID INT,  
    PRIMARY KEY( TECH_ID , TEST_ID ),  
    FOREIGN KEY( TECH_ID ) REFERENCES LAB_TECHNICIAN( TECH_ID ),  
    FOREIGN KEY( TEST_ID ) REFERENCES TEST( TEST_ID )  
);
```

```
INSERT INTO PERFORMS VALUES ( 20001 , 1001 );  
INSERT INTO PERFORMS VALUES ( 20002 , 1002 );  
INSERT INTO PERFORMS VALUES ( 20003 , 1003 );  
INSERT INTO PERFORMS VALUES ( 20004 , 1004 );  
INSERT INTO PERFORMS VALUES ( 20005 , 1005 );  
INSERT INTO PERFORMS VALUES ( 20002 , 1006 );  
INSERT INTO PERFORMS VALUES ( 20003 , 1007 );  
SELECT * FROM PERFORMS;
```

	TECH_ID	TEST_ID
1	20001	1001
2	20002	1002
3	20003	1003
4	20004	1004
5	20005	1005
6	20002	1006
7	20003	1007

--BILL_COUNTER--

```
CREATE TABLE BILL_COUNTER(  
    BILL_DATE DATE,  
    PATIENT_ID INT,  
    TEST_COST NUMBER(10,2),  
    MED_COST NUMBER(10,2),  
    ROOM_COST NUMBER(10,2),  
    CONSULT_FEE NUMBER(10,2),  
    ADV_AMOUNT NUMBER(10,2),  
    PRIMARY KEY( BILL_DATE , PATIENT_ID ),  
    FOREIGN KEY( PATIENT_ID ) REFERENCES PATIENT( PATIENT_ID )  
);
```

```

INSERT INTO BILL_COUNTER VALUES( '17-SEP-
2021' , 21001 , 900 , 110.32 , 0 , 300 , 500 );
INSERT INTO BILL_COUNTER VALUES( '19-SEP-
2021' , 21002 , 3600 , 146.48 , 3000 , 700 , 5000 );
INSERT INTO BILL_COUNTER VALUES( '20-SEP-
2021' , 21003 , 2500 , 217.43 , 2500 , 500 , 4500 );
INSERT INTO BILL_COUNTER VALUES( '12-MAR-
2021' , 21004 , 1500 , 23.3 , 0 , 600 , 1000 );
INSERT INTO BILL_COUNTER VALUES( '25-APR-
2021' , 21005 , 1900 , 459.52 , 2000 , 500 , 2000 );
SELECT * FROM BILL_COUNTER;

```

⚡	BILL_DATE	⚡	PATIENT_ID	⚡	TEST_COST	⚡	MED_COST	⚡	ROOM_COST	⚡	CONSULT_FEE	⚡	ADV_AMOUNT
1	17-09-21		21001		900		110.32		0		300		500
2	19-09-21		21002		3600		146.48		3000		700		5000
3	20-09-21		21003		2500		217.43		2500		500		4500
4	12-03-21		21004		1500		23.3		0		600		1000
5	25-04-21		21005		1900		459.52		2000		500		2000

----- ***** -----