Student ID: S92066299
Reg. No: 121426299

EEI4366/ EEX4366

Data Modeling and Database Systems

TMA 2

Student ID: S92066299
Reg. No: 121426299

Student ID: S92066299
Reg. No: 121426299

1.Create Database and Tables

1.1 Create database

```
1   -- Drop database to run script multiple times
2   DROP DATABASE IF EXISTS Suwapiyasa;
3
4   -- Crate database suwapiyasa
5   CREATE DATABASE Suwapiyasa;
6
7   Show databases;
8
9
10
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Database
performance_schema
ps2
sakila
suwapiyasa
sys

Result 1

Output

Action Output

#	Time	Action	Message
1	11:43:27	DROP DATABASE IF EXISTS Suwapiyasa	10 row(s) affected
2	11:43:28	CREATE DATABASE Suwapiyasa	1 row(s) affected
3	11:43:28	Show databases	11 row(s) returned

1.2 Use database and create table employee

```
7   -- use the database
8   USE Suwapiyasa;
9
10  -- Create the 'employee' table
11  CREATE TABLE employee (
12      emp_Id INT PRIMARY KEY,
13      name VARCHAR(100),
14      gender CHAR(1),
15      address VARCHAR(200),
16      telephone_no VARCHAR(20)
17  );
18
```

Student ID: S92066299
Reg. No: 121426299

1.3 Create tables ‘head doctor’ and ‘doctor’

```sql
-- Create the 'head_doctor' table
CREATE TABLE head_doctor (
    HD_number INT PRIMARY KEY,
    specialty VARCHAR(100),
    salary DECIMAL(10, 2),
    emp_Id INT UNIQUE,
    FOREIGN KEY (emp_Id) REFERENCES employee(emp_Id)
);
-- Create the 'doctor' table
CREATE TABLE doctor (
    specialty VARCHAR(100),
    salary DECIMAL(10, 2),
    HD_number INT,
    emp_Id INT UNIQUE,
    FOREIGN KEY (HD_number) REFERENCES head_doctor(HD_number),
    FOREIGN KEY (emp_Id) REFERENCES employee(emp_Id)
);
```

1.4 Create table ‘surgeon’

```sql
-- Create the 'surgeon' table
CREATE TABLE surgeon (
    specialty VARCHAR(100),
    type_of_contract VARCHAR(50),
    length_of_contract INT,
    emp_Id INT UNIQUE,
    FOREIGN KEY (emp_Id) REFERENCES employee(emp_Id)
);
```

1.5 Create table ‘patient’

```
46      -- Create the 'patient' table
47  ●   CREATE TABLE patient (
48          patient_Id INT PRIMARY KEY,
49          initials VARCHAR(10),
50          surname VARCHAR(100),
51          address VARCHAR(200),
52          age INT,
53          blood_type VARCHAR(5),
54          allergies VARCHAR(200),
55          telephone_no VARCHAR(20),
56          doctor_Id INT,
57          FOREIGN KEY (doctor_Id) REFERENCES doctor(emp_Id)
58      );
```

1.6 Create table ‘surgery’

```
60      -- Create the 'surgery' table
61  ●   CREATE TABLE surgery (
62          surgery_Id INT PRIMARY KEY,
63          patient_Id INT,
64          surgery_name VARCHAR(100),
65          date DATE,
66          theatre VARCHAR(50),
67          time TIME,
68          surgeon_Id INT,
69          category VARCHAR(100),
70          special_needs VARCHAR(200),
71          no_of_nurses INT,
72          FOREIGN KEY (patient_Id) REFERENCES patient(patient_Id),
73          FOREIGN KEY (surgeon_Id) REFERENCES surgeon(emp_Id)
74      );
```

1.7 Create tables ‘nurse’ and ‘location’

```sql
-- Create the 'nurse' table
CREATE TABLE nurse (
    grade INT,
    salary DECIMAL(10, 2),
    surgery_skill_type VARCHAR(100),
    years_of_experience INT,
    emp_Id INT UNIQUE,
    surgery_Id INT,
    FOREIGN KEY (emp_Id) REFERENCES employee(emp_Id),
    FOREIGN KEY (surgery_Id) REFERENCES surgery(surgery_Id)
);
-- Create the 'location' table
CREATE TABLE location (
    bed_no INT,
    room_no INT,
    nursing_unit VARCHAR(100),
    patient_Id INT,
    FOREIGN KEY (patient_Id) REFERENCES patient(patient_Id)
);
```

1.8 Create tables ‘medication’ and ‘patient_medication’

```sql
-- Create the 'medication' table
CREATE TABLE medication (
    medication_Id INT PRIMARY KEY,
    name VARCHAR(100),
    cost DECIMAL(10, 2),
    expiration_date DATE,
    qty_ordered INT,
    qty_on_hand INT
);

-- Create the 'patient_medication' table
CREATE TABLE patient_medication (
    medication_Id INT PRIMARY KEY,
    patient_Id INT,
    medicine_qty_taken INT,
    FOREIGN KEY (patient_Id) REFERENCES patient(patient_Id),
    FOREIGN KEY (medication_Id) REFERENCES medication(medication_Id)
);
```

1.9 Show tables

```
116 •   show tables;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Tables_in_suwapiyasa
doctor
employee
head_doctor
location
medication
nurse
patient
patient_medication
surgeon
surgery

2. Database Population

2.1 Insert values to table employee

```
116     -- Insert values into the 'employee' table
117 •   INSERT INTO employee (emp_Id, name, gender, address, telephone_no)
118     VALUES
119         (1, 'Nimal', 'M', '123 Main St', '0771234567'),
120         (2, 'Janny', 'F', '456 Oak Ave', '0789234563'),
121         (3, 'Michael', 'M', '789 Elm Rd', '0789982462'),
122         (4, 'Roshani', 'F', '101 Maple St', '0789234585'),
123         (5, 'Kamal', 'M', '222 Pine Rd', '0789234574'),
124         (6, 'Sunil', 'M', '123 Main St', '0771234567'),
125         (7, 'Rani', 'F', '456 Oak Ave', '0789234563'),
126         (8, 'Roshan', 'M', '789 Elm Rd', '0789982462'),
127         (9, 'Roshani', 'F', '101 Maple St', '0789234585'),
128         (10, 'Ajith', 'M', '222 Pine Rd', '0789234574'),
129         (11, 'Gayani', 'F', '101 Maple St', '0789234585'),
130         (12, 'Suresh', 'M', '222 Pine Rd', '0789234574');
```

2.2 Insert values to table head doctor and table doctor

```
133     -- Insert values into the 'head_doctor' table
134 •  INSERT INTO head_doctor (HD_number, specialty, salary, emp_Id)
135     VALUES
136         (101, 'Cardiology', 120000, 1),
137         (102, 'Neurology', 130000, 2),
138         (103, 'Oncology', 110000, 3);
139
140     -- Insert values into the 'doctor' table
141 •  INSERT INTO doctor (specialty, salary, HD_number, emp_Id)
142     VALUES
143         ('Cardiology', 100000, 101, 4),
144         ('Neurology', 105000, 102, 5),
145         ('Oncology', 95000, 103, 6);
146
```

2.3 Insert values to table surgeon and table patient

```
148     -- Insert values into the 'surgeon' table
149 •  INSERT INTO surgeon (specialty, type_of_contract, length_of_contract, emp_Id)
150     VALUES
151         ('Cardiothoracic', 'Permanent', 2, 7),
152         ('Orthopedic', 'Temporary', 1, 8),
153         ('Plastic', 'Permanent', 3, 9);
154
155
156     -- Insert values into the 'patient' table
157 •  INSERT INTO patient (patient_Id, initials, surname, address, age, blood_type, allergies, telephone_no, doctor_Id)
158     VALUES
159         (1001, 'A. B.', 'Gayan', '789 Elm Rd', 35, 'O+', 'None', '0789234741', 6),
160         (1002, 'C. D.', 'Nimali', '222 Pine Rd', 45, 'A-', 'Peanuts', '07892347758', 4),
161         (1003, 'E. F.', 'Thilini', '101 Maple St', 60, 'B+', 'Penicillin', '0789234251', 5),
162         (1004, 'G. H.', 'Achala', '123 Main St', 28, 'AB-', 'None', '0789234678', 4),
163         (1005, 'I. J.', 'Sumith', '456 Oak Ave', 50, 'O-', 'Sulfa', '0789347548', 6);
164
```

2.4 Insert values to table surgery and table nurse

```
-- Insert values into the 'surgery' table
INSERT INTO surgery (surgery_Id, patient_Id, surgery_name, date, theatre, time, surgeon_Id, category,
special_needs, no_of_nurses)
VALUES
    (2001, 1001, 'Heart Bypass', '2023-08-01', 'Theatre A', '10:00:00', 7, 'Cardiac', 'None', 3),
    (2002, 1002, 'Knee Replacement', '2023-08-02', 'Theatre B', '14:30:00', 8, 'Orthopedic', 'None', 2),
    (2003, 1003, 'Breast Augmentation', '2023-08-03', 'Theatre C', '09:45:00', 9, 'Plastic', 'Antibiotics', 2),
    (2004, 1004, 'Brain Tumor Removal', '2023-08-04', 'Theatre D', '13:15:00', 9, 'Neurological', 'None', 4),
    (2005, 1005, 'Appendectomy', '2023-08-05', 'Theatre E', '11:30:00', 7, 'General', 'None', 3);

-- Insert values into the 'nurse' table
INSERT INTO nurse (grade, salary, surgery_skill_type, years_of_experience, emp_Id, surgery_Id)
VALUES
    (1, 60000, 'Cardiac', 10, 10, 2001),
    (2, 55000, 'Orthopedic', 11, 11, 2002),
    (2, 57000, 'Plastic', 4, 12, 2003);
```

2.5 Insert values to table location and table medication

```
-- Insert values into the 'location' table
INSERT INTO location (bed_no, room_no, nursing_unit, patient_Id)
VALUES
    (101, 201, 'Cardiology', 1001),
    (102, 202, 'Orthopedic', 1002),
    (103, 203, 'Plastic', 1003),
    (104, 204, 'Neurology', 1004),
    (105, 205, 'General', 1005);

-- Insert values into the 'medication' table
INSERT INTO medication (medication_Id, name, cost, expiration_date, qty_ordered, qty_on_hand)
VALUES
    (3001, 'Aspirin', 10.99, '2024-12-31', 100, 500),
    (3002, 'Ibuprofen', 8.49, '2023-10-31', 80, 200),
    (3003, 'Penicillin', 15.75, '2025-06-30', 50, 150),
    (3004, 'Acetaminophen', 12.25, '2024-08-31', 120, 300),
    (3005, 'Amoxicillin', 18.50, '2023-11-30', 70, 180);
```

2.6 Insert values to table patient medication

```
201     -- Insert values into the 'patient_medication' table
202 •  INSERT INTO patient_medication (medication_Id, patient_Id, medicine_qty_taken)
203     VALUES
204         (3001, 1001, 2),
205         (3002, 1002, 1),
206         (3003, 1003, 3),
207         (3004, 1004, 1),
208         (3005, 1005, 2);
209
```

2.7 Employee table

```
210 •  select* from employee;
```

Result Grid | Filter Rows: | Edit: | Export

emp_Id	name	gender	address	telephone_no
1	Nimal	M	123 Main St	0771234567
2	Janny	F	456 Oak Ave	0789234563
3	Michael	M	789 Elm Rd	0789982462
4	Roshani	F	101 Maple St	0789234585
5	Kamal	M	222 Pine Rd	0789234574
6	Sunil	M	123 Main St	0771234567
7	Rani	F	456 Oak Ave	0789234563
8	Roshan	M	789 Elm Rd	0789982462
9	Roshani	F	101 Maple St	0789234585
10	Ajith	M	222 Pine Rd	0789234574
11	Gayani	F	101 Maple St	0789234585
12	Suresh	M	222 Pine Rd	0789234574

2.8 Head_doctor table

```
210 •  select* from head_doctor;
```

Result Grid | Filter Rows: | Edit: | Ex

HD_number	specialty	salary	emp_Id
101	Cardiology	120000.00	1
102	Neurology	130000.00	2
103	Oncology	110000.00	3
NULL	NULL	NULL	NULL

2.9 Doctor table

```
210 •   select* from doctor;
```

Result Grid | Filter Rows: | Export:

specialty	salary	HD_number	emp_Id
Cardiology	100000.00	101	4
Neurology	105000.00	102	5
Oncology	95000.00	103	6

2.10 Surgeon table

```
210 •   select* from surgeon;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

specialty	type_of_contract	length_of_contract	emp_Id
Cardiothoracic	Permanent	2	7
Orthopedic	Temporary	1	8
Plastic	Permanent	3	9

2.11 Patient table

```
210 •   select* from patient;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

patient_Id	initials	surname	address	age	blood_type	allergies	telephone_no	doctor_Id
1001	A. B.	Gayan	789 Elm Rd	35	O+	None	0789234741	6
1002	C. D.	Nimali	222 Pine Rd	45	A-	Peanuts	07892347758	4
1003	E. F.	Thilini	101 Maple St	60	B+	Penicillin	0789234251	5
1004	G. H.	Achala	123 Main St	28	AB-	None	0789234678	4
1005	I. J.	Sumith	456 Oak Ave	50	O-	Sulfa	0789347548	6
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Student ID: S92066299
Reg. No: 121426299

2.11 Surgery table

```
210 •  select* from surgery;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

surgery_Id	patient_Id	surgery_name	date	theatre	time	surgeon_Id	category	special_needs	no_of_nurses
2001	1001	Heart Bypass	2023-08-01	Theatre A	10:00:00	7	Cardiac	None	3
2002	1002	Knee Replacement	2023-08-02	Theatre B	14:30:00	8	Orthopedic	None	2
2003	1003	Breast Augmentation	2023-08-03	Theatre C	09:45:00	9	Plastic	Antibiotics	2
2004	1004	Brain Tumor Removal	2023-08-04	Theatre D	13:15:00	9	Neurological	None	4
2005	1005	Appendectomy	2023-08-05	Theatre E	11:30:00	7	General	None	3
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

2.12 Nurse table

```
210 •  select* from nurse;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

grade	salary	surgery_skill_type	years_of_experience	emp_Id	surgery_Id
1	60000.00	Cardiac	10	10	2001
2	55000.00	Orthopedic	11	11	2002
2	57000.00	Plastic	4	12	2003

2.13 Location table

```
210 •  select* from location;
```

Result Grid | Filter Rows: | Export: | Wrap

bed_no	room_no	nursing_unit	patient_Id
101	201	Cardiology	1001
102	202	Orthopedic	1002
103	203	Plastic	1003
104	204	Neurology	1004
105	205	General	1005

2.14 Medication table

```
210 •  select* from medication;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

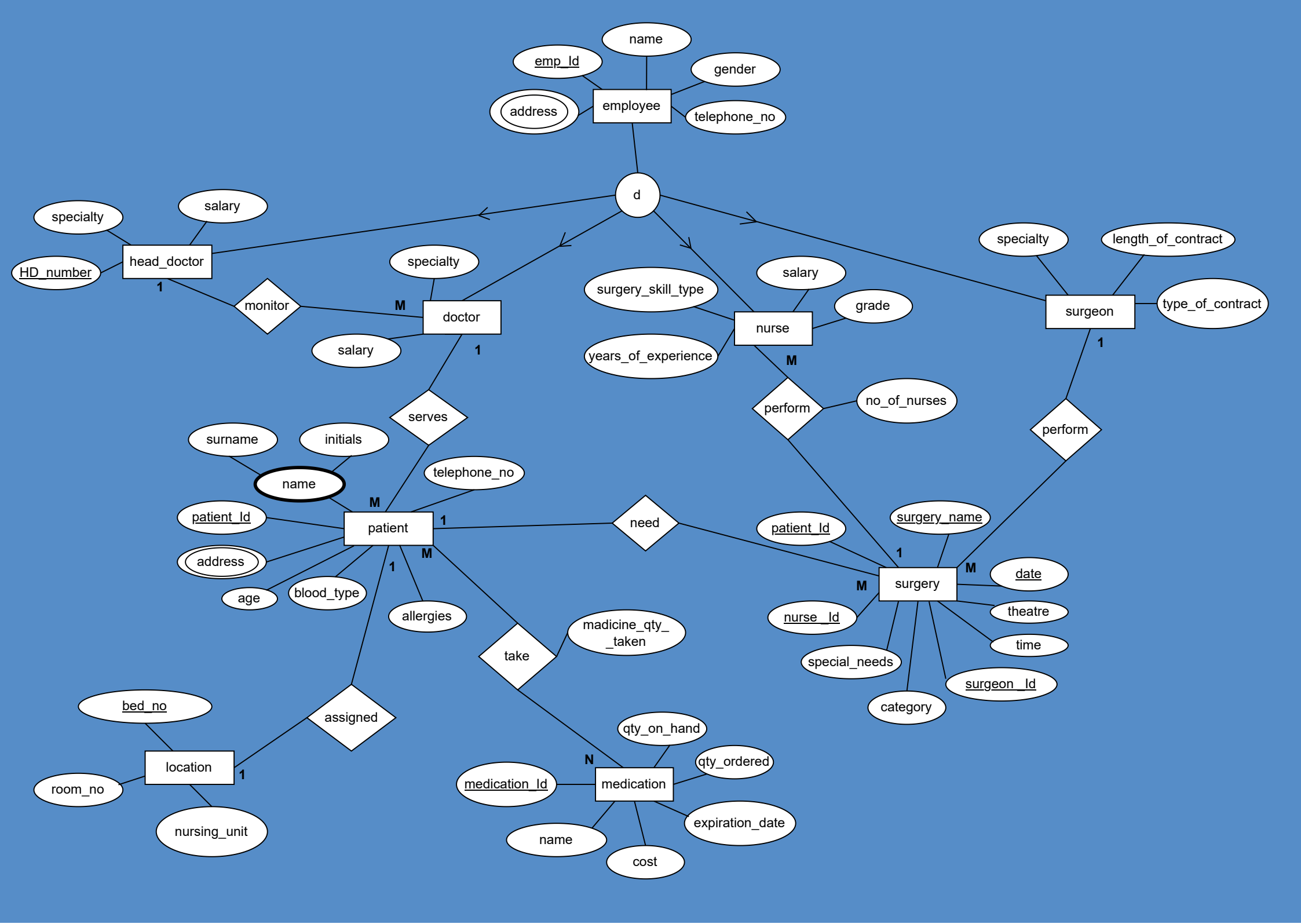
medication_Id	name	cost	expiration_date	qty_ordered	qty_on_hand
3001	Aspirin	10.99	2024-12-31	100	500
3002	Ibuprofen	8.49	2023-10-31	80	200
3003	Penicillin	15.75	2025-06-30	50	150
3004	Acetaminophen	12.25	2024-08-31	120	300
3005	Amoxicillin	18.50	2023-11-30	70	180
NULL	NULL	NULL	NULL	NULL	NULL

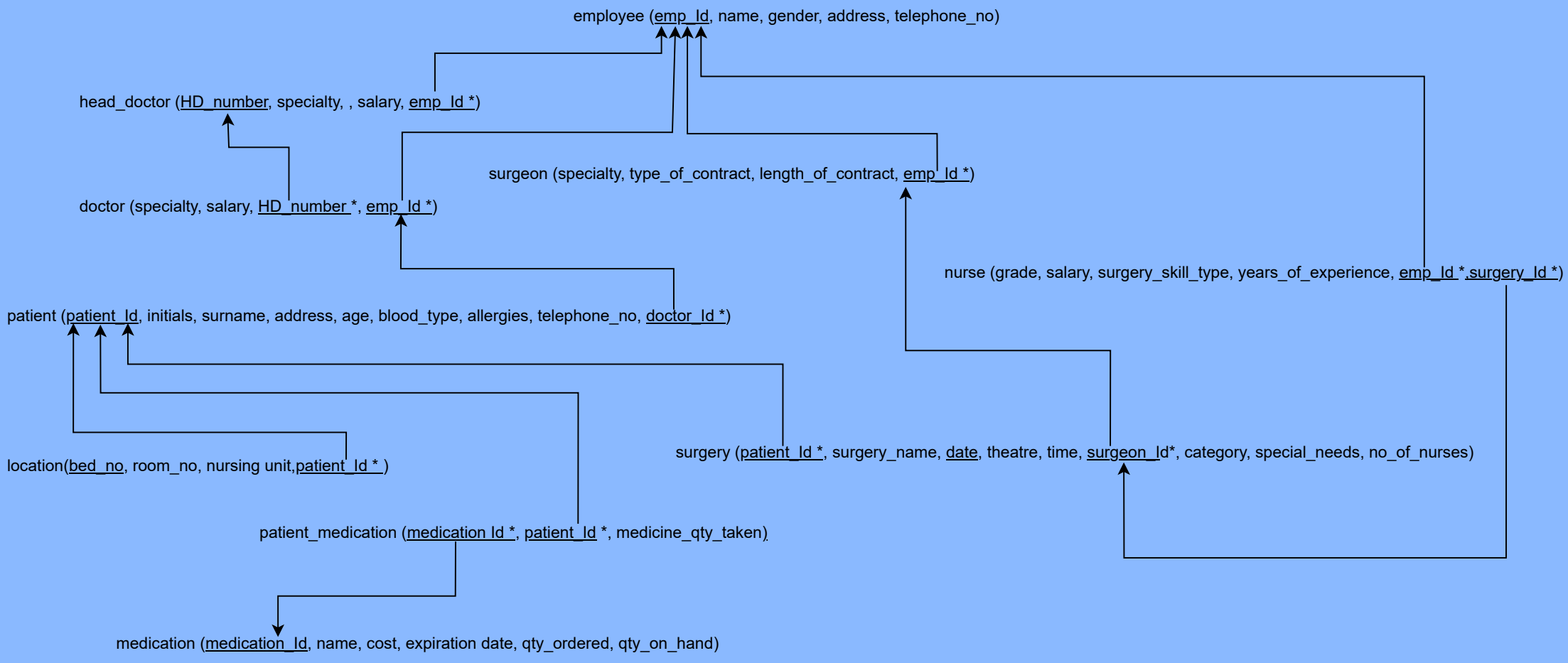
2.15 Patient_medication table

```
210 •   select* from patient_medication;
```

Result Grid | Filter Rows: | Edit:

medication_Id	patient_Id	medicine_qty_taken
3001	1001	2
3002	1002	1
3003	1003	3
3004	1004	1
3005	1005	2
NULL	NULL	NULL


name
emp_Id
gender
address
employee
telephone_no
d
specialty
salary
head_doctor
HD_number
1
monitor
M
doctor
specialty
salary
1
surgery_skill_type
salary
grade
nurse
years_of_experience
M
specialty
length_of_contract
surgeon
type_of_contract
1
perform
no_of_nurses
perform
serves
surname
initials
name
telephone_no
M
patient_Id
patient
1
address
age
blood_type
1
M
allergies
need
take
madicine_qty_
_taken
patient_Id
surgery_name
1
M
surgery
M
date
theatre
time
nurse_Id
special_needs
category
surgeon_Id
bed_no
assigned
location
1
room_no
nursing_unit
N
qty_on_hand
qty_ordered
medication_Id
medication
name
cost
expiration_date


employee (emp_Id, name, gender, address, telephone_no)
head_doctor (HD_number, specialty, , salary, emp_Id *)
surgeon (specialty, type_of_contract, length_of_contract, emp_Id *)
doctor (specialty, salary, HD_number *, emp_Id *)
nurse (grade, salary, surgery_skill_type, years_of_experience, emp_Id *,surgery_Id *)
patient (patient_Id, initials, surname, address, age, blood_type, allergies, telephone_no, doctor_Id *)
location(bed_no, room_no, nursing unit,patient_Id *)
surgery (patient_Id *, surgery_name, date, theatre, time, surgeon_Id*, category, special_needs, no_of_nurses)
patient_medication (medication Id *, patient_Id *, medicine_qty_taken)
medication (medication_Id, name, cost, expiration date, qty_ordered, qty_on_hand)