

Information filled by student:

Course basic information

Code	Course Name	Credit Hours		
		Lecture	Practice	Total
IS212	Database	<u>2</u>	<u>2</u>	<u>3</u>

Research Title

(Clinic Management System)

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System Description

Clinic management system is can manage all data of clinic and store data and make data retrieval easy. The clinic, as we know it, has only one doctor, unlike the hospital, which has many departments and doctors. We can manage all records of all data in many of tables .we will create table for patient, table for examinations, table for medications, table for treatments and table for equipment. In patient table we can manage all patient information, patient identification, first name, last name, gender, age, phone number and address. In examination table we verify the identification number, patient complain, the results of the treatment that is given to the patient, the medicine that is given to the patient, the quantity of medicine that the patient takes, as well as the date the patient undergoes the examination. The table of treatments we verify treatment ID, and type of treatment provided to the patient. The medication table is contains all the medicine record, the medicine ID, the name of the medicine, a description the medicine or active ingredient in this medicine. The

equipment table is contains all the equipment records, and the equipment table contains equipment identification, equipment name, required date and the date of the defected the equipment.

Data Dictionaries

1. patient
2. examinations
3. medicines
4. treatments
5. equipment

1. patient

Filed Name	Data Type	Description	Example
patient_id	int	Unique identifier for a patient. This is a primary key	652
first_name	varchar	First name of patient	Ahmed
last_name	varchar	last name of patient	Maher
gender	varchar	Gender of patient	male
age	int	Age of patient	20
patient_phone	varchar	Patient phone number	01158133773

address	varchar	Address of patient	Edku, El Beheira
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2. examinations

Filed Name	Data Type	Description	Example
examination_id	int	Unique identifier for an examination. This is a primary key	25
patient_id	int	Unique identifier for a patient	524
patient_complains	varchar	Complains of the patient	I feel a stomach ache
equip_id	int	Unique identifier for equipment	7874
treat_id	int	Unique identifier for Treatment	40
med_id	int	Unique identifier for medicine	47071
Quantity	int	quantity of medicine	3
date	datetime	date of check-up	2021-8-7

3. medicines

Filed Name	Data Type	Description	Example
medicine_id	int	Unique identifier for medicine. This is a primary key	84561
medicine_name	varchar	Name of medicine	Panadol
description	varchar	Description of medicine	Active ingredient is 500mg Paracetamol

4. equipments

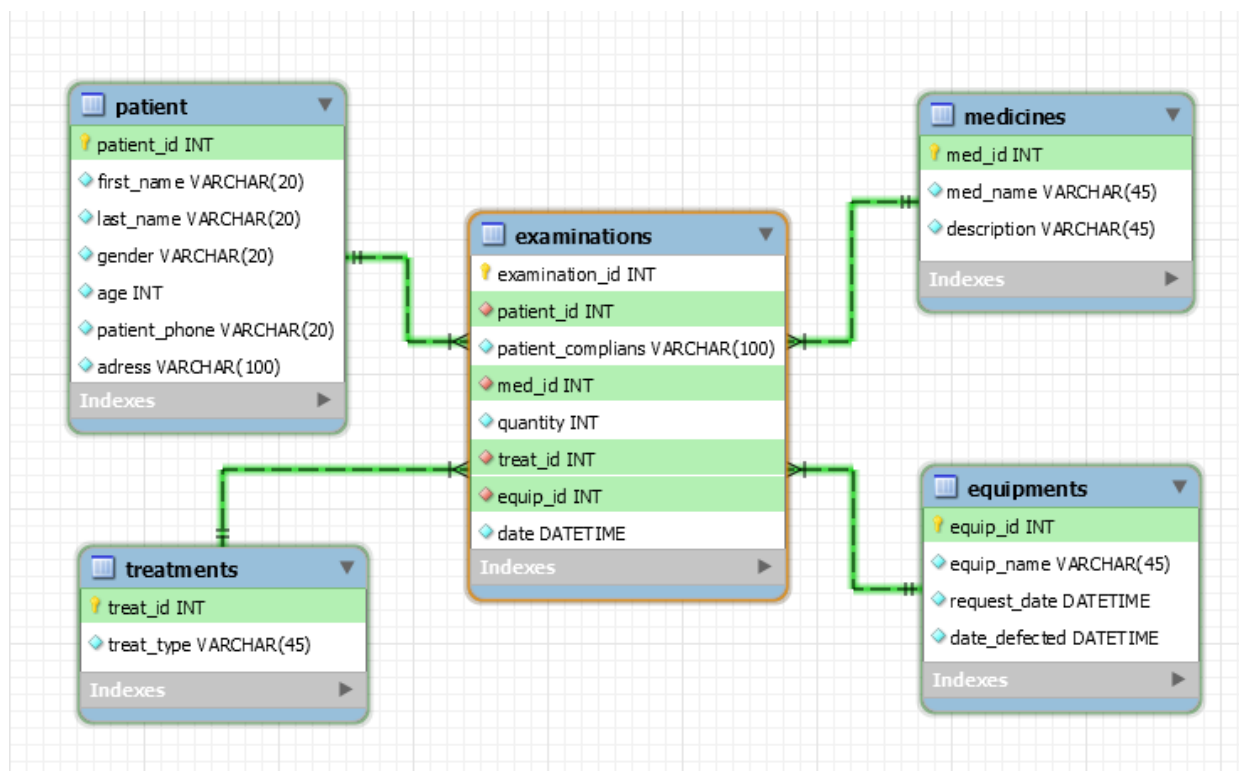
Filed Name	Data Type	Description	Example
equip_id	int	Unique identifier for equipment. This is a primary key	451
equip_name	varchar	Name of equipment	Dental filling device
requested_date	datetime	Date of requested equipment	2020-1-2
date_defected	datetime	Date of defected equipment	2020-4-6

5. treatments

Filed Name	Data Type	Description	Example
treat_id	int	Unique identifier for a treatment. This is a primary key	87
treat_type	varchar	Type of suitable treatment for complains of patient	Needs a physical therapy session

Entity Relationship Diagram (ERD)

This is diagram for Clinic management system explains relations between many tables in data base. Each table explains before this part in Data dictionaries.



Select Statements using Different Functions

- 1) How many patients is ID greater than 1?**
 - `SELECT count(*) FROM clinic.patient where patient_id>1;`

- 2) What is the last hostile patient in the examinations?**
 - `SELECT max(date) from clinic.examinations ;`

- 3) What is the sum of the initial amount in the vesicles?**
 - `SELECT sum(quantity) from clinic.examinations;`

- 4) What is the smallest ID in treatments?**
 - `SELECT min(treat_id) FROM clinic.treatments;`

- 5) Who is patient ID who is greater than 3?**
 - `SELECT * FROM clinic.patient where patient_id>3;`

- 6) What are the equipments that were requested after 1-1-2020?**
 - `SELECT * FROM clinic.equipments where request_date >'2020-01-01';`

- 7) What is the average quantity of medicines in the examinations?**
 - `SELECT avg(quantity) from clinic.examinations;`

- 8) What equipments have defected before 7-7-2028?**
 - `SELECT * FROM clinic.equipments where date_defected < '2028-7-7';`

9) How many treatment types?

➤ SELECT count(treat_type) FROM clinic.treatments ;

10) What is the sum of treatments ID?

➤ SELECT sum(treat_id) FROM clinic.treatments ;

11) Who are the male patients?

➤ SELECT * FROM clinic.patient where gender='male';

12) How many examinations were performed?

➤ SELECT count(*) from clinic.examinations;

13) What the treatment ID that are greater than 4?

➤ SELECT * FROM clinic.treatments where treat_id >4;

14) What treatments are these rest for a month'?

➤ SELECT * FROM clinic.treatments where treat_type ='Rest for a month';

15) What is the last date to the examination and details of the examination?

➤ SELECT *, max(date) from clinic.examinations ;

16) What is the smallest age of patients?

➤ SELECT *, min (age) from clinic.patient;

17) What is greater treatment ID?

➤ SELECT max(treat_id) FROM clinic.treatments ;

18) What examinations are the patient complains feel a headache?

- SELECT * FROM clinic.examinations where patient_complains='I feel a headache';

19) What examinations is examination ID greater than 3?

- SELECT * from clinic.examinations where examination_id >3;

20) How many drugs are called Panadol?

- SELECT count (*) FROM clinic.medicines where med_name='panadol';

Select Statements using Sub Query

- SELECT * FROM clinic.treatments where treat_id in (SELECT treat_id FROM clinic.examinations where med_id >2);
- SELECT * FROM clinic.patient where patient_id in (SELECT patient_id FROM clinic.examinations where age =20);
- SELECT * FROM clinic.medicines where med_id in (select med_id from clinic.examinations where quantity>5);

Select Statements using Count and Group Functions

- SELECT count(*) from clinic.equipments;
- SELECT equip_id,request_date from clinic.equipments group by equip_id;

Select Statements using Different Joins

- `SELECT * FROM clinic.medicines left join clinic.examinations on clinic.medicines.med_id=clinic.examinations.med_id where patient_id>2 ;`
- `SELECT * FROM clinic.patient left outer join clinic.examinations on clinic.patient.patient_id=clinic.examinations.patient_id where patient_complains='I feel a headache' ;`
- `SELECT * FROM clinic.medicines inner join clinic.examinations on clinic.medicines.med_id=clinic.examinations.med_id where date='2020-01-04' ;`
- `SELECT * FROM clinic.equipments inner join clinic.examinations on clinic.equipments.equip_id=clinic.examinations.equip_id where quantity<8 ;`
- `SELECT * FROM clinic.medicines left join clinic.examinations on clinic.medicines.med_id=clinic.examinations.med_id where examination_id =5;`

Insert Statement

- `insert into patient values (8,'ahmed','maher','male',20,'01158133773','edku');`
- `insert into medicines values (7,'panadol','Active ingredient is 500mg Paracetamol');`
- `insert into treatments values(8,'Rest for a week');`
- `insert into equipments values (9,'Blood pressure device','2020-7-1','2025-8-2');`
- `insert into examinations values(8,6,'I feel a headache',6,5,6,6,'2020-6-6');`

Update Statement

- update medicines set med_name='adol' where med_id=5;
- update patient set last_name='mohamed' where patient_id=7;
- update examinations set quantity=2 where treat_id=3;
- update treatments set treat_type='Rest for a 3 days' where treat_id=2;
- update equipments set equip_name='Blood Glucose Monitor' where equip_id=8;

Delete Statement

- delete from patient where patient_id=8;
- delete from equipments where equip_id=4;
- delete from treatments where treat_id=3;
- delete from medicines where med_id=2;
- delete from examinations where examination_id=5;

References

- <https://www.codeproject.com/Articles/5164696/What-is-a-SQL-Server-Data-Dictionary>
- <https://www.smartdraw.com/entity-relationship-diagram/>
- <https://www.javatpoint.com/mysql-tutorial>
- <https://www.w3schools.com/sql/default.asp>
- <https://www.tutorialspoint.com/sql/sql-group-by.htm>

GitHub Repository Link

<https://github.com/ahmedmaherzaitoun/database>