Principle of Software Engineering

COMP-1821

eConsult.net

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PIE, AND DEALS VOLUME.

GROUP IMPROVEMENT: UPGRADE OUTREACH GROUP ABILITIES AND EFFICIENCY THROUGH CUSTOM FITTED PREPARATION, TUTORING, AND STANDARD EXECUTION ASSESSMENTS.

- AIMING TO SMOOTH OUT TASKS TO BOOST EFFECTIVENESS AND DECREASE POINTLESS EXPENSES, GUARANTEEING IDEAL ASSET USE.

I WANT TO EXECUTE PROCEDURES THAT RELIABLY INCREMENT INCOME WHILE KEEPING UP WITH BENEFIT AND MARKET SERIOUSNESS.

OBJECTIVE IS TO CEASELESSLY RAISE THE CLIENT EXPERIENCE, GUARANTEEING FULFILLMENT AND DEVOTION THROUGH EACH ASSOCIATION WITH OUR ITEMS, ADMINISTRATIONS, AND BRAND.

STORE IT TO THE SPECIFIC PATIENT

CAN SEE THE HISTORY OF THE PATIENT

EASILY CONTACTABLE

WOULD BE LESS TIME CONSUMING FOR THEM

SALES DIRECTOR

MR MORRISON

MANAGING DIRECTOR

CONFLICT BETWEEN THEIR GOALS WITH BUDGET RESTRAINTS

SALES REPRESENTATIVES

GP PRACTICE STAFF

TECHNOLOGY

MIGHT NOT KNOW HOW TO ACCESS THE INTERNET

ISSUES WITH THE SYSTEMS?

HOW WOULD I DEAL WITH CUSTOMERS ONLINE AND IN THE GP

ECONSULT GIVES A HELPFUL WEB-BASED STRATEGY TO INTERFACE WITH YOUR NHS GP PRACTICE AT NO EXPENSE, OFFERING ACCESS FROM ANYPLACE AND WHENEVER YOU"RE ON THE WEB.

MAKING BOOKING WITH GP EASIER

SCHEDULING WITH DOCTORS MORE AFFORDABLE AND LESS TIME CONSUMING

FEEDBACK

PATIENTS

DEVELOPERS

CALL STAFF

HOW TO COMMUNICATING

WHAT ARE THESE SYMPTOMS?

DO USING ECONSULT

PROBLEM

- Patients should see the real-time of their requested doctor and how much time should they wait for the review.
- Not every patient is given equal priority. Those who need immediate medical treatment should be the first priority.
- They should have access to their medical history.
- Users should have different time slots for doctor availability so; they can choose the best time for them. Not just these, they can avoid activating other services.
- Strong security is required on this app to safety of patient data and medical histories for the eConsult system.

We need to ensure patient satisfaction. By that patients can get better healthcare outcomes. The online platform is the crucial point that connects the patients and doctors. There is a range of features such as patient, GP practice, doctor, GP, request, and consultation.

PROCESS

Scrum

Waterfall Model

Waterfall Model

Advantages

- Stakeholder's requirements involvement at the beginning and end of the project.
- To run this methodology, the users must give clear requirements. eConsult system requirements are well defined.

Disadvantages

- The waterfall model does not have flexibility. They took feedback late so; it is bad for users and doctors.
- The waterfall model is rigid. There is no feedback from one stage to another. To deliver an eConsult system on perfect time that's not suitable.
- Actual costs had to be calculated on the last. So, the budget is fixed that's why owner cannot go over on this budget.
- There are no modifications on late. Users must give their opinions what they want on an eConsult system.

Scrum

Advantages

- The main advantage of agile methodologies like Scrum is flexibility and adaptability. Where eConsult users may need to evolve.
- Scrum methodology can change their requirement at any time. So, users can add their perspective and the owner. That is why they can improve their system.
- Reduce the development time by up to 40%. Because scrum do their work by following their sprint. eConsult system can deliver on perfect time.

Disadvantages

- If any team member leaves in the middle of the project, it will be a huge negative impact for the eConsult system to build up.
- It is not perfect for the big team to build up like this big project.
- Daily meetings will be frustrating for team members.
- All the team members must be committed to the project.

In conclusion, Scrum Agile is a popular software development methodology that is popular for its flexibility and adaptability. Scrum Agile ensures that the software meets with the users and is high quality for users. Not just these, it is iterative and incremental. But also, Scrum will detect risk. So, there will be not a single minute delay on the specified deadline. That is why we are using Scrum.

PROJECT

Positions	Budget (£800,000)
Software Developer (Tanzim)	£400,000
Project Manager (Mohammed)	£200,000
Quality Insurer (Danny)	£100,000
Infrastructure and IT (Mahmoud)	£100,000

PRODUCT

Mobile App Extension

- **User-Friendly Design:** The application will have an easy-to-use design that makes it simple for patients to go through.
- **Cross-Device Accessibility:** The application will be created to work flawlessly across a range of gadgets, such as desktop computers, tablets, and smartphones.

Training and Support

- **Patient Support:** Easily accessible chat assistance, comprehensive FAQs, and specific phone numbers for patients.
- **Staff Training:** Comprehensive training for medical professionals, nurses, and administrators.

Features

- **Real-Time Status Updates:** These updates give patients peace of mind and increase process transparency by giving them real-time information on how their consultation is going.
- **Patient Preferences:** Patients have control over their contact with healthcare providers by choosing the doctor they see fit, the time of their visit, and the style of consultation (in-person or online).

PEOPLE

Mohammed — Oversaw the analysis process and recognised the flaws in the current app. → Mr. Felix (General Director)

Tanzim — Controlled the project's budget and schedule while allocating duties and resources.

Dani — Oversaw the development team and wrote and improved the source code for the application. → Mr. Morrison (Sales Director)

Mahmoud — Controlled the project's budget and schedule while allocating duties and resources. → Sales Representative

FUNCTIONAL REQUIREMENTS

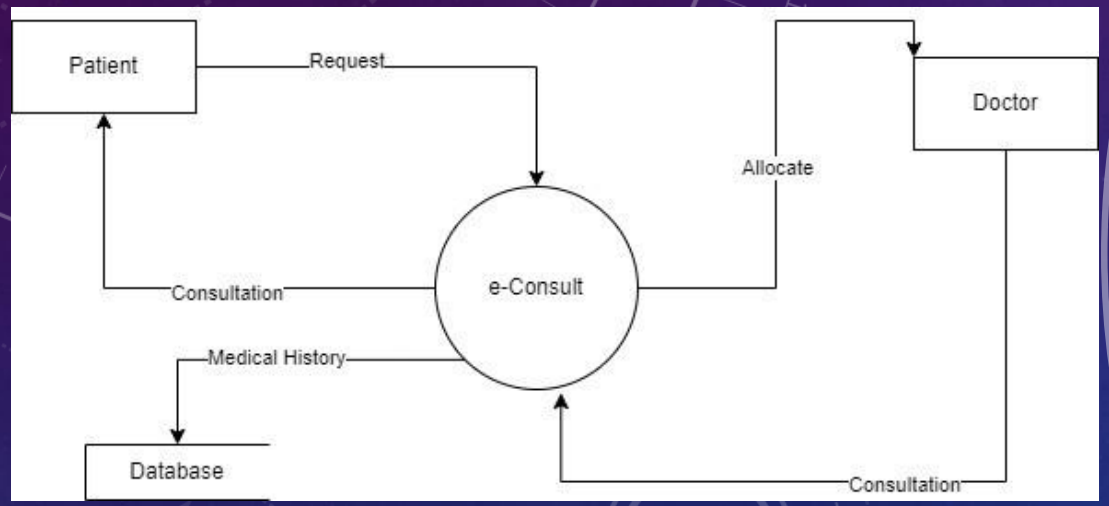
Time:	Enhance the user experience by improving delays and inefficiency.
Status:	The eConsult system has a feature that patients can see the status of a doctor and the information should be given to them in too timely.
Priority:	The eConsult system has a priority queuing system so, that in case of an emergency, patients can have the priority for medical treatment.
History:	The eConsult system has a feature like patients can see their medical history.
Various Time Periods:	Provide patients with different time slots for consultation and doctor's availability.
Improvement Chart:	Patient can see the improvement chart for their improvement of the treatment.
Discussion for Users:	The eConsult should has their own consultation option for users.
Disease List:	The eConsult system should have all the health disease like A to Z.
Reviews:	The eConsult system should have option for users to give reviews and ratings for doctors.

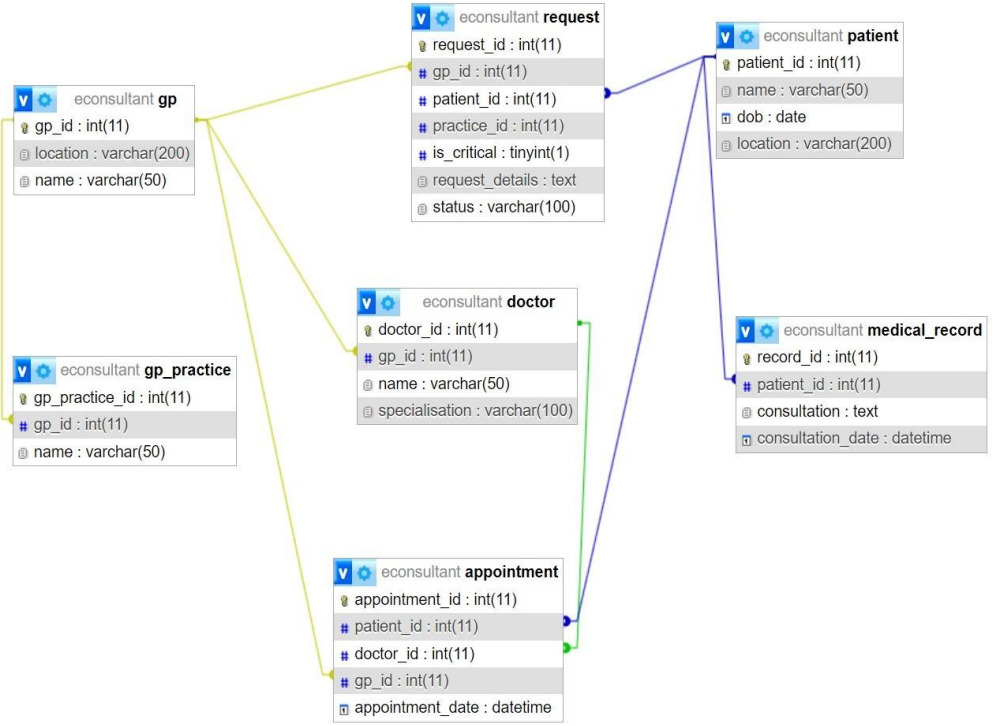
NON-FUNCTIONAL REQUIREMENTS

Security:	Strong security for patient information and medical records. But also, confidential medical records.
User Satisfaction:	The eConsult system is user-friendly it is easy to use. So, users will be satisfied by using this platform.
Performance:	Ensure that increased users will not affect the performance.
Reassurance:	Ensure the user's trust by giving them the best security for their details.
Authentication:	Verifying the regulation of the eConsult system by trusting them.
Cost:	eConsult system should have his own maintenance cost.

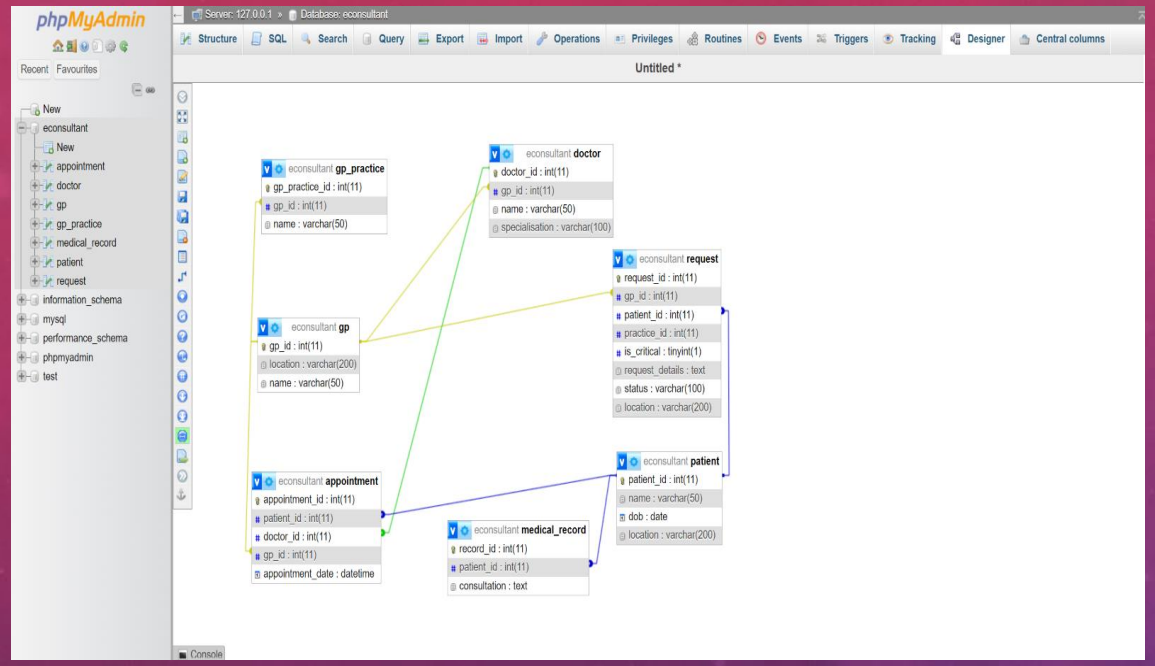
ENTITY RELATIONSHIP DIAGRAM

DATA FLOW DIAGRAM





SQL DATABASE



SQL QUERIES

```sql
insert into patient (name, dob)
Values ('Mahmoud Alkawareet', '2003-02-15')

UPDATE patient
set location = '17 mapeshill place, London, nw25la'
WHERE patient_id = 1

DELETE from patient
where patient_id = 1

INSERT into gp (location, name)
VALUES ('51 Staverton Rd, London NW2 5HA', 'Staverton Surgery')

INSERT into doctor (gp_id, name, specialisation)
VALUES (1, 'Mohammad', 'heart')

INSERT into gp_practice (gp_id, name)
VALUES (1, 'Omar')

INSERT into request (gp_id, patient_id, practice_id, is_critical, request_details, status, location)
VALUES (1, 2, 1, false, 'I have a headace', 'In progress', '17 mapeshill place, London, nw25la')

INSERT into appointment (patient_id, doctor_id, gp_id, appointment_date)
VALUES (2, 1, 1, '2023-12-05 14:30:00')
```

1.Add patient to the system

Patient table before adding patient

	patient_id	name	dob	location
Edit Copy Delete	2	Mahmoud Alkawareet	2003-02-15	17 mapeshill place, London, nw25la

Check all *With selected:* Edit Copy Delete Export

SQL QUERY:

1 row inserted.
Inserted row id: 4 (Query took 0.0007 seconds.)

```sql
INSERT into patient (name, dob, location) VALUES ('Mohammad', '2003-02-23', 'London');
```

PATIENT TABLE AFTER ADDING PATIENT:

	patient_id	name	dob	location
Edit Copy Delete	2	Mahmoud Alkawareet	2003-02-15	17 mapeshill place, London, nw25la
Edit Copy Delete	4	Mohammad	2003-02-23	London

Check all *With selected:* Edit Copy Delete Export

2.Update patient details
SQL Query to update location of patient :

```
UPDATE patient
SET location = 'GreenWhich'
WHERE patient_id = 4
```

Patient details after update application:

	patient_id	name	dob	location
Edit Copy Delete	2	Mahmoud Alkawareet	2003-02-15	17 mapeshill place, London, nw25la
Edit Copy Delete	4	Mohammad	2003-02-23	GreenWhich

Check all *With selected:* Edit Copy Delete Export

4.Add an appointment

	appointment_id	patient_id	doctor_id	gp_id	appointment_date
Edit Copy Delete	2	2	1	1	2023-12-05 14:30:00

Check all *With selected:* Edit Copy Delete Export

```
INSERT INTO appointment (patient_id, doctor_id, gp_id, appointment_date)
VALUES (2, 1 ,1 ,'2023-12-06 02:20:00')
```

	appointment_id	patient_id	doctor_id	gp_id	appointment_date
Edit Copy Delete	2	2	1	1	2023-12-05 14:30:00
Edit Copy Delete	3	2	1	1	2023-12-06 02:20:00

Check all *With selected:* Edit Copy Delete Export

3.Delete patient details:
SQL Query to delete patient details

```
DELETE from patient
WHERE patient_id = 4
```

Patient table after deleting patient details:

	patient_id	name	dob	location
Edit Copy Delete	2	Mahmoud Alkawareet	2003-02-15	17 mapeshill place, London, nw25la

Check all *With selected:* Edit Copy Delete Export

5.Appointment status

```
SELECT status FROM request WHERE request_id = 1;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

	status
Edit Copy Delete	In progress

6.History of all appointments of a patient

```
SELECT patient_id, name, appointment_date from appointment join gp on appointment.gp_id = gp.gp_id WHERE patient_id = 2;
```

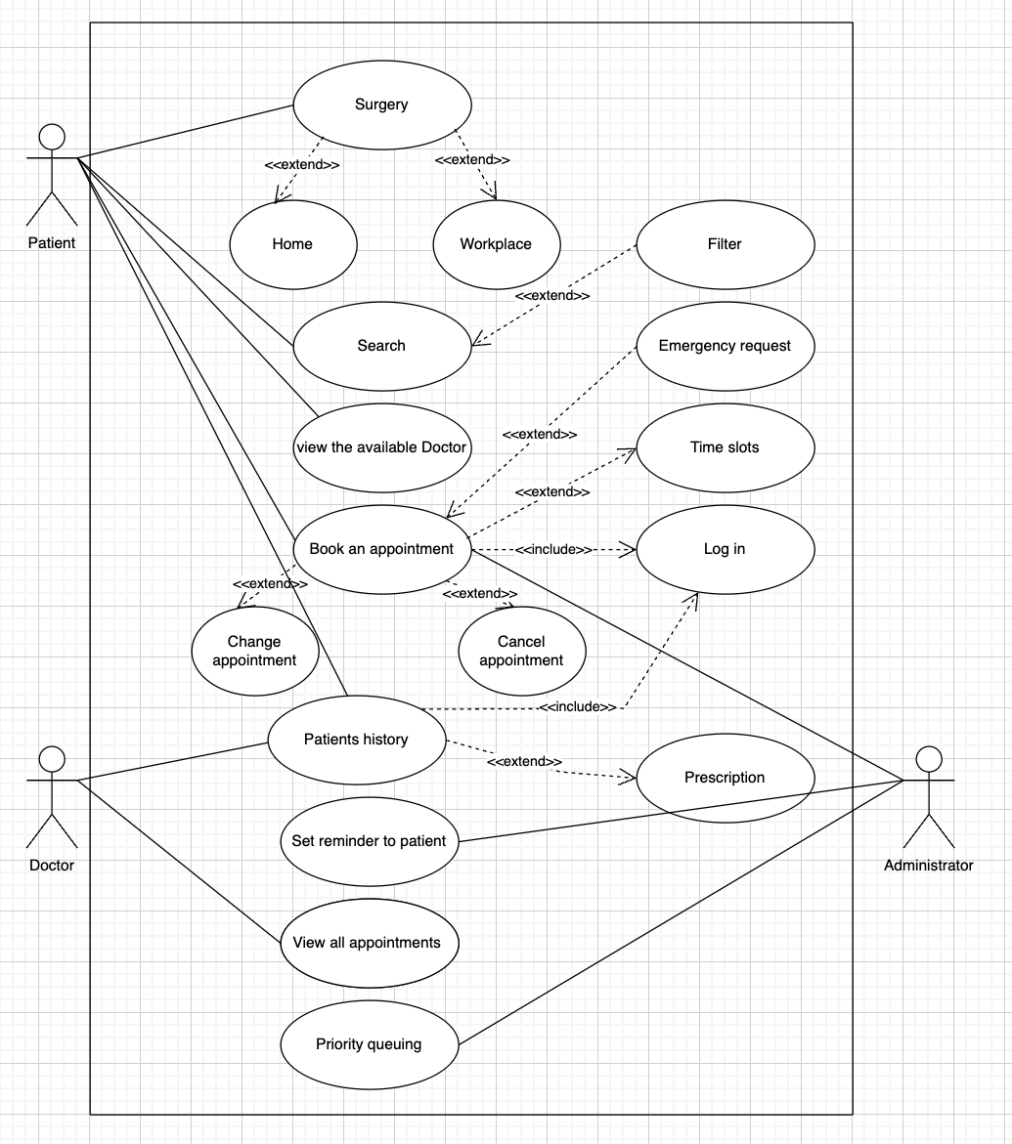
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

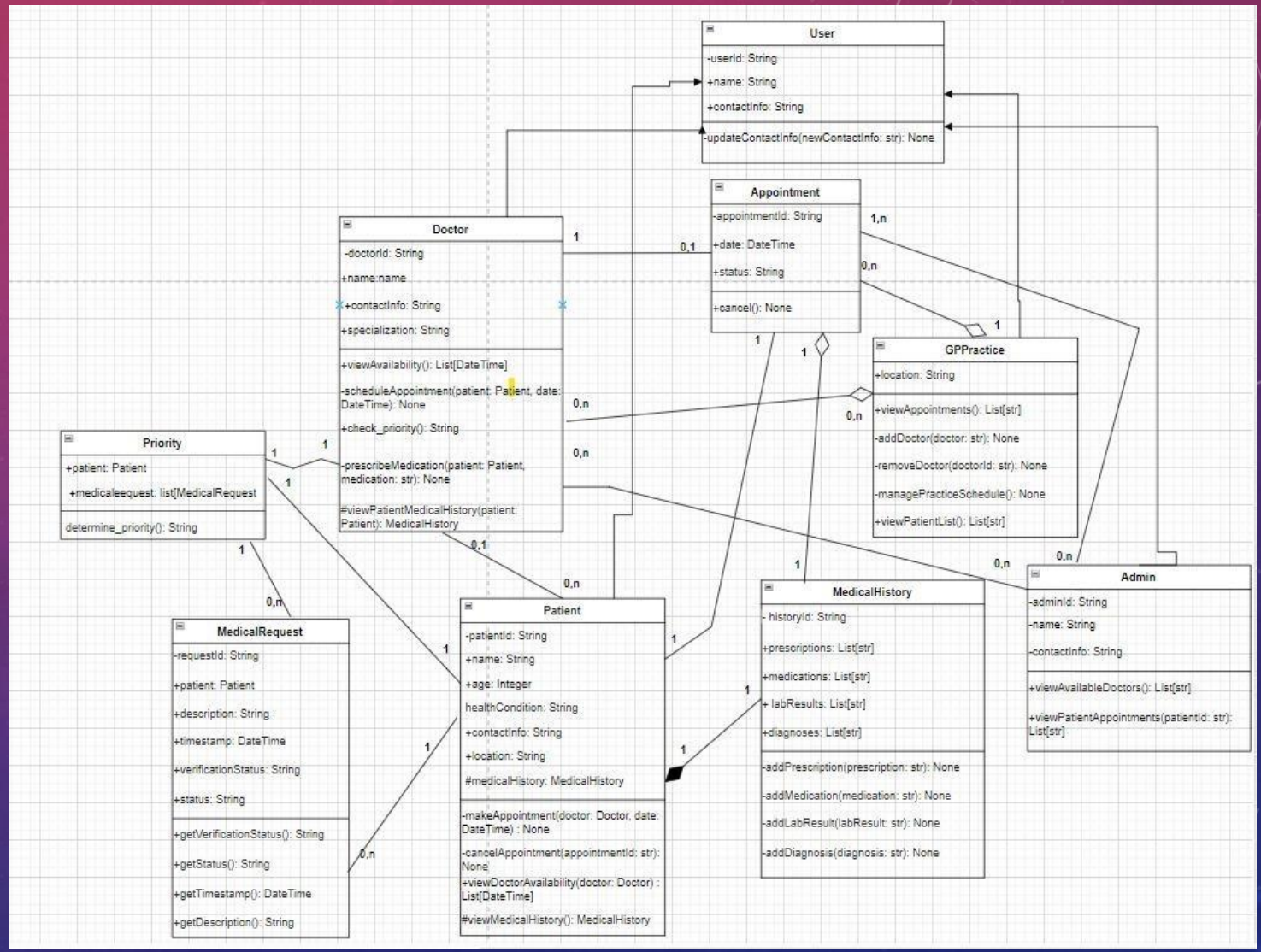
Extra options

patient_id	name	appointment_date
2	Staverton Surgery	2023-12-05 14:30:00
2	Staverton Surgery	2023-12-06 02:20:00

USE CASE DIAGRAM



DESIGN CLASS DIAGRAM



SEQUENCE DIAGRAM