Hospital Appointment Management System (HAMS)

1.Business Type

- Computer or web-based system
- Facilitate managing the functionality of hospital
- Integrate all the information regarding patients, doctors, nurse, staff, hospital administrative details etc.

2.Requirements

- Admissions
- Doctor appointments
- Test appointment
- Login
- Add doctor/staff
- Delete doctor/staff
- Edit doctor/staff
- Patient information

3.Functional Requirements

- Adding patients
- Assigning an ID to each patient
- Deleting patient ID
- Adding appointments
- Deleting appointments
- Checking information of patients
- Updating information of patients

Non-functional Requirements

- **Security** - checking patient identification, login ID, modification, front desk staff rights, administrator rights
- **Performance** – response time, capacity, user-interface, conformity
- **Maintainability** – back-up, errors
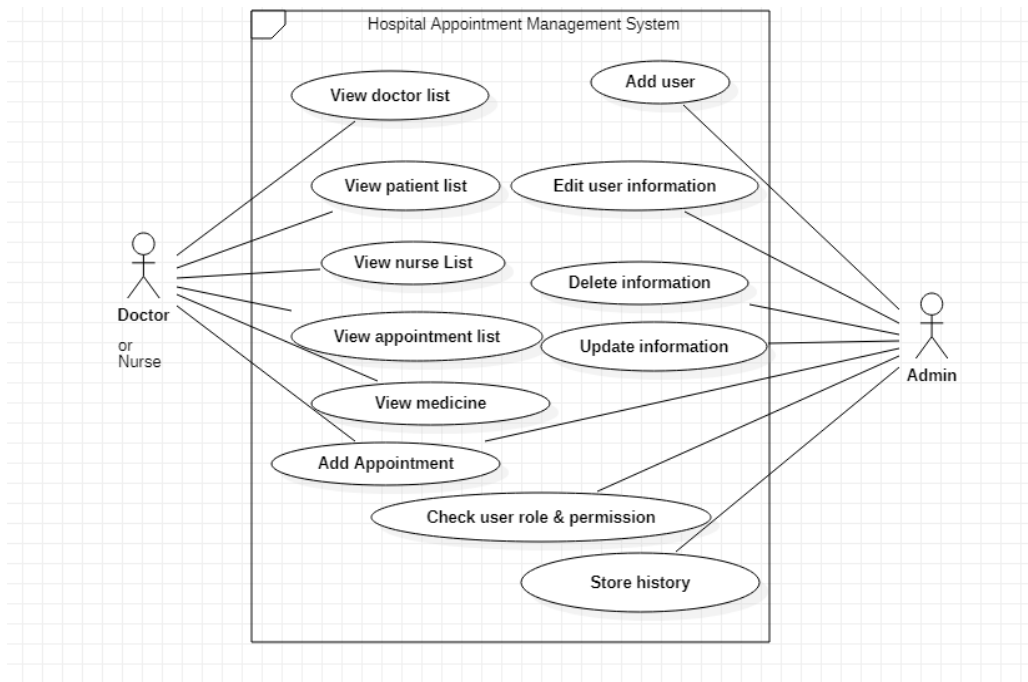- **Reliability** – availability

4.Use Case Diagram

Fig. Use case diagram

5.Database

Hospitals	Patients	Doctors	Nurses	Appointments	Medicine
hospital_id	patient_id	doctor_id	nurse_id	appointment_id	medicine_id
hospital_name	patient_name	doctor_name	nurse_name	appointment_description	medicine_name
hospital_type	patient_mobile	doctor_department	nurse_duty_date	appointment_number	medicine_company
hospital_description	patient_address	doctor_mobile	nurse_mobile	appointment_date	medicine_cost
hospital_address	patient_blood_group	doctor_address	nurse_address	appointment_doctor_id	medicine_type
	patient_disease	doctor_duty_date	nurse_duty_hours	appointment_patient_id	medicine_description
	patient_dob	doctor_duty_hour	nurse_department	appointment_nurse_id	medicine_expiry_date
	patient_medicine_id				medicine_manufacturing_date

User		Role	Permission	Admin	
user_id		role_id	permission_id	admin_id	
user_name		role_title	permission_title	admin_name	
user_email		role_description	permission_module		
user_password			permission_description		
user_address			permission_role_id		
user_role_id					

Fig. Database table

6. ERD Diagram
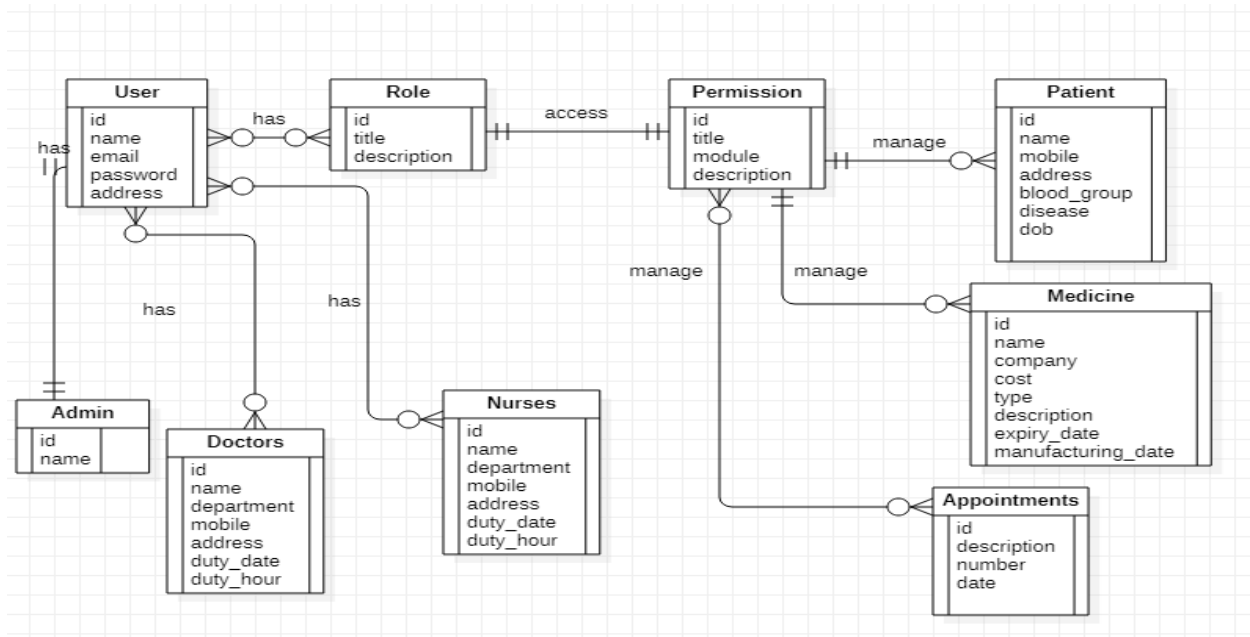
Fig. ERD diagram

7. User Interface Design

Fig. Login page

Fill your information & sign in for free!!!

User Name:

Email:

Address:

Password:

Sign in

Fig. Sign in page

View the Lists!!!

Doctor Lists

Patient Lists

Nurse Lists

Medicine Lists

Back

Fig. View the lists page

Fig. Create appointment page

Fig. choose doctor, department and Date for appointment page

Doctor Lists

Id	Name	Department	Address	Mobile Phone	Date	Time
0001	Prof. U Mya Aye	Heart	Alone	09-123456	Mon,Fri	8-10AM
0002	Dr. Daw Hla Hla	General disease	La Thar	09-345678	Sat,Sun	9-11AM

Fig. Doctor lists page

Patient Lists

Id	Name	Date of birth	Address	Mobile Phone	Disease	Blood	Medicine
3001	Daw Aye	10.12.93	Hlaing	09-120987	General disease	A	3,9,55
3002	Daw Win Win	2.5.88	San Chaung	09-456732	Heart	B	4,1,8,53

Fig. Nurse lists page

Patient Lists

Id	Name	Date of birth	Address	Mobile Phone	Disease	Blood	Medicine
3001	Daw Aye	10.12.93	Hlaing	09-120987	General disease	A	3,9,55
3002	Daw Win Win	2.5.88	San Chaung	09-456732	Heart	B	4,1,8,53

Fig. Patient lists page

Medicine Lists

Id	Name	Company	Expire date	Manufacture date	Description	Cost	Type
1	B2	BPI	9.2.22	9.2.20	General disease	A	vitamin b
2	c vit	BPI	8.9.23	8.9.20	Heart	B	vitamin c

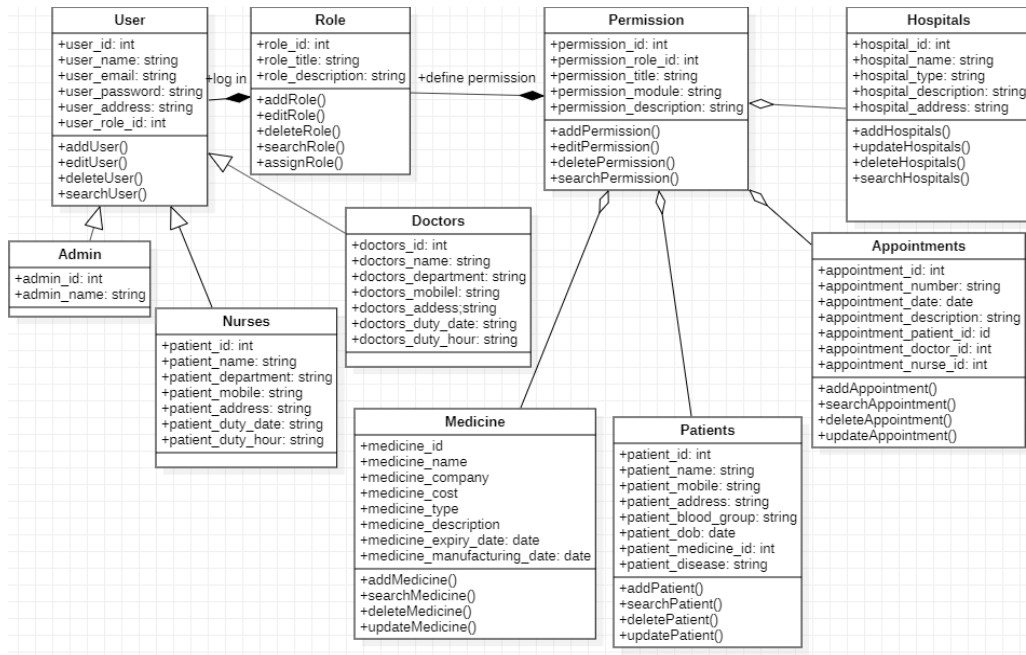Fig. Medicine lists page

8.Class Diagram

Fig. Class diagram

9.Test case & Test plan

- ➢ Verify that the portal for new patient registration has all the mandatory fields required for registering a patient.
- ➢ Verify that after filling the patient details.
- ➢ Verify the information like patient details, doctor assigned, department, the application number etc.
- ➢ Verify that after patient check-up based on the requirement the details are updated in the patient details database.
- ➢ Verify that for existing patients based on the application number of the patient, their records are added/updated in the database.
- ➢ Verify that the system has an admin for doctors as well.
- ➢ Verify that for each doctor's details like their timings, specialty, patient visited etc is visible to the authorized users.
- ➢ Verify that new details of new doctors can be added to the system.
- ➢ Verify that the details of existing users can be updated in the system.
- ➢ Verify that the doctor's record can be deleted from the system.
- ➢ Verify that the admin has the record of all the patients, nurses and doctors and the same gets updated when used or added to the system.
- ➢ Verify that the admin has a record of appointments availability and the same gets updated.

Client-Server Architecture

➢ The information system for a single hospital is best built around a Multi-tiered Client-Server Local Area Network (LAN) architecture. By this, it is meant that users enter and retrieve data using clients i.e. computers with display monitors and data input devices such as keyboard and mouse, obtain various applications software from the Application server and store the data via the Storage server into Storage devices (hard disks). All the tiers are linked through a network consisting of cables joined by switches and routers. Part of the network can also be wireless. A typical HMS System Architecture implementation is shown below:
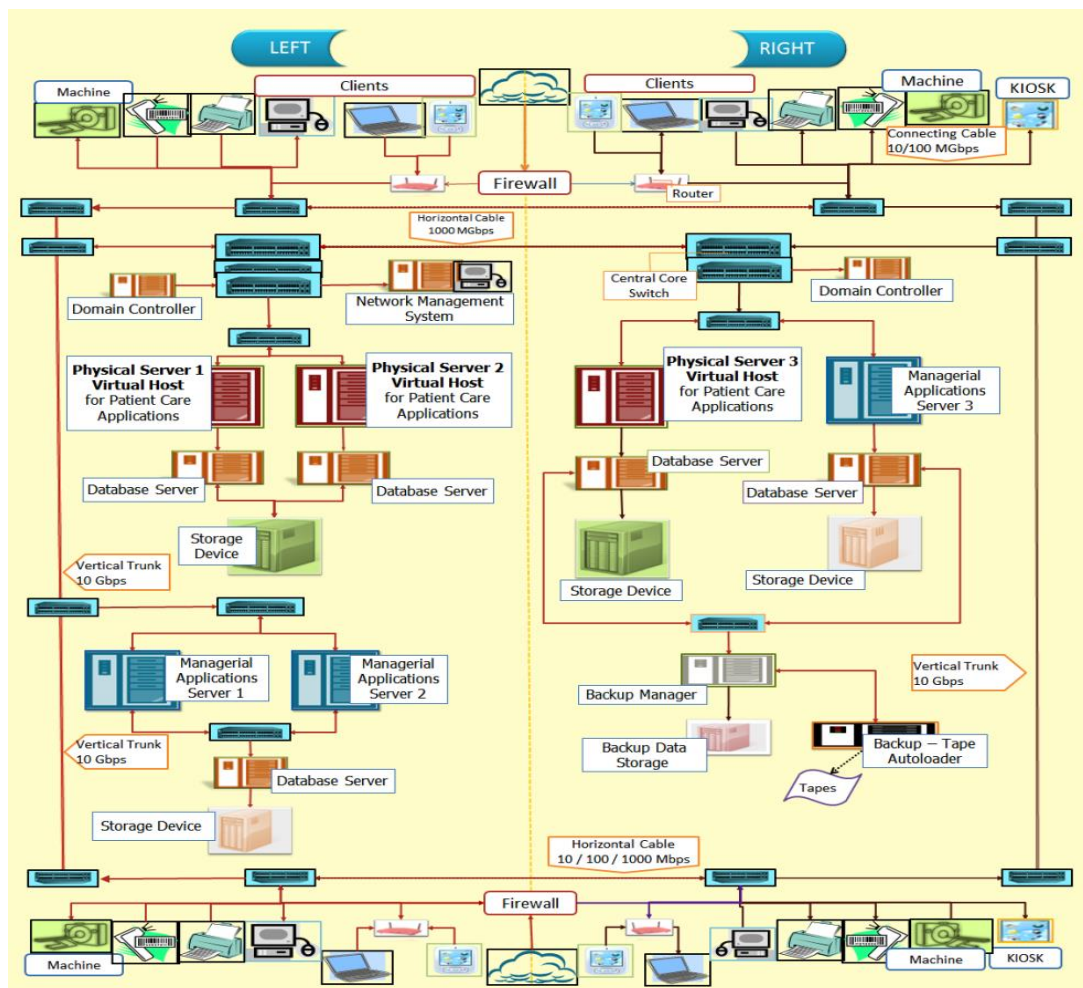

Fig. HAMS system architecture

➢ If the HAMS is to be shared at locations that are far apart, then a wide area network perhaps using secured internet connections may be used. The client is the computer that provides the interface between the user and the system. It is equipped with:

➢ A sufficiently fast processor

➢ Sufficient ready access memory (RAM) to retain data temporarily while being viewed or entered

➢ A display monitor for viewing both applications and data.

- Data input tools such keyboard, bar-code reader and image scanners and pointing devices e.g. mouse
- A front-end Operating system (OS) that allow all the above hardware to function and to facilitate interaction with the server
- Video/graphic cards for locations where complex images are used