

Assignment 1  
**Design and Development of a Health Management Information System (HMIS)**  
SOEN 6461 Winter 2025

**Group – 7**

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**Requirements**

**Functional Requirements:**

**1. Patient Management Module**

This module handles all patient-related activities, from registration to maintaining patient records.

Key Functionalities:

Patient Registration:

- Add new patients to the system.
- Generate a unique Patient ID.
- Store personal and medical details.

Patient Records Management:

- Update patient information (e.g., contact details, medical history).
- View patient history (appointments, prescriptions, bills).

Patient Search:

- Search for patients by name, ID, or contact details.

**2. Appointment Management Module**

This module manages the scheduling, rescheduling, and cancellation of appointments.

Key Functionalities:

Appointment Scheduling:

- Schedule appointments for patients with doctors.
- Check doctor availability.

Appointment Reminders:

- Send reminders to patients about upcoming appointments.

Appointment Rescheduling/Cancellation:

- Allow patients or receptionists to reschedule or cancel appointments.

### 3. **Billing and Payment Module**

This module handles all billing and payment-related activities.

Key Functionalities:

Invoice Generation:

- Generate invoices based on services provided.

Payment Processing:

- Record payments made by patients.

Receipt Generation:

- Generate receipts for successful payments.

Billing History:

- Maintain a history of all bills and payments for each patient.

### 4. **Pharmacy and Drug Management Module**

This module manages the pharmacy's drug inventory and prescriptions.

Key Functionalities:

Drug Inventory Management:

- Add, update, and delete drugs in the inventory.
- Track drug quantities and expiry dates.

Prescription Management:

- Issue prescriptions to patients.
- Track prescribed drugs and dosages.

Drug Search:

- Search for drugs by name or ID.

### 5. **Staff Management Module**

This module manages the hospital's staff, including receptionists, administrators, and billing staff.

Key Functionalities:

Staff Registration:

- Add new staff members to the system.
- Assign roles and permissions.

Staff Scheduling:

- Manage staff schedules and shifts.

Staff Search:

- Search for staff by name, role, or ID.

### 6. **Doctor Management Module**

This module manages doctor-related activities, including their schedules and specialties.

Key Functionalities:

Doctor Registration:

- Add new doctors to the system.
- Store doctor details (e.g., name, specialization, contact information).

Schedule Management:

- Manage doctor availability and schedules.

Doctor Search:

- Search for doctors by name, specialization, or availability.

## **Non-Functional Requirements:**

1. **Performance:** Support up to 1000 concurrent users without significant performance degradation.
2. **Availability:** Ensure 99.9% uptime during operational hours.
3. **Usability:** Intuitive UI to minimize training needs for hospital staff.
4. **Scalability:** Ability to accommodate future expansions in users and functionalities.
5. **Security:** Compliance with HIPAA regulations, role-based access control, and secure data encryption.