**Summary of Hospital Management System**

The Hospital Management System is a software application designed to enhance the interaction between patients and clinics. It enables patients to search for clinics by specialty, check doctor availability, make reservations, and manage their medical records. This system simplifies healthcare management by providing easy access to necessary services for patients and allowing doctors to efficiently document patient visits.

**User and Entity Details**

* **User Information**: Includes SSN, gender, email, phone number, Address, and date of birth.
* **Patient Details**: contains patient ID , Fname , Lname.
* **Clinic Information**: Contains clinic ID, name, phone number, and Specialization.
* **Doctor Information**: Includes doctor ID, Fname, Lname, rating, Specialization.
* **AvailableAppointment**: contains date, shift number.
* **Reception:** Include ID, Phone Number
* **Receptionist:** Include ID, Fname and Lname
* **Nurse Information**: Includes NurseID, Fname and Lname
* **Invoice:** Includes InvoiceID, Date, Amount, Type
* **Appointment Details**: Consists of appointmentID, date, time, and status.
* **Medical Record Information**: Contains recordID, visit date and diagnosis.
* **Pharmacist Information**: Includes pharmacistID, Fname and Lname
* **Medication Details**: MedicationCode, Name, Strength.
* ActiveSubstances: ActiveSubstanceID, Name, Side Effects (multi-values)
* **Prescription**: PrescriptionID (Primary Key), Dosage, DateIssued, duration.

**Process Flow**

1. **User Registration**: Users sign up and are categorized as Patients, Doctors, Nurse, Receptionist or Pharmacists.
2. **Clinic and Appointment Selection**: Patients choose a clinic and book appointments with doctors based on availability and ratings.
3. **Reception Check-In**: Upon arrival at the clinic, the patient checks in at reception, where their appointment is verified.
4. **Consultation and Record Update**: Doctors conduct consultations, update medical records, and prescribe medications.
5. **Prescription Handling**: Prescriptions are sent to pharmacists, who determine the appropriate medications.
6. **Medication Pickup**: Patients take medications from the pharmacy.
7. **Doctor Rating**: Patients can rate their doctors, providing feedback on their experience.

**Relationships**

* A patient can have multiple appointments, each linked to a clinic.
* A patient can be allergic to specific active substances.
* A patient can have multiple invoices over time.
* patient can have many Medications.
* A doctor is associated with one clinic, while a clinic can have multiple doctors.
* A doctor can issue multiple prescriptions.
* A doctor can have multiple AvailableAppointment.
* A medical record is linked to a single patient and doctor, with patients having multiple records.
* A single medical record may have one prescription.
* A prescription specifies ActiveSubstance.
* Each prescription is associated with a medical record.
* ActiveSubstance interaction whit other ActiveSubstance descript by interactionType.
* Multiple patients can rate multiple doctors.
* Each doctor, patient, nurse, pharmacist, and receptionist have a user account.
* Reception check in appointments.
* reception creating an invoice for services that will be provided during the visit.

## Pages

For our ASP.NET MVC Hospital Management System (HMS), we will need to design pages tailored to different types of users, such as **Patients**, **Doctors**, **Nurses**, **Pharmacists**, **Receptionists**, and **Admins**. Below is a breakdown of the essential pages for each user role:

**1. Patient Pages**

* **Home/Dashboard**: Overview of upcoming appointments, prescriptions, medical records, and notifications.
* **Profile**: View and edit personal information (address, contact details, allergies).
* **Appointments**:
  + View upcoming and past appointments.
  + Schedule a new appointment.
  + Cancel or reschedule existing appointments.
* **Medical Records**:
  + View medical history, diagnoses, lab results, and doctor notes.
* **Prescriptions**:
  + View current and past prescriptions.
  + Request refills or updates.
* **Invoices/Billing**:
  + View and pay outstanding invoices.
  + Download payment receipts.
* **Medications**:
  + View medication history and active substances.
  + Check for potential interactions based on current prescriptions.

**2. Doctor Pages**

* **Home/Dashboard**: Overview of today's appointments, pending lab results, and recent patient interactions.
* **Patient Management**:
  + Search and view patient profiles.
  + Access and update patient medical records.
* **Appointment Management**:
  + View today's schedule and upcoming appointments.
  + Update appointment status (completed, rescheduled, etc.).
* **Prescriptions**:
  + Issue new prescriptions.
  + View and update existing prescriptions.
* **Lab Results**:
  + View pending and completed lab results.
  + Add comments or recommendations based on results.
* **Available Appointments**:
  + Set availability for new appointments.
  + Block off unavailable times.

**3. Pharmacist Pages**

* **Home/Dashboard**: Overview of pending prescription requests, inventory alerts, and notifications.
* **Prescription Management**:
  + View new prescriptions and prepare medications.
  + Update the status of prescriptions (prepared, dispensed).

**4. Receptionist Pages**

* **Home/Dashboard**: Overview of today's appointments, new patient registrations, and notifications.
* **Appointment Management**:
  + Schedule, reschedule, and cancel patient appointments.
  + Manage the doctor's availability and clinic schedule.
* **Patient Registration**:
  + Register new patients and update existing patient profiles.
* **Billing/Invoices**:
  + Generate invoices for services rendered.
  + Process payments and update billing status.

These pages will provide a comprehensive interface for each user role, allowing them to efficiently perform their tasks within the HMS system.