

Only make internal relations in this task

Draw your module ERD

Member 1: Security & Admin (**Mohamed Ramy**)

Your ERD manages *who* can access the system.

Entities & Attributes:

- User
 - UserID (PK)
 - Username
 - PasswordHash
- Role
 - RoleID (PK)
 - RoleName (e.g., "Doctor", "Nurse", "Admin")
- Permission
 - PermissionID (PK)
 - ActionName (e.g., "DeleteRecords", "ManageUsers")
- Role_Permission (Junction Table)
 - RolePermissionID (PK)
 - RoleID (FK)
 - PermissionID (FK)
- Staff
 - StaffID (PK)
 - UserID (FK)

- DepartmentID (FK)
 - FirstName
 - LastName
- Department
 - DepartmentID (PK)
 - DepartmentName
- Audit_Log
 - LogID (PK)
 - UserID (FK)
 - Timestamp
 - ActionDescription

Internal Relationships:

- Staff (UserID) has a 1:1 link to User (UserID).
- Staff (DepartmentID) has a N:1 link to Department (DepartmentID).
- Audit_Log (UserID) has a N:1 link to User (UserID).
- Role_Permission creates a M:N link between Role and Permission.

External Relationships (How to Combine):

- Staff (StaffID) is a master key. It will be used as an (FK) in:
 - Appointment (StaffID) (Module 2)
 - Diagnosis (StaffID) (Module 3)
 - Surgery_Request (RequestingStaffID) (Module 3)
 - Doctor_Notes (StaffID) (Module 3)
 - Nurse_Assignment (StaffID) (Module 4)
 - Nurse_Task (AssignedStaffID) (Module 4)

- Operation_Assignment (StaffID) (Module 4)
 - Lab_Order (RequestingStaffID) (Module 5)
 - Prescription (StaffID) (Module 5)
 - User (UserID) will link to Patient (UserID) in Module 2 for patient portal access.
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■ Member 2: Patient & Logistics (**Ziad**)

Your ERD manages the *patient* and their *physical location*.

Entities & Attributes:

- Patient
 - PatientID (PK)
 - UserID (FK) (Optional, for portal)
 - FirstName
 - LastName
 - DateOfBirth
- Appointment
 - AppointmentID (PK)
 - PatientID (FK)
 - StaffID (FK)
 - AppointmentTime
 - Status
- Visit / Encounter (Added, as it's required by your relationship list)
 - VisitID (PK)
 - PatientID (FK)
 - AdmissionTime

- VisitType (e.g., "Inpatient", "Emergency")
- Bed
 - BedID (PK)
 - RoomNumber
 - IsAvailable
- Bed_Assignment (Junction Table)
 - BedAssignID (PK)
 - PatientID (FK)
 - BedID (FK)
 - VisitID (FK)
 - StartTime
 - EndTime
- Operation_Room
 - OpRoomID (PK)
 - RoomName
 - IsAvailable

Internal Relationships:

- Appointment (PatientID) has a N:1 link to Patient (PatientID).
- Visit / Encounter (PatientID) has a N:1 link to Patient (PatientID).
- Bed_Assignment creates a M:N link between Patient and Bed.
- Bed_Assignment (VisitID) also has a N:1 link to Visit / Encounter (VisitID).

External Relationships (How to Combine):

- Visit / Encounter (VisitID) is the central "glue" entity. It will be used as an (FK) in:
 - Diagnosis (VisitID) (Module 3)

- Treatment_Plan (VisitID) (Module 3)
 - Surgery_Request (VisitID) (Module 3)
 - Doctor_Notes (VisitID) (Module 3)
 - Nurse_Assignment (VisitID) (Module 4)
 - Nurse_Task (VisitID) (Module 4)
 - Lab_Order (VisitID) (Module 5)
 - Prescription (VisitID) (Module 5)
 - Invoice (VisitID) (Module 6)
- Operation_Room (OpRoomID) will be used as an (FK) in Surgery_Request (OpRoomID) (Module 3).
 - Patient (UserID) links to User (UserID) (Module 1).
 - Appointment (StaffID) links to Staff (StaffID) (Module 1).

■ Member 3: Doctor & EMR (Clinical Records) (**Youssef Warshana**)

Your ERD manages the *clinical data* created during a visit.

Entities & Attributes:

- Diagnosis
 - DiagnosisID (PK)
 - VisitID (FK)
 - StaffID (FK)
 - DiagnosisNotes
- Treatment_Plan
 - PlanID (PK)
 - VisitID (FK)
 - StaffID (FK)

- PlanDetails
- Surgery_Request
 - RequestID (PK)
 - VisitID (FK)
 - RequestingStaffID (FK)
 - SurgeonStaffID (FK) (Optional)
 - OpRoomID (FK) (Optional)
 - Status
- Surgery_Report
 - ReportID (PK)
 - RequestID (FK)
 - ReportText
- Doctor_Notes
 - NoteID (PK)
 - VisitID (FK)
 - StaffID (FK)
 - NoteText

Internal Relationships:

- Surgery_Report (RequestID) has a 1:1 link to Surgery_Request (RequestID).

External Relationships (How to Combine):

- Diagnosis (VisitID), Treatment_Plan (VisitID), Surgery_Request (VisitID), and Doctor_Notes (VisitID) all link to Visit / Encounter (VisitID) (Module 2).
- Diagnosis (StaffID), Treatment_Plan (StaffID), Surgery_Request (RequestingStaffID), and Doctor_Notes (StaffID) all link to Staff (StaffID) (Module 1).

- **Surgery_Request** (OpRoomID) links to **Operation_Room** (OpRoomID) (Module 2).
 - **Surgery_Request** (RequestID) will be used as an (FK) in **Operation_Assignment** (RequestID) (Module 4).
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■ Member 4: Nurse & Staffing (**Youssef Ayman**)

Your ERD manages *staff scheduling* and *task assignment*.

Entities & Attributes:

- Shift
 - ShiftID (PK)
 - ShiftName
- Attendance (Added, as it's required by your relationship list)
 - AttendanceID (PK)
 - ShiftID (FK)
 - StaffID (FK)
 - ClockInTime
 - ClockOutTime
- Nurse_Assignment (Junction Table)
 - NurseAssignID (PK)
 - VisitID (FK)
 - StaffID (FK)
- Nurse_Task
 - TaskID (PK)
 - VisitID (FK)
 - AssignedStaffID (FK)
 - Description

- Status
- Operation_Assignment (Junction Table)
 - OpAssignID (PK)
 - RequestID (FK)
 - StaffID (FK)
 - Role (e.g., "Scrub Nurse")

Internal Relationships:

- Attendance (ShiftID) has a N:1 link to Shift (ShiftID).

External Relationships (How to Combine):

- Attendance (StaffID), Nurse_Assignment (StaffID), Nurse_Task (AssignedStaffID), and Operation_Assignment (StaffID) all link to Staff (StaffID) (Module 1).
 - Nurse_Assignment (VisitID) and Nurse_Task (VisitID) link to Visit / Encounter (VisitID) (Module 2).
 - Operation_Assignment (RequestID) links to Surgery_Request (RequestID) (Module 3).
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Member 5: Lab & Prescriptions (Clinical Orders) (**Omar Negm**)

Your ERD manages the "ordering" workflows.

Entities & Attributes:

- Test_Type
 - TestTypeID (PK)
 - TestName
 - ReferenceRange
- Lab_Order
 - OrderID (PK)

- VisitID (FK)
 - RequestingStaffID (FK)
- Lab_Test
 - TestID (PK)
 - OrderID (FK)
 - TestTypeID (FK)
 - Status
- Lab_Result
 - ResultID (PK)
 - TestID (FK)
 - DeviceID (FK) (Optional)
 - ResultValue
- Lab_Result_File (Added, as it's required by your relationship list)
 - FileID (PK)
 - ResultID (FK)
 - FileName
 - FileURL
- Lab_Device (Added, as it's required by your relationship list)
 - DeviceID (PK)
 - DeviceName
- Prescription
 - PrescriptionID (PK)
 - VisitID (FK)
 - StaffID (FK)

- Prescription_Item
 - PrescriptionItemID (PK)
 - PrescriptionID (FK)
 - MedicinelD (FK)
 - Dosage

Internal Relationships:

- Lab_Test (OrderID) has a N:1 link to Lab_Order (OrderID).
- Lab_Result (TestID) has a 1:1 link to Lab_Test (TestID).
- Lab_Test (TestTypeID) has a N:1 link to Test_Type (TestTypeID).
- Lab_Result (DeviceID) has a N:1 link to Lab_Device (DeviceID).
- Lab_Result_File (ResultID) has a N:1 link to Lab_Result (ResultID).
- Prescription_Item (PrescriptionID) has a N:1 link to Prescription (PrescriptionID).

External Relationships (How to Combine):

- Lab_Order (VisitID) and Prescription (VisitID) link to Visit / Encounter (VisitID) (Module 2).
- Lab_Order (RequestingStaffID) and Prescription (StaffID) link to Staff (StaffID) (Module 1).
- Prescription_Item (MedicinelD) links to Medicine (MedicinelD) (Module 6).
- Lab_Test (TestID) can be referenced by Invoice_Item (ReferenceID) (Module 6).

Member 6: Pharmacy & Finance (**Amnah**)

Your ERD manages *inventory* and *billing*.

Entities & Attributes:

- Medicine
 - MedicinelD (PK)

- Name
- Medicine_Batch
 - BatchID (PK)
 - MedicinelD (FK)
 - ExpiryDate
- Inventory
 - InventoryID (PK)
 - BatchID (FK)
 - Quantity
- Invoice
 - InvoicelD (PK)
 - VisitID (FK)
 - TotalAmount
 - Status
- Invoice_Item
 - ItemID (PK)
 - InvoicelD (FK)
 - Description
 - Amount
- Payment
 - PaymentID (PK)
 - InvoicelD (FK)
 - AmountPaid
 - PaymentMethod

- **Insurance_Provider** (Added, as it's required by your relationship list)
 - ProviderID (PK)
 - ProviderName
- **Insurance_Claim** (Added, as it's required by your relationship list)
 - ClaimID (PK)
 - InvoiceID (FK)
 - ProviderID (FK)
 - ClaimAmount
- **Claim_Status**
 - StatusID (PK)
 - ClaimID (FK)
 - Status
 - Notes

Internal Relationships:

- **Medicine_Batch** (MedicineID) has a N:1 link to **Medicine** (MedicineID).
- **Inventory** (BatchID) has a 1:1 link to **Medicine_Batch** (BatchID).
- **Invoice_Item** (InvoiceID) has a N:1 link to **Invoice** (InvoiceID).
- **Payment** (InvoiceID) has a N:1 link to **Invoice** (InvoiceID).
- **Insurance_Claim** (InvoiceID) has a N:1 link to **Invoice** (InvoiceID).
- **Insurance_Claim** (ProviderID) has a N:1 link to **Insurance_Provider** (ProviderID).
- **Claim_Status** (ClaimID) has a N:1 link to **Insurance_Claim** (ClaimID).

External Relationships (How to Combine):

- **Medicine** (MedicineID) will be used as an (FK) in **Prescription_Item** (MedicineID) (Module 5).
- **Invoice** (VisitID) links to **Visit / Encounter** (VisitID) (Module 2).

- **Invoice_Item** will need to link to billable items like **Lab_Test (M5)**, **Bed_Assignment (M2)**, etc.