✅ 1. Entity-Relationship (ER) Model

- **Entities & Attributes**:
  - **Clients**:
    - `Client_ID` *(PK, INT)*
    - `Name` *(VARCHAR)*
    - `Contact_Info` *(VARCHAR)*
  - **Cases**:
    - `Case_ID` *(PK, INT)*
    - `Type_of_Case` *(VARCHAR)*
    - `Status` *(VARCHAR)*
    - `Assigned_Lawyer` *(FK → Lawyers.Lawyer_ID)*
    - `Deadline` *(DATE)*
  - **Lawyers**:
    - `Lawyer_ID` *(PK, INT)*
    - `Name` *(VARCHAR)*
    - `Specialization` *(VARCHAR)*
    - `Availability` *(VARCHAR or BOOLEAN)*
  - **Billing**:
    - `Invoice_ID` *(PK, INT)*
    - `Client_ID` *(FK → Clients.Client_ID)*
    - `Case_ID` *(FK → Cases.Case_ID)*

        - `Services_Rendered` *(TEXT)*
        - `Amount` *(DECIMAL)*
        - `Payment_Status` *(VARCHAR)*
    - **Tasks**:
        - `Task_ID` *(PK, INT)*
        - `Case_ID` *(FK → Cases.Case_ID)*
        - `Assigned_To` *(FK → Lawyers.Lawyer_ID)*
        - `Due_Date` *(DATE)*
        - `Status` *(VARCHAR)*

✅ 2. Relationships & Constraints

- **One-to-Many**:
    - One **Client** can have multiple **Cases**
    - One **Case** can have multiple **Tasks**
    - One **Lawyer** can be assigned to many **Cases** or **Tasks**
    - One **Client** can have multiple **Billings**
- **Constraints**:
    - `Client_ID`, `Lawyer_ID`, `Case_ID`, `Invoice_ID`, `Task_ID`: **NOT NULL**, **UNIQUE**, **PRIMARY KEY**
    - `Contact_Info`, `Amount`, `Due_Date`: **NOT NULL**
    - `Payment_Status`: **CHECK (IN 'Paid', 'Pending', 'Overdue')**

✅ 3. Normalization

- **3NF**: No transitive dependencies (each non-key depends only on the key)