Ospetal: A Hospital Data Management System

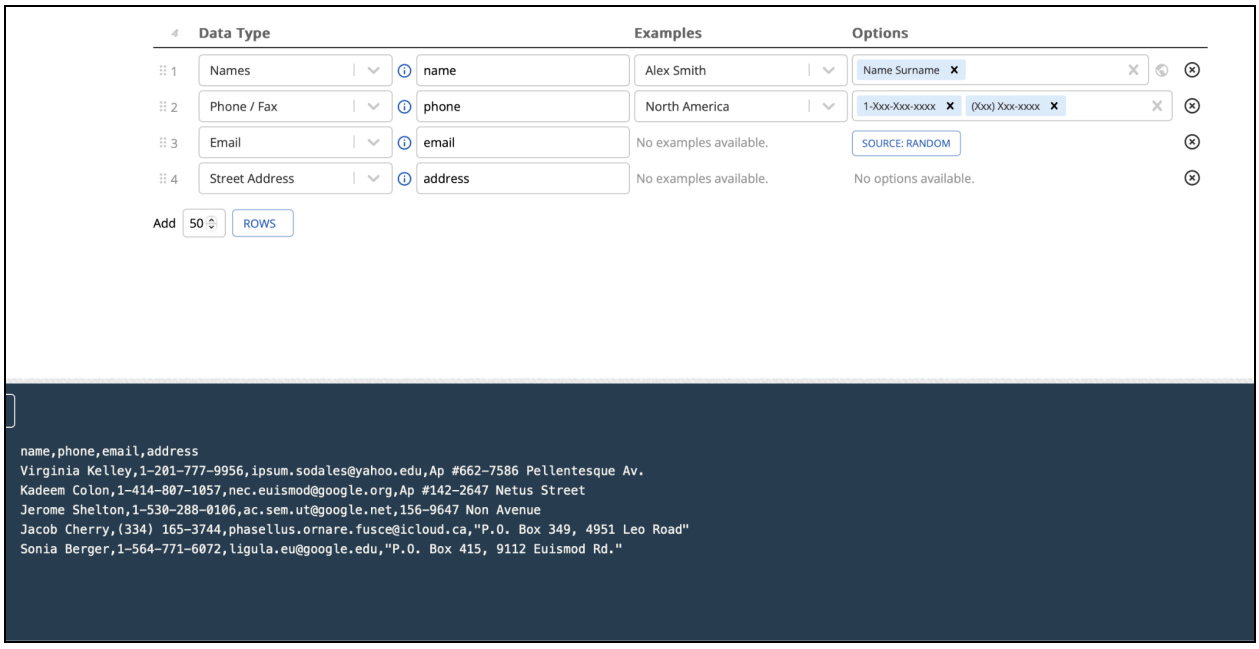
Team: Sneha, Roman, Alexander, Emir

Executive Summary

Oseptal is a hospital database system designed to manage patient personal and medical records, hospital employee information, administrative processes, invoices and relationships between various entities. It aims to address inefficiencies in current hospital record-keeping systems, where outdated and fragmented data lead to miscommunication and delay issues that can cost lives in a hospital setting.

The data was generated using a third party website that generates data and with the application of LLM. For example, Our patient table was generated using generate.com.

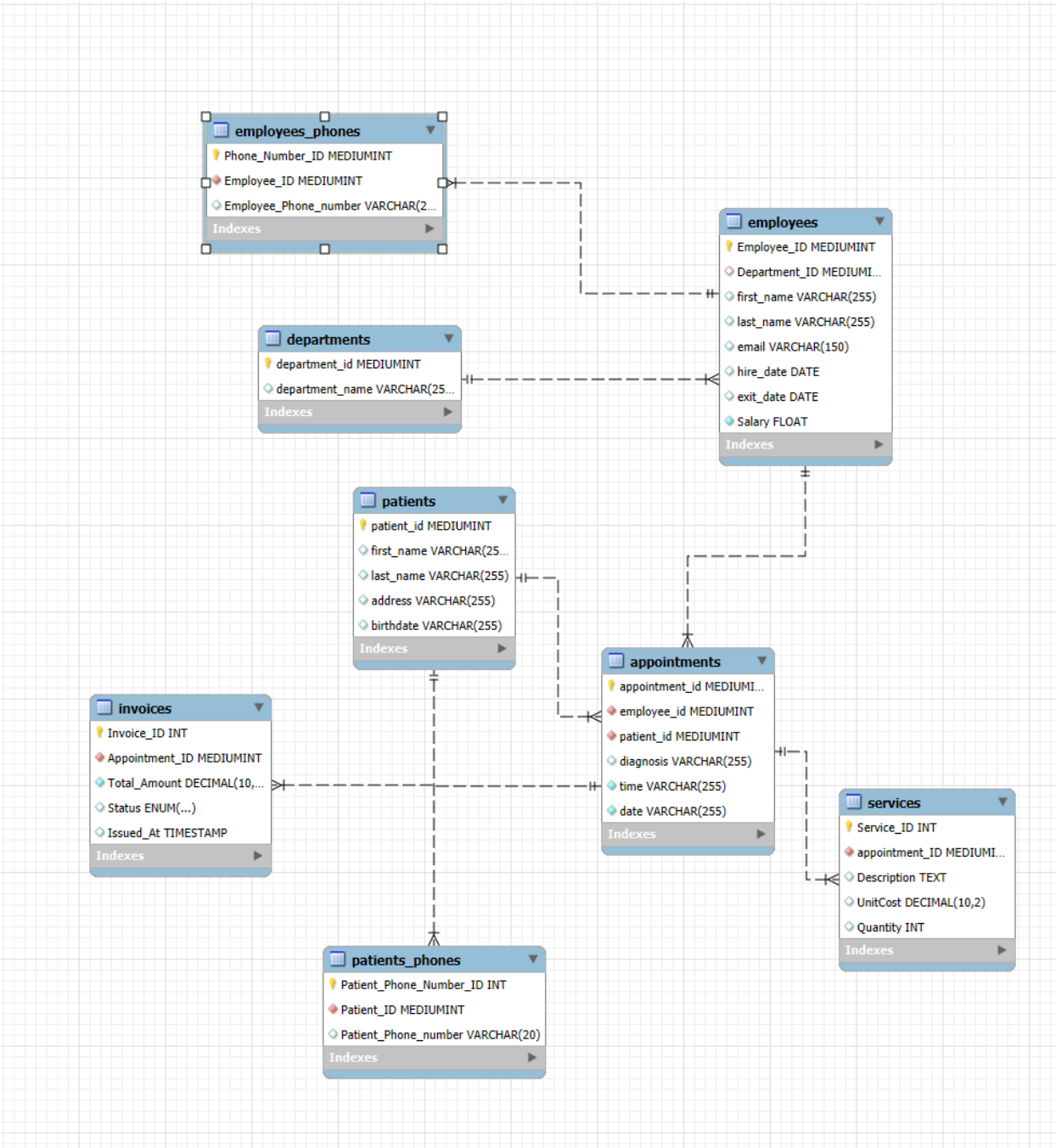
Image from https://generatedata.com/generator:



Business Rules

Ospetal database system follows strict business rules to ensure security, accuracy, and proper data management.

1. **Confidentiality** is maintained by restricting access to patient records based on role-based permissions, allowing only authorized staff to view sensitive information.
2. **Authentication** measures, including unique login credentials and multi-factor authentication, protect against unauthorized access.
3. **Data accuracy** is enforced through real-time updates, validation checks, and duplicate record prevention. Each patient and employee is uniquely identified using system-generated IDs, ensuring proper record-keeping and access control. Only doctors can modify patient medical records, while administrative staff handle non-medical data. These rules uphold **data integrity**, streamline operations, and enhance patient privacy.


employees_phones
Phone_Number_ID MEDIUMINT
Employee_ID MEDIUMINT
Employee_Phone_number VARCHAR(2...
Indexes
employees
Employee_ID MEDIUMINT
Department_ID MEDIUMI...
first_name VARCHAR(255)
last_name VARCHAR(255)
email VARCHAR(150)
hire_date DATE
exit_date DATE
Salary FLOAT
Indexes
departments
department_id MEDIUMINT
department_name VARCHAR(25...
Indexes
patients
patient_id MEDIUMINT
first_name VARCHAR(25...
last_name VARCHAR(255)
address VARCHAR(255)
birthdate VARCHAR(255)
Indexes
appointments
appointment_id MEDIUMI...
employee_id MEDIUMINT
patient_id MEDIUMINT
diagnosis VARCHAR(255)
time VARCHAR(255)
date VARCHAR(255)
Indexes
invoices
Invoice_ID INT
Appointment_ID MEDIUMINT
Total_Amount DECIMAL(10,...
Status ENUM(...)
Issued_At TIMESTAMP
Indexes
services
Service_ID INT
appointment_ID MEDIUMI...
Description TEXT
UnitCost DECIMAL(10,2)
Quantity INT
Indexes
patients_phones
Patient_Phone_Number_ID INT
Patient_ID MEDIUMINT
Patient_Phone_number VARCHAR(20)
Indexes