BAN 5501 – DATA MGMT & SQL FOR ANALYTICS

Hospital Database Management System

Presentation video Link: https://clarku.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=85486fcc-33c3-4d15-9d2b-ae87017d97ad&start=0

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Introduction

Hospital is one of the busiest areas, with many people coming in and out every day. To keep track of these people, a well-organized and comprehensive database system is required. A database system aids with the management of many activities that occur in the hospital daily, such as appointment bookings, managing doctor schedules, managing patient details and their medical histories etc.

Objective

The primary goal of our project is to develop a database management system that will simplify operations, facilitate information transfers, track, and monitor patient details, and facilitate online appointment booking.

Database Design

Database design involves classifying data and identifying interrelationships. ERD is a graphical representation that depicts relationships among people, objects, places, concepts, or events within an information technology (IT) system. We began by gathering requirements and utilizing an Entity-Relationship Diagram to represent a relational database (ERD).

Entity sets and relationships, employing keys as a unique identifier for each item in an entity set, one-one, many-one, and many-many relationships, and translational rules from conceptual modeling (ERD) to relational table definitions are among the concepts discussed.

The concepts presented include entity sets and relationships, using keys as a unique identifier for each item in an entity set i.e., primary, and foreign keys, one-one, and many-many relations, and translational rules from conceptual modeling (ERD) to relational table definitions.

We also looked at the relational model and functional relationships, as well as how they applied to two database design methods: normal forms and normalization.

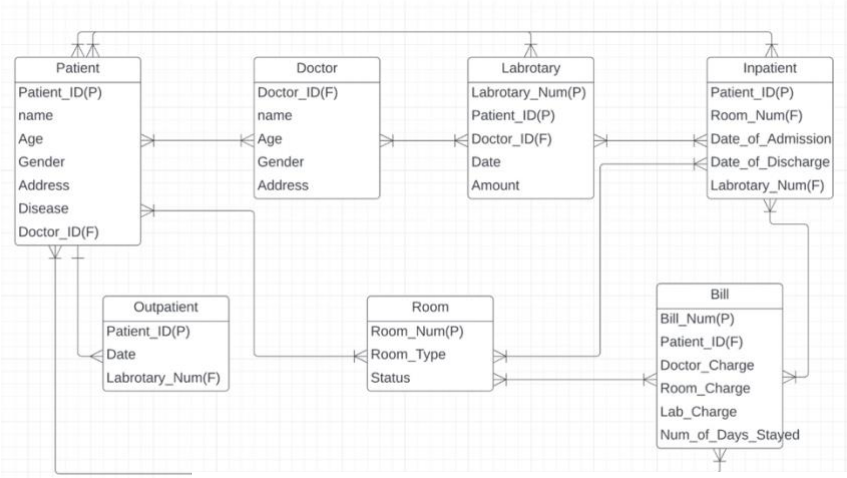

Figure 1 ERD of Hospital Database Management

Future Scope:

- Enabling Database auto-refresh so the data is updated continuously.
- Deploying the database on the cloud services like AWS and implementing a CI/CD pipeline.
- Integration of the reports with data visualization tools like Tableau and PowerBI to analyse the reports.
- Creating security platforms to ensure safety of data

How to ensure security?

- actively managing passwords and user access
- regulating database servers on a regular basis
- disabling public network access
- encrypting all files and backups