Student's Full Name: SHREYA VIKAS KOLTE	
Course Title: INFO 579: SQL/NoSQL Databases for Data and Information Sciences	
Term name and year: Spring 2024	
Submission Week: Week 8 Project Update-1	
Instructor's Name: Prof. Nayem Rahman	
Date of Submission: 3-12-2024	

HOSPITAL MANAGEMENT SYSTEM

Introduction:

The primary aim of this project is to develop a comprehensive Hospital Management System is to enhance the operational efficiency, data integrity, and quality of patient care in healthcare facilities. By creating a robust and scalable database system, the project seeks to streamline administrative and clinical processes, facilitate the seamless management of healthcare data, including patient records, healthcare professional details, department allocations, surgery scheduling, and billing transactions which will enhance decision-making processes.

- **DataSheet 1** paints a comprehensive picture of patient records, integrating essential details such as patient names, contact numbers, birth dates, addresses, email IDs, assigned doctors, attending nurses, potential surgeries, department allocations, and corresponding billing IDs.

- **DataSheet 2** delves into the structural essence of the hospital data, adhering to the 3rd Normal Form to ensure optimal data organization and efficiency. This datasheet is segmented into relational tables including Patient, Doctor, Surgery, Nurse, Department, and Bill, each tailored to capture specific elements of healthcare management.

  - **A One-to-One** correspondence between the Patient and Bill tables, illustrates direct billing associations.

  - **Many-to-Many** relationships are evident in the Patient-Doctor, Patient-Surgery and Patient-Nurse matrices, necessitating junction tables for the table relationships.

  - The **One-to-Many** dynamics observed in Surgery-Doctor and Doctor-Department interactions underscore the collaborative and multi-disciplinary approach inherent in medical care and departmental functionality.

Conclusion:

The Hospital Management System project is a visionary way set to redefine healthcare administration and patient care. By integrating cutting-edge database technology, the Hospital Management System promises not only to streamline healthcare operations but also to foster a more efficient, responsive, and patient-centric service model. It is poised to set a new and advanced way in healthcare management, ensuring that patients receive the highest standard of care through enhanced operational protocols and data-driven decision-making.