

**Ahsanullah University of Science and Technology (AUST)**

Department of Computer Science and Engineering

**Project Proposal: Hospital Management System**

Course No.: CSE4126

Course Title: Distributed Database Systems Lab

**Semester: Spring 2022**

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**Submitted To-**

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**Hospital Management System**

The project is a Hospital Management System (HMS) that aims to automate and streamline the operations of a hospital. The HMS will have a distributed database at its core to ensure scalability and availability of data. The system will have a number of modules to cover different aspects of hospital management such as patient registration, appointment scheduling, prescription management, and query management. The system will also have an admin module that will allow hospital staff to manage the different aspects of the system.

The database schema that I plan to use for this project will consist of several tables such as admin\_Table, doctor\_Table, patient\_Table, appointment\_Table and prescription\_Table. Each table will store specific information related to its respective module. For example, the patient\_Table will store patient-related information, whereas the appointment\_Table will store information about scheduled appointments.

To ensure scalability and high availability, I plan to implement a horizontal fragmentation schema, where each table will be replicated across multiple branches of the hospital. This will allow the system to handle a large number of users and also provide a high level of data availability. Additionally, this schema also allows for the data to be stored close to where it will be accessed, which improves performance and reduces latency.

**Global schema:**

**admin\_Table**- admin\_id (PK),name,email,,password,role,branch\_id

**doctor\_Table**- doctor\_id (PK),name,specialty,email,phone,address,branch\_id

**patient\_Table**- patient\_id (PK),name,age,gender,email,phone,address,branch\_id

**appointment\_Table**- appointment\_id (PK),patient\_id (FK),doctor\_id (FK),date,time,status,branch\_id

**prescription\_Table**- prescription\_id (PK),appointment\_id (FK),patient\_id (FK),doctor\_id (FK),diagnosis,medications,branch\_id

| **Fragmentation Schema:**  admin\_Table1= SLbranch\_id=Dhaka admin\_Table  admin\_Table2= SLbranch\_id=Sylhet admin\_Table  doctor\_Table1= SLbranch\_id=Dhaka doctor\_Table  doctor\_Table2= SLbranch\_id=Sylhet doctor\_Table  patient\_Table1= SLbranch\_id=Dhaka patient\_Table  patient\_Table2= SLbranch\_id=Sylhet patient\_Table  appointment\_Table1= SLbranch\_id=Dhaka appointment\_Table  appointment\_Table2= SLbranch\_id=Sylhet appointment\_Table  prescription\_Table1= SLbranch\_id=Dhaka prescription\_Table  prescription\_Table2= SLbranch\_id=Sylhet prescription\_Table | **Allocation Schema:**   | admin\_Table1  doctor\_Table1  patient\_Table1  appointment\_Table1  prescription\_Table1 | @Site1 | | --- | --- | | admin\_Table2  doctor\_Table2  patient\_Table2  appointment\_Table2  prescription\_Table2 | @site2 | |
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