



**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

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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

