

Software design document

HOSTEL MANAGEMENT SYSTEM

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1.INTRODUCTION

1.1 PURPOSE

The purpose of this document is to present a detailed description of our project, applying certificates online in Academic Section. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate. This document is a part of the DBMS course project.

1.2 SCOPE

This product is a web application to keep track of certificates applied by students of the college.

Usually students have to go to Academic Section to apply for a certificate such as Bonafide, provisional Grade card etc. They are given an approximate time for the documents ready. Documents may be delayed due to different factors. The reasons depend on the following factors.

- 1) public holidays,
- 2) the number of applicants for the same document
- 3) the corresponding issuer may be on leave.

Students may need to visit Academic Section more than once. To reduce this ambiguous state and wastage of time in wandering around Academic Section, we are implementing a web application where students can apply online for the required documents and will be mailed when the corresponding documents are ready.

All system information is maintained in a database.

1.3 DOCUMENT CONVENTION

DBMS	Database Management Systems
ER	Entity Relationship
Mobile No.	Mobile Number
Staff_Div	Staff Division
Doc_Type	Type Of Document

1.4 REFERENCES

- Software Design Description
https://en.wikipedia.org/wiki/Software_design_description

1.5 OVERVIEW

The second chapter, the Data Organization section, of this document gives an overview of how the application organizes its data. It describes the design of the relational database followed by the application.

The third chapter, Architectural Design section gives an overview of the application's architecture.

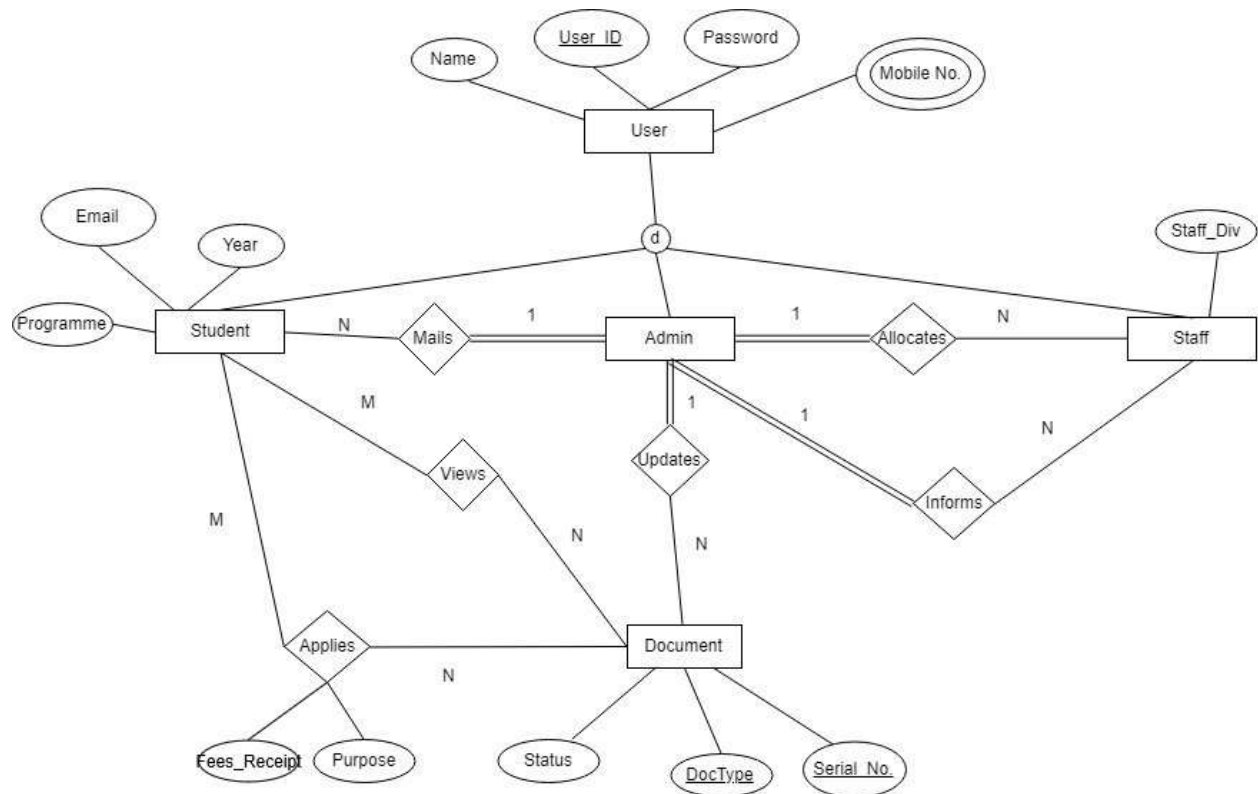
The fourth chapter, User Interface section briefly describes the user interfaces of the application. It specifies the design for both normal and admin users of the system.

The final chapter outlines the major restrictions, limitations and constraints of the system.

2.DATA ORGANIZATION

The data stored for the application consists of a relational database storing textual information.

2.1 ENTITY RELATIONSHIP DIAGRAM



2.2 RELATIONAL DATABASE DESIGN

This section outlines the use cases of normal users and admins separately.

2.2.1 USERS TABLE

<u>User_ID</u>	Password	Name	Mobile_No.	User_Type
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The attributes of the table are

- User_ID - Serves as the primary key for this table.

- Name – Stores the name of the user.
- Password – Stores the password of the user's account.
- Mobile_No. – Stores the mobile number of the user.
- User_Type – Stores whether the user is a student, staff or admin.

2.2.2 STUDENT TABLE

<u>S_User_ID</u>	Programme	Email	Year	Admin_ID
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The attributes of the table are

- S_User_ID- Acts as Foreign Key references primary key User_ID from users table.
- Programme- either B.Tech, M.Tech, Ph.D, MBA or MCA .
- Year- Stores whether the student is 1st year, 2nd year, 3rd year or 4th year.
- Email- Stores the email of student.
- Admin_ID- acts as foreign key that denotes 1:N relationship "Mails" from Admin to Student relation table.

2.2.3 STAFF TABLE

<u>St_User_ID</u>	Staff_Div	Admin_ID
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The attributes of the table are

- St_User_ID- Acts as Foreign Key references primary key User_ID from users table.
- Staff_Div- working division of the staff based on the document allocated by the admin.
- Admin_ID- acts as foreign key that denotes 1:N relationship "Allocates" from Admin to Staff relation table and N:1 relationship "Informs" from Staff to Admin relation table.

2.2.4 DOCUMENT TABLE

<u>Serial_No.</u>	<u>Doc_Type</u>	Status	Admin_ID
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The attributes of the table are

- Serial_No. – the order in which documents are applied.
- Doc_Type - type of the document such as Bonafide, Grade Card etc.
- Status - indicates the status of the document i.e., whether it is applied, processing or finished.

- Admin_ID- acts as foreign key that denotes 1:N relationship “Updates” from Admin to Document relation table.

2.2.5 APPLIES RELATION TABLE

<u>S User ID</u>	<u>Serial No.</u>	<u>Doc Type</u>	Purpose	Fee_Receipt
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The attributes of the table are

- Purpose – reason for the document to be applied.
- Fee_Receipt –It may contain either a null value or a fee receipt based on the type of document.

2.2.6 VIEWS RELATION TABLE

<u>S User ID</u>	<u>Serial No.</u>	<u>Doc Type</u>
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3.ARCHITECTURAL DESIGN

The application follows client server architectural model. The client (web browser) makes requests for resources which is handled and served by the server end of the application. The server program runs on a remote machine accessible via the Internet. The server has access to a database storing textual information.

4.USER INTERFACE DESIGN

4.1 NORMAL USER INTERFACE

This interface provides functionality for users to execute their specific privileges. The browse functionality will be achieved using forms to specify search parameters. Students will have an option for applying the documents online and can view the status of the applied document and

the admin will be able to check the documents applied and process that document to particular staff.

4.2 LOGIN INTERFACE

This interface provides functionality for users to login to the system using the right credentials. This functionality will be achieved using a form to collect login credentials.

4.3 ADMIN INTERFACE

This interface provides functionality that enables admin to execute administrative tasks such as assigning in-charges to documents and modify contents of the system. Add/Remove users will use graphical user interfaces to enable an admin to remove user account in case (s)he is no longer a part of the institute.

5.RESTRICTIONS, LIMITATIONS AND CONSTRAINTS

- Each member of staff will be able to process one or many types of documents.
- Admin verifies the fee receipt and can change the status of document from “applied” to “processing”.
- Admin can change the status of a document to “finished” that is applied by a student.
- Only the admin has permissions to add a new staff or a student to the system.