Students Kit

Project Title: Mail Client Model

Requirements Specification (RS)

No.	Requirement	Essential / Desirable	Description of the Requirement	Remarks
RS1	User Authentication	Essential	Secure login/signup for users and admins	-
RS2	Mail Reception via POP3	Essential	Users can receive and organize emails using POP3	-
RS3	Mail Sending via Sendmail	Essential	Users can compose and send emails using the sendmail service	-
RS4	Mail Organization (Folders, Labels, Trash)	Desirable	Users can organize emails into folders, apply labels, move to trash	Extra feature
RS5	Admin User Management	Essential	Admin can add new users, reset passwords, and manage accounts	-
RS6	Address Book	Desirable	Users can maintain a list of contacts	Extra feature

Database Fields Specification

No.	Field Name	Range of valid values for the field	Remarks
1	user_id	Alphanumeric, unique	Primary key
2	username	Alphanumeric, unique	Login name
3	password	Encrypted string	-
4	email	Valid email format	-
5	role	User/Admin	-

High Level/Detailed Design (HLD/DD)

Design Components

User Interface:
- o Login/Signup Page
- o Inbox, Sent, Trash, and Custom Folders
- o Compose Mail Page
- o Address Book

Backend:
- o Mail Handling Module (POP3 for receiving, sendmail for sending)
- o User Management Module (CRUD operations for users)
- o Session Management
- o Database Connectivity

Test-Plan (TP)

No.	Test case Title	Description	Expected Outcome	The requirement in RS that is being tested	Result
1	User Registration	Tests new user/admin account creation	Successful registration	User Authentication	Passed
2	Login Authentication	Validates login functionality	User can log in securely	User Authentication	Passed
3	Receiving Mail	POP3 mail reception	Mails appear in user inbox	Mail Reception via POP3	Passed
4	Sending Mail	Send mail using sendmail	Mail is sent and appears in Sent folder	Mail Sending via Sendmail	Passed
5	Organizing Mail	Move mail to folders, apply labels, delete	Mails are organized as intended	Mail Organization	Passed
6	Admin User Management	Add/reset/delete user accounts	Admin can manage users	Admin User Management	Passed
7	Session Timeout	Invalidate session after inactivity	User is logged out after timeout	Session Management	Passed