Web Mail System

Software Requirements Specification

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Kha Nguyen

David Stenson

Nicole Brauer

Contents

1 Introduction

This section gives a scope description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Document Purpose

The purpose of this document is to present a detailed description of the Web Mail System. It will illustrate the purpose and complete declaration for the development of system. It will also explain system constraints, interfaces, and interactions with other external applications. This document is targeted at users, project management, stakeholders, and system developers.

1.2 Project Scope

This is a web-based application that provides users the ability to receive and send email from the general internet (public). This system will be designed to provide the user the tools to manage contacts, calendar, and emails. The user can search for sent or received emails, compose new emails using WYSIWYG interface, set rules, and create specific folders to store emails.

The system will be able to allow the user to register for an account, reset passwords, update information.

The system will be able to used across platforms including web-based and mobile devices (iOS, Android). Users will be able to access the system via web browser or download the application to use on their devices.

1.3 Definitions, Acronyms, and Abbreviations

Term	Definition
User	Someone who interacts with the web mail system.
Stakeholder	Any person who has interaction with the system who is not a developer.
CC	Carbon Copy, a copy of the email is sent to the CCed user.
BCC	Blind Carbon Copy a copy of the email is sent to the BCCed user, but the main recipient does not see it.
WYSIWYG	What you see is what you get .
iOS	Operating system for iPhone and iPad.
Android	Operating system for smart phones.
SMTP	Simple Mail Transfer Protocol.
POP	Post Office Protocol.
IMAP	Internet Message Access Protocol.

1.4 Referenced Documents

IEEE Software Engineering Standards Committee, "IEEE Std 830-1998, IEEE Recommended

Practice for Software Requirements Specifications", October 20, 1998.

1.5 Document Overview

The remainder of the document includes 3 chapters.

Chapter 2 provides an overall system description. It describes the product functional categories,

the user(actor) characteristic, the constraints, and dependencies.

Chapter 3 provides the specific requirements of the system including the external and user interfaces, functional and nonfunctional requirements, fully dressed use cases, and system quality attributes.

Chapter 4 provides supporting information about the system including appendices.

2 Overall System Description

This section provides an overview of the whole system.

2.1 Product Functional Categories

Account Access	Feature allows the user to login in the system.
Features:	Confirm if the user is a registered in the system.
	Reset password.
	Register for new user.
	Retrieve username.

Email Management	All features involving the sorting or editing of files stored within the storage of the mailing system.
Features:	Ability to create, rename and sort folders in the inbox, storing emails within them.
	Ability to delete, move and archive emails stored by the system.

	Ability to search through emails, by username, email address, content and title.
	Ability to set rules for emails.
	Ability to flag spam emails.
	Display email status if unread.
	Display total emails and total unread emails.

Body Window	Feature allows the user to view content of emails.
Features:	Display title, sender, CC users, time and date, and body of emails.
	Ability to delete, respond, forward, copy, move, save, print, mark as unread, set priority flag, or archive emails.
	Ability to download attached files.

Composition Window	Features allowing for the creation, and editing of emails.
Features:	Text editing allowing for typing of messages.
	Ability to attach other files to messages, to be sent along with the message to other users.
	Ability to add subject field.
	Ability to send emails as CC / BCC to other recipients.
	Ability to search for recipients that are added to contact list.

Profile Management	Feature allows the user to manage their profile.
Features:	Add/Update basic information (name, address, contact number).
	Change password.
	Add/Update profile picture.
	Update preferences.
	Blacklist email addresses.

Contact Management	Feature allows the user to manage contact list.
Features:	Add/Update/Delete contact information (name, home address, contact number, email address).
	Search for contacts
	Categorize contacts.

Calendar Management	Feature allows the user to manage calendar.
Features:	Add/Update/Delete events.
	Set reminder for events.
	Alert user of conflict of schedules.

2.2 User (Actor) Characteristics

User	The User is someone who registers an account and uses the system for communication purposes.

Actor's Goals:	Create an Account, with a username and password, security questions and a unique email address.
	Login to their account using their username and password
	Send an email to a specific email address.
	Attach another file to an email to be sent.
	Instant Message another user by using their username, or email address.
	Read an email, be able to copy from, respond or forward the email.
	Manage emails, being able to delete, sort into folders or archive emails.
	Compose an email, and choose to send, delete or save it.
	Block another user from sending emails or messages to them.
	Manage contact list.
	Manage calendar.
	Manage user profile.

2.3 Constraints

-   Regulatory policies: personal information regulation.

-   Interfaces to other application: cross-platform functionality.

-   Reliability requirements: system must be able to store emails for extended period of time.

-   Criticality of the system: system must protect personal information of users from security

threats.

2.4 Assumptions and Dependencies

One assumption about the system is that it will be used across platforms. The devices that run the system must have enough performance. The user must also be connected to the Internet to be able send or receive emails. If the device does not have the required hardware to run the system or not connected to the Internet, the system might not work as intended.

2.5 Apportioning of Features or Requirements

- Video calls.

- Conference calls.

- Link external email accounts.

- Send/Receiving audio mails.

- Cloud storage.

3 Specific Requirements

This section presents the system requirements.

3.1 External & User Interfaces

3.1.1 GUI Screens

- Login module: Include text box for inputting username and password. Also include a "Login" button for login and a "Register" link and a "Forgot password?" link.
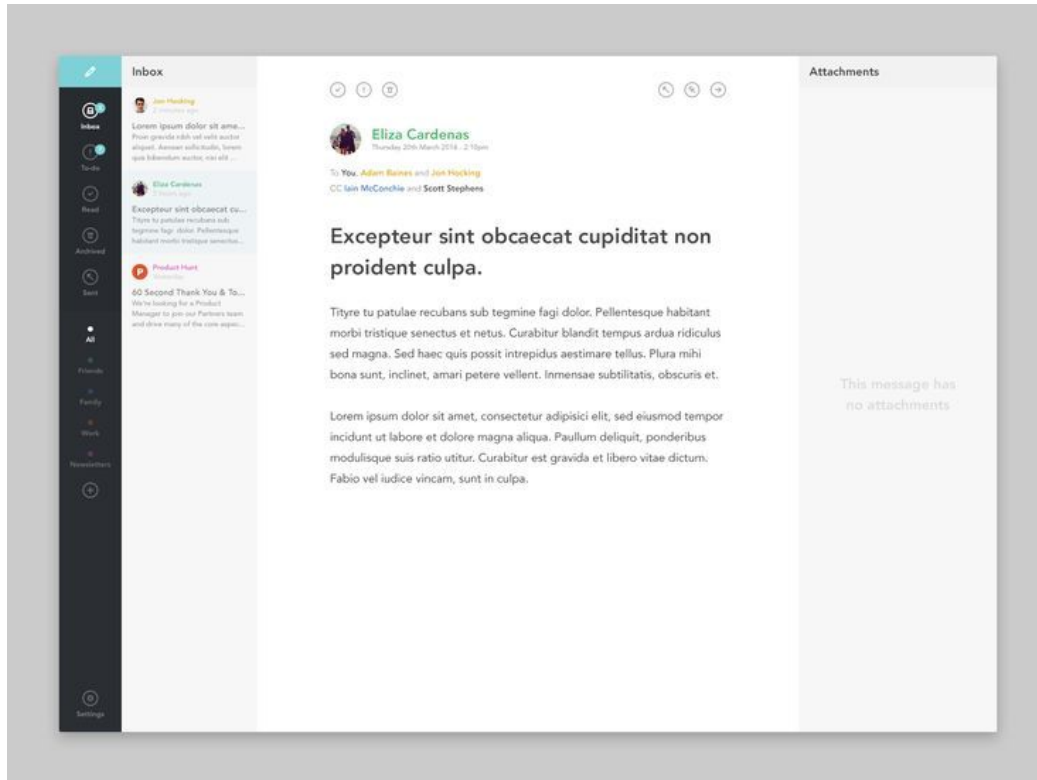
- Message Composition: Include text field for inputting email address, subject, and email body. Include link for attaching file.

- Email Container: Include preview of each email and email folder.

- Contact Management: Display name of contacts as a list.

- Contact View: Display information of contact.

- Calendar View: Display calendar and events.

- Profile Management: Display user information in text boxes. Include an "Update" button for updating information.

3.1.2   Service Interfaces to External Clients

The system can be setup to use with external email client such as Gmail, Yahoo, Hotmail, AOL.

Users can link their existing account to the system to easily manage emails.

3.2 Functional Requirements

3.2.1 Formal Requirements

Account Access	
AA1	The system shall allow users to login the system using username and password.
AA2	The system shall confirm if user is registered .
AA3	The system shall allow users to have their password reset, if they have a username, emailing the password reset link to the secondary email account associated with the username.
AA4	The system shall allow users with their name and password to retrieve their username.

Profile Management	
PM1	The system shall allow the user to add/update basic information (name, mailing address, contact number, alternative email address).
PM2	The system shall allow the user to change password.
PM3	The system shall allow the user to add/update profile picture.
PM4	The system shall allow the user to update preferences.
PM5	The system shall allow the user to block certain email addresses.

Email Management	

EM1	The system shall allow users to sort the email by date, title, sender, or priority
EM2	The system shall allow users to search through their email by date, title, sender, or content
EM3	The system shall allow users to create, delete and rename folders that will contain emails.
EM4	The system shall allow users to sort emails into folders.
EM5	The system shall allow users to delete emails, archive them and move them
EM5	The system shall allow users to mark emails as read or unread
EM6	The system shall allow users to flag spam emails.
EM6	The system shall display priority status of emails.
EM7	The system shall display if an email has been read or unread
EM8	The system shall display the total number of emails in every folder.
EM9	The system shall display the total number of unread emails in every folder.
EM10	The user shall be allowed to select emails from the inbox window to be displayed in the body window

Body Window	
BW1	The system shall display the contents of the currently selected email within the Body Window including body, title, sender, CC users, and time and date received.
BW2	The system shall allow users to delete, respond, forward, copy, move, save, print, mark as unread, set priority flag, or archive the displayed email.

BW3	The system shall allow users to select and download any files attached to the email

Composition Window	
CW1	The system shall contain a text editor that will allow users to write the body of the emails.
CW2	The system shall allow users to attach files to an email
CW3	The system shall allow users to add JPEG, PNG, TIFF, and GIF in the body of the email.
CW4	The system shall provide fields for Title, Send to, CC, and BCC
CW5	The system shall allow recipients to be added from the contact list.
CW6	The system shall provide a WYSIWYG text editor.
CW7	The system shall allow users to set priority level for an email

Contact Scroll	
CS1	The system shall allow users to select a contact and view their information
CS2	Selected contact shall display username, email address, name, and any events listed as involving that contact.
CS3	Contact list shall be searchable, by name, username, and address
CS4	A selected contact shall allow users to choose to send an email to that contact, and will therefore open the Composition Window with the selected contact set as the send to field.

CS5	The system shall allow users to sort the contact list, by name, username or address
CS6	The system shall allow users to subsets of contacts, that will allow the user to select the subset and send emails to all members of the subset
CS7	The system shall allow users to add/update a contacts information (name, email address, username, events involving contact).
CS8	The system shall allow users to email information of a selected contact to another email address.
CS9	The system shall allow users to delete a contact.

Calendar	
C1	The system shall display the weekly view, and show all events that for that week.
C2	The system shall allow users to add, delete, and edit events. Events contain name, date, time starting, time ending, and description fields.
C3	The system shall allow alerts to be created which will be displayed at the appropriate time.
C4	The system shall allow users to assign contacts to an event, to email the contacts the alert at the event start time.
C5	The system shall notify the user if they try to add or create an event that overlaps with an existing event.

3.3 Non-Functional (Performance) Requirements

ID	Definition
NF.001	The system should be able to handle high volume of emails (>100,000 emails per hour)
NF.002	The system should be able to handle high traffic (>5000 user at once)
NF.003	The system should be able to run 24/7
NF.004	The system should be able to protect customer information and emails.

3.4 Fully Dressed Use Case Documents

Provided as separate attachments at the end of the document.

3.5 Logical Database Requirements

Types of information that will need to be maintained persistently for the system to operate:

- Account Access:
    ○ Username.
    ○ Password.
- Email Management:
    ○ Email status.
    ○ Folder name.
- Message Composition:
    ○ Email content.
- Profile Management:

- ○ User information.

- Contact Management:

  - ○ Contact.

- Calendar Management:

  - ○ Events.

  - ○ Reminder.

3.6 Design Constraints

This section describe design constraints that will be imposed by government or industry standards, hardware limitations, etc.

3.6.1 Standards Compliance

- Internet standards RFC 5321 and 5322.

- SMTP and POP.

- Internet Engineering Task Force (IETF)

3.7 System Quality Attributes

Login and inbox are necessary to be reliable and always accessible. The Calendar has high reliability availability is not as important. The speed of email delivery is very important, but preserving the contents and ensuring that it gets sent to the correct user is most important. Overall Reliability and data security is the most important. User Login should be secure over accessibility.

3.7.1   Reliability / Availability

- System reliability is critical. The system must be able to handle customer's sensitive information correctly. The information will be lost or fall into wrong hands if the system fail to deliver the email or deliver it to the wrong address.

- System availability is critical. The system must be available to the customer 24/7. If the system is unavailable at any point, the user won't be able to received emails in time. It will cost the user time, money, and reputation.

3.7.2   Security

- System security is highly important. Customer could be sending or receiving sensitive personal information or business related sensitive information.

- Specific requirements for security:

    - Utilize cryptographic techniques to encode user password.

    - Utilize network security methods.

    - Restrict communication between functions of the system.

    - Check data integrity for critical input information.

3.7.3   Maintainability

- The system should be easy to maintain and update to allow the addition of new features. GUI screens and other look-and-feel elements will be updated occasionally.

3.7.4   Portability

- The system will be used across platform and devices so portability is important.

4   Supporting Information

The system is compatible with Windows, Linux, Mac OS, iOS, Android, and Windows Mobile

and is developed using Java programming language.