Software Requirement Specification (SRS)

Email-Client Server
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<<Any comments inside double brackets such as these are *not* part of this SRS but are comments upon this SRS example to help the reader understand the point being made.

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Email-Client Server

Software Requirements Specification (SRS) for Email Client Server Desktop Application

1. Introduction

1.1 **Purpose:** The Purpose of this SRS is to outlined the in-detail description of our project.

1.2. Scope of the Project:
The email client-server application enables users to create accounts, manage their email correspondence, send and receive emails, and organize their contacts. The goal is to offer a user-friendly interface with real-time notifications and updates for effective email management.

1.3. Glossary

Term	Definition
Database	Collection of all the information monitored by this system.
Admin	Person who receives request, sends request for review, and makes final judgments for publications.
Field	A cell within a form.
Member	A member of the Gmail recipient listed in the database.
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.
Stakeholder	Any person with an interest in the project who is not a developer.
User	Person who'll be Loging in in our portal

1.4. References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.

IEEE Computer Society, 1998**.**

1.5. Overview of Document

The next chapter, the Overall Description section, of this document gives an overview of the

functionality of the product. It describes the informal requirements and is used to establish a context

for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the

developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for

different audiences and thus use different language.

2.0. Overall Description

2.1 System Environment
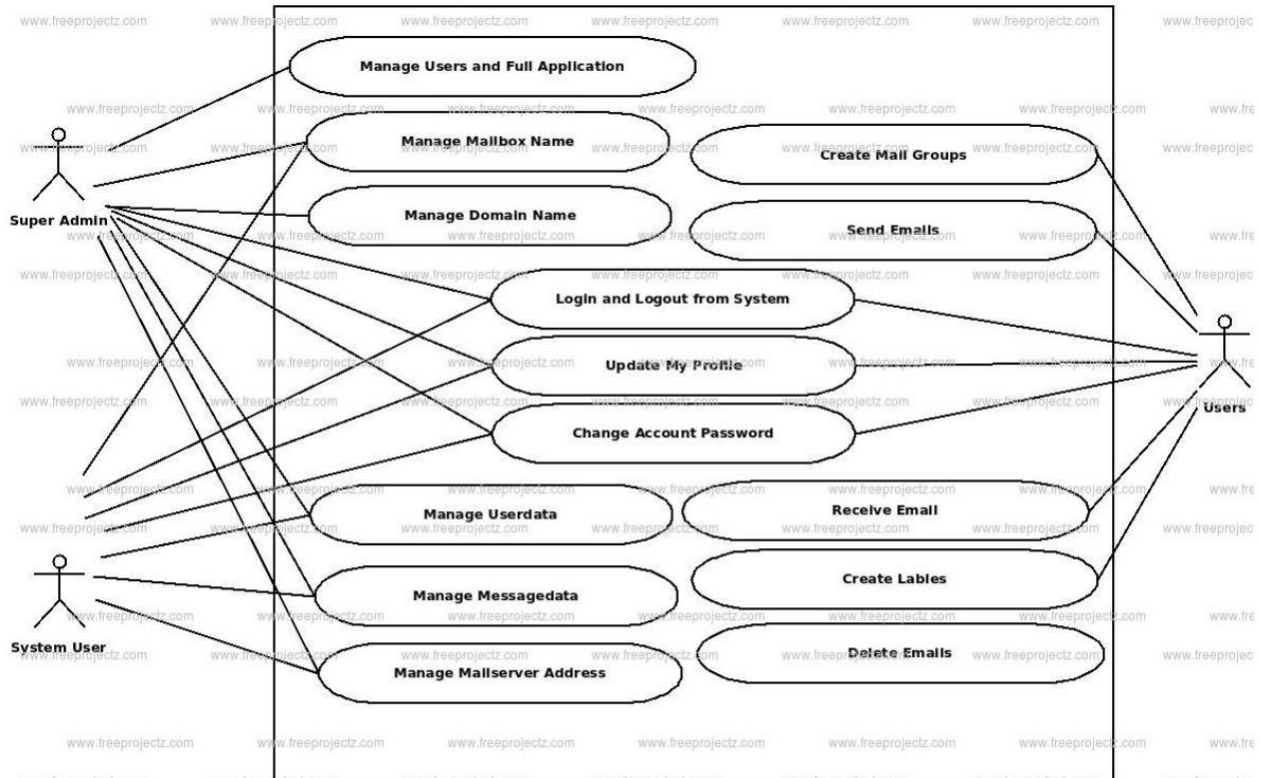
2.2 Functional Requirements:

This section outlines the use cases for each of the active readers separately. The reader, the User and the reviewer have only one-use case a piece while the User is main actor in this system.

2.2.1
Use case: Email Client Server

user

Brief Description
The User accesses the Email Client Portal, enter his/her email address to his/her machine.

Initial Step-By-Step Description
Before this use case can be initiated, the User has already accessed the Email Client Portal.

1. **The User chooses to search by name, category, or keyword.**
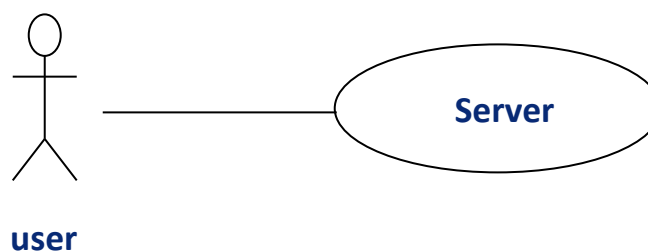2. **The system displays the choices to the User.**
3. **The User selects the desired button to fulfill request.**
4. **The system presents the Fields to the user.**
5. **The User can chooses to attach the attachment.**
6. **The system provides the User Email section.**
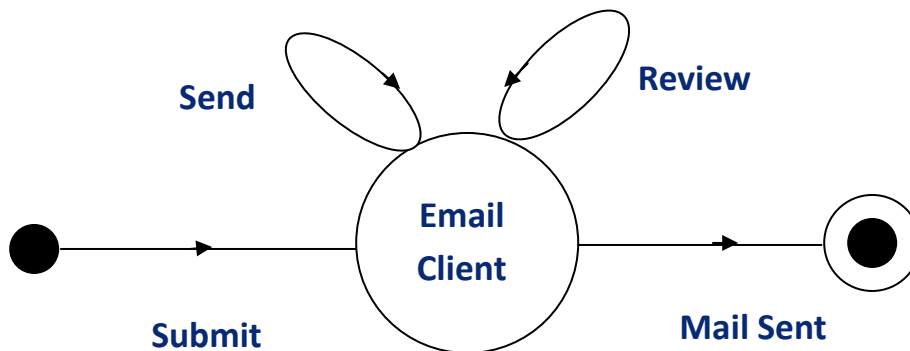
Figure 1 – Email Client Server

A state diagram for an email client-server interaction typically represents the various states and transitions that occur during the communication between the email client and the email server. Below is a high-level description of a simplified email client-server state diagram:

Initialization State:

Description: This is the starting state where the email client and server establish a connection.
Transitions: Transition to the "Handshake" state to initiate the communication.
Handshake State:

Description: The email client and server exchange information to establish a secure and authenticated connection**.**
Transitions: Move to the "Authentication" state once the handshake is successful.
Authentication State:

Description: In this state, the email client authenticates itself with the server, typically using credentials like username and password**.**

Transitions: Upon successful authentication, move to the "Inbox Retrieval" state.

Inbox Retrieval State:

Description: The email client requests the server to retrieve the user's inbox and associated metadata.

Transitions: Move to the "Inbox Display" state after successfully retrieving the inbox data.

Inbox Display State**:**

Description: The email client displays the inbox to the user.

Transitions: Depending on user actions, transition to states like "Read Email," "Compose Email," or "Log Out."

Read Email State:

Description: The user selects and reads an email from the inbox**.**

Transitions: Options to reply, forward, or go back to the "Inbox Display" state.

Compose Email State:

Description: The user creates a new email.

Transitions: Options to send the email, save it as a draft, or discard it.

Send Email State:

Description: The email client sends the composed email to the server for delivery**.**

Transitions: Move to the "Email Sent" state upon successful sending**.**

Email Sent State:

Description: Confirmation that the email has been sent successfully**.**

Transitions: Options to go back to "Inbox Display" or "Compose Email" for further actions**.**

Log Out State:

Description: The user logs out of the email client.

Transitions: Return to the "Initialization" state for a new session.

2.2.2
Another Use Case
In case of multiple Users, this term refers to the *principal User*, with whom all communication is made.

Use case: Submit Mail
Diagram:
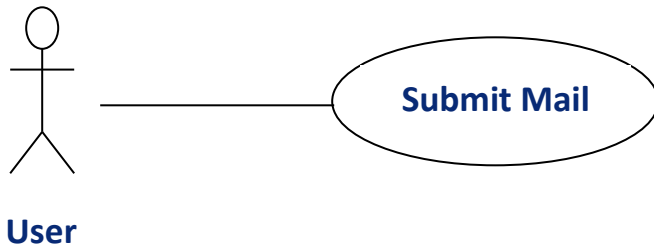
User

Brief Description

The User either submits an original mail or resubmits an edited mail.

Initial Step-By-Step Description

Before this use case can be initiated, the User has already connected to the Email Client Portal
1. **The User chooses the *Email User* button.**
2. **The System uses the *sendto* HTML tag to bring up the user's email system.**
3. **The User fills in the Subject line and attaches the files as directed and emails them.**
4. **The System generates and sends an email acknowledgement.**

Xref: **Section 3.2.2, Communicate**

2.2.3   Reviewer Use Case

Use case: Submit Review
Diagram:
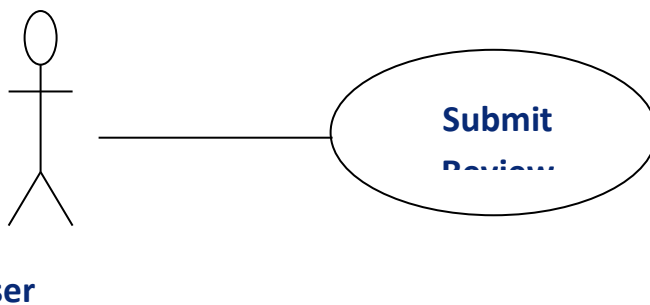
User

Brief Description

The reviewer submits a review of an article.

Initial Step-By-Step Description

Before this use case can be initiated, the Reviewer has already connected to the Online Journal Website.

1. The Reviewer chooses the *Email User* button.
2. The System uses the *sendto* HTML tag to bring up the user's email system.
3. The Reviewer fills in the Subject line and attaches the file as directed and emails it.
4. The System generates and sends an email acknowledgement.

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2.2.4 User Use Cases
The User has the following sets of use cases:

Figure 2 - User Use Cases

Update Information use cases

Use case: Update diagram:

Brief Description
The User enters a new User or updates information about a current User.

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Initial Step-By-Step Description

Before this use case can be initiated, the User has already accessed the main page of the Article Manager.
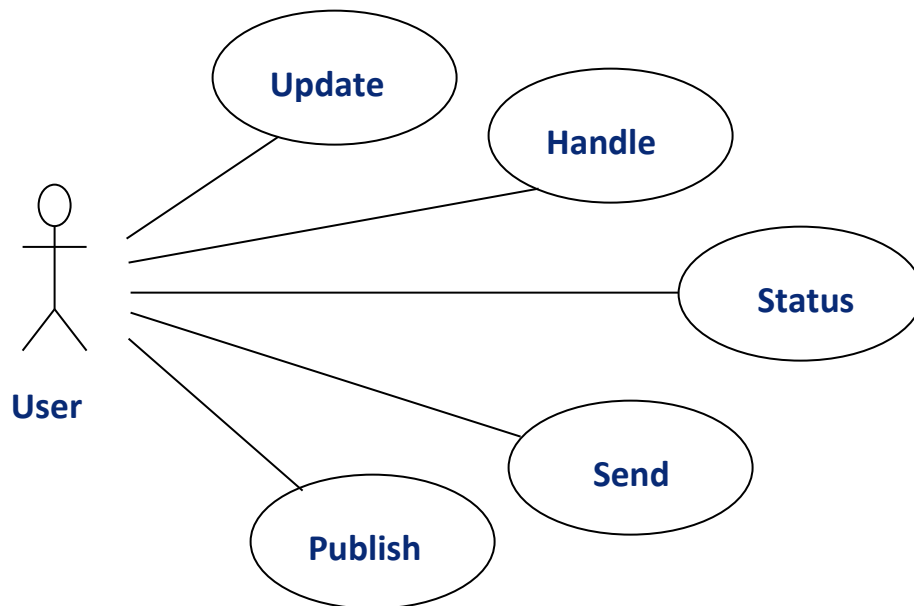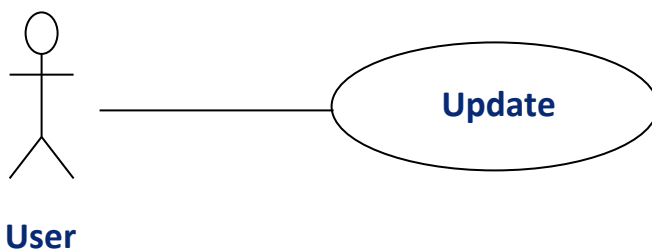
1. **The User selects to *Add/Update* .**
2. **The system presents a choice of adding or updating.**
3. **The Edi chooses to add or to update.**
4. **If the User is updating an User, the system presents a list of Users to choose from and presents a grid filling in with the information; else the system presents a blank grid.**
5. **The User fills in the information and submits the form.**
6. **The system verifies the information and returns the User to the Article Manager main page.**

Xref: **Section 3.2.3, Add User; Section 3.2.5 Update Person**

Use case: Update Reviewer

Diagram:

User

Update

DB

Brief Description

The User enters a new Reviewer or updates information about a current Reviewer.

Initial Step-By-Step Description

Before this use case can be initiated, the User has already accessed the main page of the Article Manager.

1. **The User selects to *Add/Update Reviewer*.**
2. **The system presents a choice of adding or updating.**
3. **The User chooses to add or to update.**
4. **The system links to the Historical Society Database.**

Use case: Update Article

Diagram:

User

Brief Description

The User enters information about an existing article.
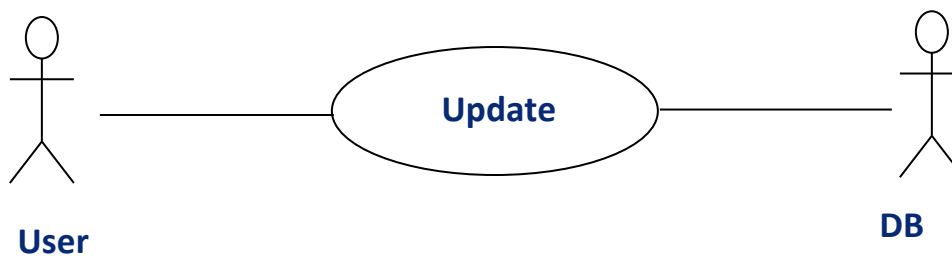
Initial Step-By-Step Description

Before this use case can be initiated, the User has already accessed the main page of the Article Manager.

1. **The User selects to *Update Article*.**
2. **The system presents s list of active articles.**
3. **The system presents the information about the chosen article.**
4. **The User updates and submits the form.**
5. **The system verifies the information and returns the User to the Article Manager main page.**

Xref: **Section 3.2.6, Update Email Client serverStatus**

Handle Article use cases

Use case: Receive Article
Diagram:
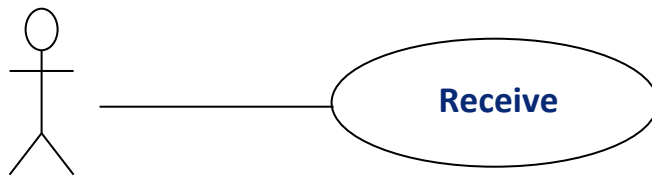
User

Brief Description

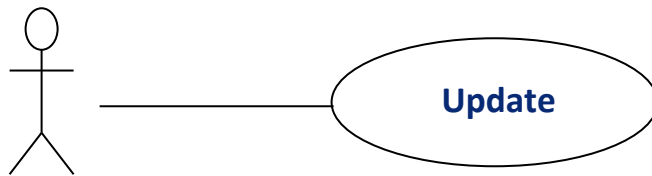**The User enters a new or revised article into the system.**

Initial Step-By-Step Description

Before this use case can be initiated, the User has already accessed the main page of the Article Manager and has a file containing the Email Client serveravailable.

1. The User selects to *Receive Article*.
2. The system presents a choice of entering a new article or updating an existing article.
3. The User chooses to add or to update.
4. If the User is updating an article, the system presents a list of articles to choose from and presents a grid for filling with the information; else the system presents a blank grid.
5. The User fills in the information and submits the form.
6. The system verifies the information and returns the User to the Article Manager main page.

Xref: **Section 3.2.7, Enter Communication**

Use case: Check Status
Diagram:
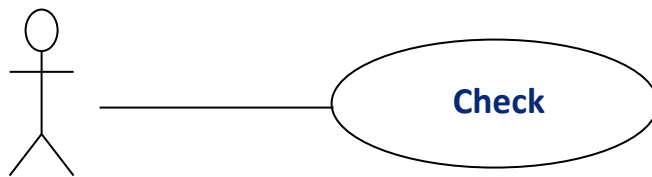
User

Brief Description
The User checks the status of all active articles.

Initial Step-By-Step Description
Before this use case can be initiated, the User has already accessed the main page of the Article Manager.

1. The User selects to *Check Status*.
2. The system returns a scrollable list of all active articles with their status (see data description in section 3.3 below).
3. The system returns the User to the Article Manager main page.

Xref: **Section 3.2.9, Check Status**

Send Recommendation use cases:

Use case: Send Response
This use case extends the *Update Article* use case.

Diagram:
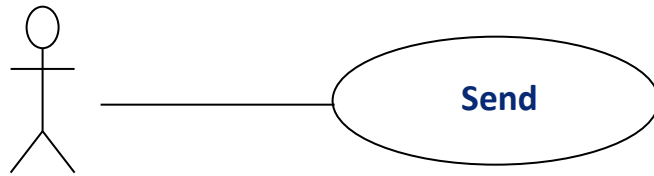
User

Brief Description
The User sends a response to an User.

Initial Step-By-Step Description
Before this use case can be initiated, the User has already accessed the article using the *Update Email Client server*use case.

1. **The User selects to *Send Response*.**
2. **The system calls the email system and puts the User's email address in the Recipient line and the name of the article on the subject line.**
3. **The User fills out the email text and sends the message.**
4. **The system returns the User to the Article Manager main page.**

Xref: **Section 3.210, Send Communication**

Use case: Send Copyright
This use case extends the *Update Article* use case.

Diagram:
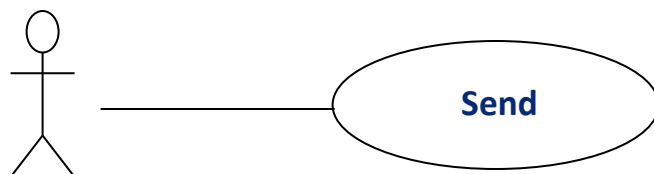
User

Brief Description
The User sends a copyright form to an User.

Initial Step-By-Step Description
Before this use case can be initiated, the User has already accessed the article using the *Update Email Client server*use case.

1. The User selects to *Send Copyright*.
2. The system calls the email system and puts the User's email address in the Recipient line, the name of the article on the subject line, and attaches the copyright form.
3. The User fills out the email text and sends the message.
4. The system returns the User to the Article Manager main page.

Xref: **Section 3.2.10, Send Communication**

Use case: Remove Article
This use case extends the *Update Article* use case.

Diagram:
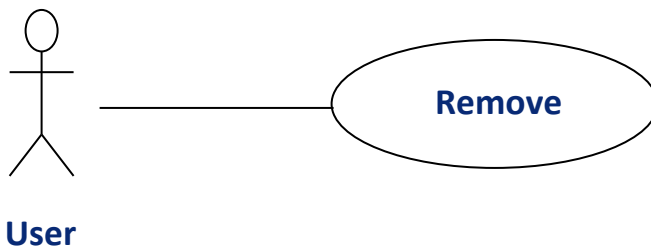
User

Brief Description
The User removes an article from the active category.

Initial Step-By-Step Description
Before this use case can be initiated, the User has already accessed the article using the *Update Email Client server* use case.

1. The User selects to remove an article from the active database.
2. The system provides a list of articles with the status of each.
3. The User selects an article for removal.
4. The system removes the article from the active Email Client serverdatabase and returns the User to the Email Client serverManager main page.

Xref: **Section 3.2.12, Remove Article**

Publish Article use case:

Use case: Publish mail
This use case extends the *Update Article* use case.

Diagram:
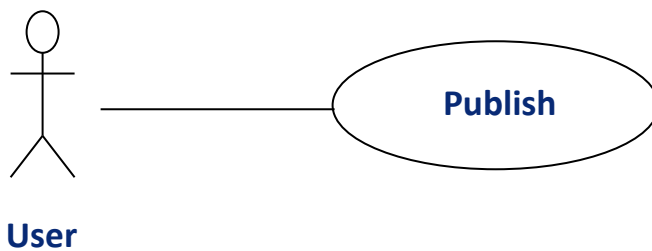
User

Brief Description
The User transfers an accepted article to the Online Journal.

Initial Step-By-Step Description
Before this use case can be initiated, the User has already accessed the article using the *Update Email Client server* use case.

1. **The User selects to *Publish Article*.**
2. **The system transfers the article to the Online Journal and updates the search information there.**
3. **The system removes the article from the active Email Client server database and returns the User to the Email Client serverManager home page.**

Xref: **Section 3.2.11,**

<< Since three of the actors only have one use case each, the summary diagram only involves the User. Adapt the rules to the needs of the document rather than adapt the document to fit the rules. >>

2.3   User Characteristics

The Reader is expected to be Internet literate and be able to use a search engine. The main screen of the Online Journal Website will have the search function and a link to "User/Reviewer Information."

The User and Reviewer are expected to be Internet literate and to be able to use email with attachments.

The User is expected to be Windows literate and to be able to use button, pull-down menus, and similar tools.

The detailed look of these pages is discussed in section 3.2 below.

2.4   Non-Functional Requirements

The Online Journal will be on a server with high speed Internet capability. The physical machine to be used will be determined by the Historical Society. The software developed here assumes the use of a tool such as Tomcat for connection between the Web pages and the database. The speed of the Reader's connection will depend on the hardware used rather than characteristics of this system.

The Article Manager will run on the User's PC and will contain an Access database. Access is already installed on this computer and is a Windows operating system.

3.0. Requirements Specification

3.1 External Interface Requirements

The only link to an external system is the link to the Historical Society (HS) Database to verify the membership of a Reviewer. The User believes that a society member is much more likely to be an effective reviewer and has imposed a membership requirement for a Reviewer. The HS Database fields of interest to the Web Publishing Systems are member's name, membership (ID) number, and email address (an optional field for the HS Database).

The *Assign Reviewer* use case sends the Reviewer ID to the HS Database and a Boolean is returned denoting membership status. The *Update Reviewer* use case requests a list of member names, membership numbers and (optional) email addresses when adding a new Reviewer. It returns a Boolean for membership status when updating a Reviewer.

3.2 Functional Requirements

The Logical Structure of the Data is contained in Section 3.3.1.

3.2.1 Search Article

Use Case Name	Search Article
XRef	Section 2.2.1, Search Article SDD, Section 7.1
Trigger	The Reader assesses the Online Journal Website
Precondition	The Web is displayed with grids for searching
Basic Path	1. The Reader chooses how to search the Web site. The choices are by User, by Category, and by Keyword. 2. If the search is by User, the system creates and presents an alphabetical list of all Users in the database. In the case of an article with multiple Users, each is contained in the list. 3. The Reader selects an User. 4. The system creates and presents a list of all articles by that User in the database. 5. The Reader selects an article.

	6. The system displays the Abstract for the article. 7. The Reader selects to download the article or to return to the Email Client serverlist or to the previous list.

Alternative Paths	In step 2, if the Reader selects to search by category, the system creates and presents a list of all categories in the database.
	    3. The Reader selects a category.
	    4. The system creates and presents a list of all articles in that category in the database. Return to step 5.
	In step 2, if the Reader selects to search by keyword, the system presents a dialog box to enter the keyword or phrase.
	    3. The Reader enters a keyword or phrase.
	    4. The system searches the Abstracts for all articles with that keyword or phrase and creates and presents a list of all such articles in the database. Return to step 5.

Postcondition	The selected article is downloaded to the client machine.
Exception Paths	The Reader may abandon the search at any time.
Other	The categories list is generated from the information provided when article are published and not predefined in the Online Journal database.

3.2.2 Communicate

Use Case Name	Communicate
XRef	Section 2.2.2, Submit Article; Section 2.2.3, Submit Review SDD, Section 7.2
Trigger	The user selects a *mailto* link.
Precondition	The user is on the *Communicate* page linked from the Online Journal Main Page.
Basic Path	This use case uses the *mailto* HTML tag. This invokes the client email facility.
Alternative Paths	If the user prefers to use his or her own email directly, sufficient information will be contained on the Web page to do so.
Postcondition	The message is sent.
Exception Paths	The attempt may be abandoned at any time.
Other	None

3.2.3 Add User

Use Case Name	Add User
XRef	Section 2.2.4, Update User

	SDD, Section 7.3
Trigger	The User selects to add a new User to the database.
Precondition	The User has accessed the Article Manager main screen.
Basic Path	1. The system presents a blank grid to enter the User information. 2. The User enters the information and submits the form. 3. The system checks that the name and email address fields are not blank and updates the database.
Alternative Paths	If in step 2, either field is blank, the User is instructed to add an entry. No validation for correctness is made.
Postcondition	The User has been added to the database.
Exception Paths	The User may abandon the operation at any time.
Other	The User information includes the name mailing address and email address.

3.2.4 Add Reviewer

Use Case Name	Add Reviewer
XRef	Section 2.2.4, Update Reviewer SDD, Section 7.4
Trigger	The User selects to add a new reviewer to the database.
Precondition	The User has accessed the Article Manager main screen.
Basic Path	1. The system accesses the Historical Society (HS) database and presents an alphabetical list of the society members. 2. The User selects a person. 3. The system transfers the member information from the HS database to the Article Manager (AM) database. If there is no email address in the HS database, the User is prompted for an entry in that field. 4. The information is entered into the AM database.
Alternative Paths	In step 3, if there is no entry for the email address in the HS database or on this grid, the User will be reprompted for an entry. No validation for correctness is made.
Postcondition	The Reviewer has been added to the database.
Exception Paths	The User may abandon the operation at any time.
Other	The Reviewer information includes name, membership number, mailing address, categories of interest, and email address.

3.2.5 Enter Communication

Use Case Name	Enter Communication
XRef	Section 2.2.4, Receive Article; Section 2.2.4, Receive Review SDD, Section 7.7
Trigger	The User selects to add a document to the system.
Precondition	The User has accessed the Article Manager main screen and has the file of the item to be entered available.
Basic Path	1. The User selects the article using the *3.2.6, Update Email Client serverStatus* use case. 2. The User attaches the file to the grid presented and updates the respective information about the article. 3. When the User updates the article status to indicate that a review is returned, the respective entry in the Reviewer table is updated.
Alternative Paths	None
Postcondition	The article entry is updated in the database.
Exception Paths	The User may abandon the operation at any time.
Other	This use case extends *3.2.6, Update Article Status*

3.2.6 Assign Reviewer

Use Case Name	Assign Reviewer
XRef	Section 2.2.4, Assign Reviewer SDD, Section 7.8
Trigger	The User selects to assign a reviewer to an article.
Precondition	The User has accessed the Article Manager main screen and the Email Client serveris already in the database. .
Basic Path	1. The User selects the article using the *3.2.6, Update Email Client serverStatus* use case. 2. The system presents an alphabetical list of reviewers with their information. 3. The User selects a reviewer for the article. 4. The system updates the article database entry and emails the reviewer with the standard message and attaches the text of the Email Client serverwithout User information. 5. The User has the option of repeating this use case from step 2.
Alternative Paths	None.
Postcondition	At least one reviewer has been added to the article information and the appropriate communication has been sent.
Exception Paths	The User may abandon the operation at any time.

Other	This use case extends *3.2.6, Update Article Status.* The User, prior to implementation of this use case, will provide the message text.

3.2.7   Check Status

Use Case Name	Check Status
XRef	Section 2.2.4, Check Status SDD, Section 7.9
Trigger	The User has selected to check status of all active articles.
Precondition	The User has accessed the Article Manager main screen.
Basic Path	1. The system creates and presents a list of all active articles organized by their status. 2. The User may request to see the full information about an article.
Alternative Paths	None.
Postcondition	The requested information has been displayed.
Exception Paths	The User may abandon the operation at any time.
Other	The User may provide an enhanced list of status later. At present, the following categories must be provided: 1. Received but no further action taken 2. Reviewers have been assigned but not all reviews are returned (include dates that reviewers were assigned and order by this criterion). 3. Reviews returned but no further action taken. 4. Recommendations for revision sent to User but no response as of yet. 5. User has revised article but no action has been taken. 6. Article has been accepted and copyright form has been sent. 7. Copyright form has been returned but article is not yet published. A published article is automatically removed from the active Email Client serverlist.

3.2.8   Send Communication

Use Case Name	Send Communication
XRef	Section 2.2.4, Send Response; Section 2.2.4, Send Copyright SDD, Section 7.10
Trigger	The User selects to send a communication to an User.
Precondition	The User has accessed the Article Manager main screen.

Basic Path	1. The system presents an alphabetical list of Users.
	2. The User selects an User.
	3. The system invokes the User's email system entering the User's email address into the *To:* entry.
	4. The User uses the email facility.
Alternative Paths	None.
Postcondition	The communication has been sent.
Exception Paths	The User may abandon the operation at any time.
Other	The standard copyright form will be available in the User's directory for attaching to the email message, if desired.

3

3.2.12   Remove Mail

Use Case Name	Remove Article
XRef	Section 2.2.4, Remove Article
	SDD, Section 7.12
Trigger	The User selects to remove an article from the active Email Client serverdatabase.
Precondition	The User has accessed the Article Manager main screen.
Basic Path	1. The system provides an alphabetized list of all active articles.
	2. The User selects an article.
	3. The system displays the information about the article and requires that the User confirm the deletion.
	4. The User confirms the deletion.
Alternative Paths	None.
Postcondition	The article is removed from the database.
Exception Paths	The User may abandon the operation at any time.
Other	Find out from the User to see if the article and its information information should be archived somewhere.

3.3   Detailed Non-Functional Requirements

3.3.1   Logical Structure of the Data

The logical structure of the data to be stored in the internal User Manager database is given
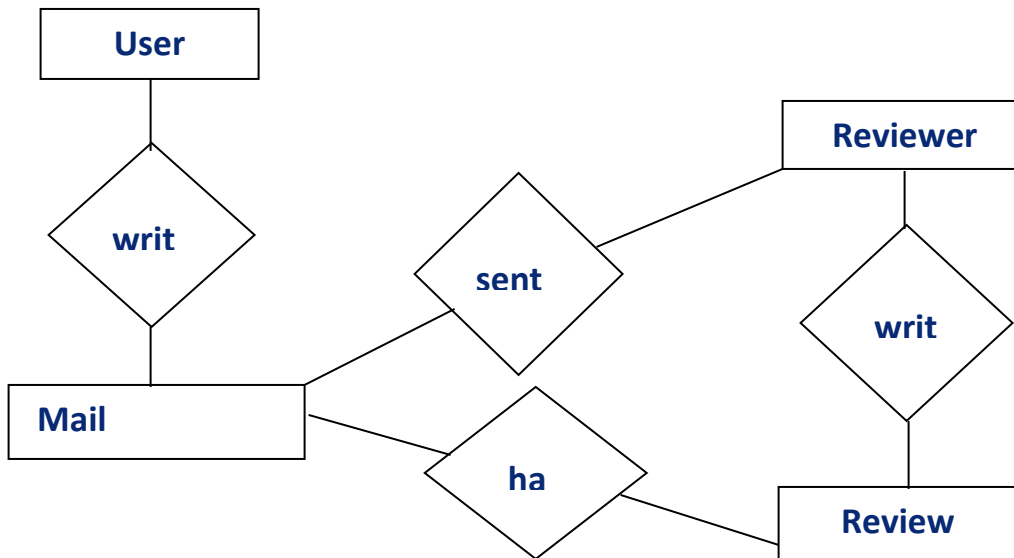
below.

Figure 3 - Logical Structure of the Article Manager Data

The data descriptions of each of these data entities is as follows:

User Data Entity

Data Item	Type	Description	Comment
Name	**Text**	**Name of principle User**	
Email Address	**Text**	**Internet address**	
Article	**Pointer**	**Article entity**	**May be several**

Reviewer Data Entity

Data Item	Type	Description	Comment
Name	**Text**	**Name of principle User**	
ID	**Integer**	**ID number of Historical Society member**	**Used as key in Historical Society Database**
Email Address	**Text**	**Internet address**	
Article	**Pointer**	**Article entity of**	**May be several**
Num Review	**Integer**	**Review entity**	**Number of not returned reviews**
History	**Text**	**Comments on past performance**	
Specialty	**Category**	**Area of expertise**	**May be several**

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Review Data Entity

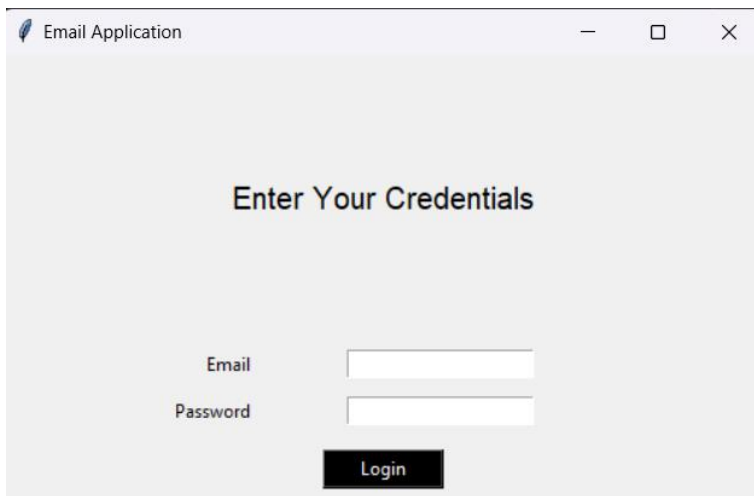| Data Item	Type	Description	Comment
Article	**Pointer**	**Article entity**	
Reviewer	**Pointer**	**Reviewer entity**	**Single reviewer**
Date Sent	**Date**	**Date sent to reviewer**	
Returned	**Date**	**Date returned; null if not returned**	
Contents	**Text**	**Text of review**	

3.3.2 Security

The server on which the Online Journal resides will have its own security to prevent unUserized

write/delete **access. There is no restriction on** *read* **access. The use of email by an User or Reviewer**

is on the client systems and thus is external to the system.

The PC on which the Article Manager resides will have its own security. Only the User will have

physical access to the machine and the program on it. There is no special protection built into this

system other than to provide the User with *write* **access to the Online Journal to publish an article.**

3.3.3

Images of our Portal:-

THE END