
SOFTWARE REQUIREMENTS SPECIFICATION

for

Grant Management System

Version 1.0

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Contents

1	Introduction	5
1.1	Purpose	5
1.2	Document Conventions	5
1.3	Intended Audience and Reading Suggestions	5
1.4	Project Scope	5
1.5	Project Benefits and End Users	5
2	Overall Description	7
2.1	Product Perspective	7
2.2	Product Functions	8
2.3	User Classes and Characteristics	8
2.4	Operating Environment	8
2.5	Design and Implementation Constraints	8
2.6	User Documentation	9
2.7	Assumptions and Dependencies	9
3	Use Cases	10
3.1	Log In	11
3.1.1	Description and Priority	11
3.1.2	Sequence	11
3.1.3	Alternative Sequence - Account Not Yet Created	11
3.2	Register	12
3.2.1	Description and Priority	12
3.2.2	Sequence	12
3.3	Post Call for Proposals	13
3.3.1	Description and Priority	13
3.3.2	Sequence	13
3.4	Assign Reviewers to Proposals	14
3.4.1	Description and Priority	14
3.4.2	Sequence	14
3.4.3	Alternative Sequence - Reviewers Already Assigned	15
3.5	Generate Reviewer Reports	15
3.5.1	Description and Priority	15
3.5.2	Sequence	15
3.6	Generate Proposal Reports	16
3.6.1	Description and Priority	16
3.6.2	Sequence	16

3.7	Set Proposal Status	17
3.7.1	Description and Priority	17
3.7.2	Sequence	17
3.8	View Call for Proposal	18
3.8.1	Description and Priority	18
3.8.2	Sequence	18
3.9	Submit Proposal	19
3.9.1	Description and Priority	19
3.9.2	Sequence	19
3.10	View Proposal Status	20
3.10.1	Description and Priority	20
3.10.2	Sequence	20
3.11	View Assigned Proposals	20
3.11.1	Description and Priority	20
3.11.2	Sequence	20
3.11.3	Alternative Sequence - Access by Email	21
3.12	Fill Out Proposal Review	21
3.12.1	Description and Priority	21
3.12.2	Sequence	22
4	External Interface Requirements	23
4.1	User Interfaces	23
4.2	Hardware Interfaces	24
4.3	Software Interfaces	24
4.4	Communications Interfaces	24
5	Other Nonfunctional Requirements	27
5.1	Performance Requirements	27
5.2	Safety Requirements	27
5.3	Security Requirements	27
5.4	Software Quality Attributes	27
5.5	Business Rules	27
6	Other Requirements	28
6.1	Appendix B: Analysis Models	28

List of Figures

2.1	Context Diagram	7
3.1	Use Case Diagram	10
3.2	Log In Sequence Diagram	11
3.3	Register Sequence Diagram	12
3.4	Post Call for Proposals Sequence Diagram	13
3.5	Assign Reviewers to Proposals Sequence Diagram	14
3.6	Generate Reviewer Reports Sequence Diagram	15
3.7	Generate Proposal Reports Sequence Diagram	16
3.8	Set Proposal Status Sequence Diagram	17
3.9	View Call for Proposal Sequence Diagram	18
3.10	Submit Proposal Sequence Diagram	19
3.11	view Proposal Status Sequence Diagram	20
3.12	View Assigned Proposals Status Sequence Diagram	21
3.13	Fill Out Proposal Review Sequence Diagram	22
4.1	Login Page	23
4.2	Registration Page	24
4.3	Administrator Dashboard	25
4.4	Grant Seeker Dashboard Mockup	26
4.5	Reviewer Dashboard Mockup	26
6.1	Database Entity Relationship Diagram	28

1 Introduction

1.1 Purpose

This SRS describes the functional and nonfunctional requirements for the GrantMS grant management system. This document was created by the GrantMS development team and is to be used by the project team to implement all necessary requirements for release of the system.

1.2 Document Conventions

Use case priority levels (utilized in Section 3) have the following definitions:

High	Necessary for system and must be completed.
Medium	Beneficial to the system and should be completed.
Low	Not necessary for the system, purely for additional polish or functionality.

1.3 Intended Audience and Reading Suggestions

This document is meant for software developers to better understand the requirements of the GrantMS system. The rest of this document contains descriptions of the system's goals, user functionalities and use cases, functional requirements, and nonfunctional requirements. To best understand the system, read the document sequentially, beginning at Section 2.

1.4 Project Scope

The GrantMS web application will allow grant committee members a platform to accept and review grant applications, as well as for grant seekers a way to submit their grant proposals in order to secure funding. Specific use cases are described in detail in Section 3.

1.5 Project Benefits and End Users

This project aims to provide a simple solution to grant management for grant committees, as well as speeding up the grant application timeline for grant seekers. Grant

committee members shall find use in the system as an application portal, with strong administrative functions whether they are using the system to sort through reviews or to generate reports. Researchers and other grant seekers on the other side of the applications will find the process simple and efficient so that they may dedicate more of their time on their projects or searching for other grants.

2 Overall Description

2.1 Product Perspective

GrantMS is a new application that provides an implementation of a grant management system for use by an organization such as Southern Connecticut State University. Figure 2.1 provides an abstraction of the system and the interactions with external users.

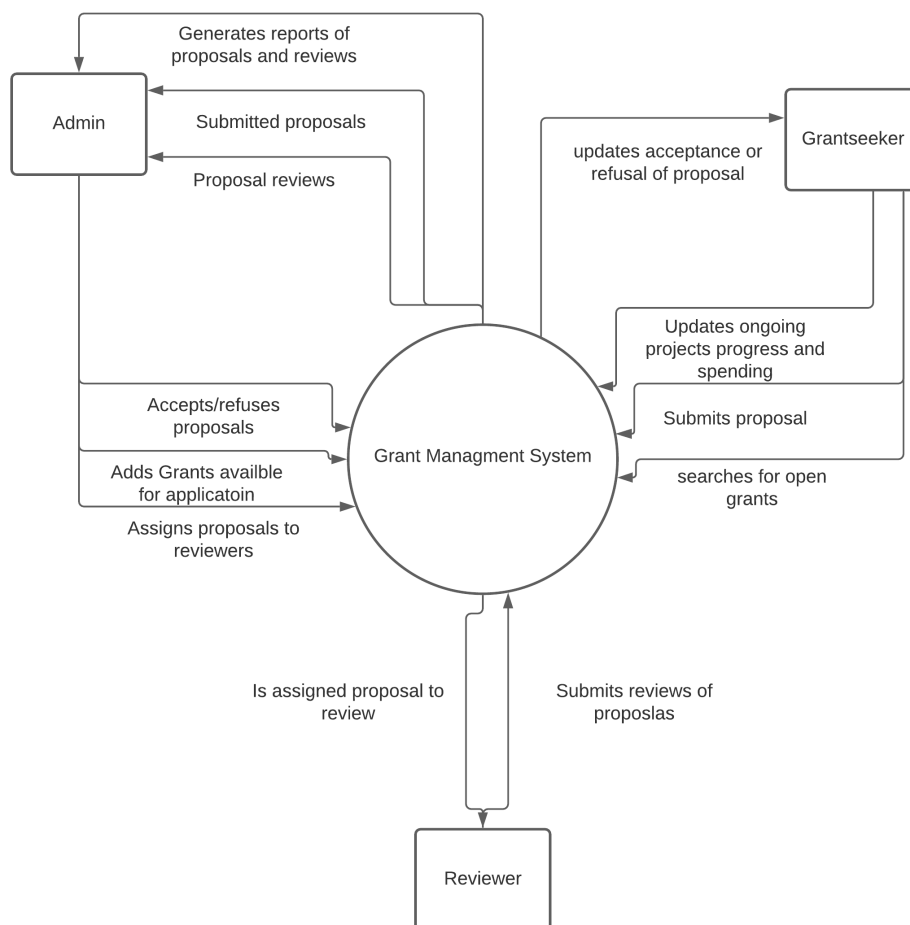


Figure 2.1: Context Diagram

2.2 Product Functions

GrantMS will support functionality for users on both the sending and receiving side of the grant application process. This includes the ability to submit grant proposals, view grant opportunities, review and score submitted proposals, and the generation of reports. All of these functions are described in detail in chapter 3.

2.3 User Classes and Characteristics

Grant Seeker	A Grant Seeker is an individual who is applying for grants, such as a researcher. The Grant Seeker will use the system to apply for grants by submitting proposals, and check the status of their applications.
Administrator	An Administrator is the chairperson of the grant committee utilizing the system. This role is responsible for posting calls for proposals, assigning reviewers to submitted proposals, and making the final decision on the acceptance or denial of proposals. Administrators will have access to all submitted proposals, and can generate reports on a single proposal's reviews and reports on all proposals received during the duration of a call for proposals.
Reviewer	A Reviewer is a member of the grant committee utilizing the system who is tasked with reviewing submitted grant proposals. These users will only have access to proposals assigned to them by the Administrator. Reviewers can score and comment on assigned proposals.

2.4 Operating Environment

GrantMS shall be accessible and functional through common web browsers, specifically Google Chrome and Mozilla Firefox. The application shall be hosted on a virtual machine server running on the Debian 10 operating system. GrantMS shall utilize uWSGI as a primary application server and Nginx as a reverse proxy in its deployment to Google Cloud Platform.

2.5 Design and Implementation Constraints

All back-end functionality will be implemented in Python, while front-end functionality will be implemented through HTML, CSS (including the Bootstrap library), and JavaScript. This system will therefore be affected by the limitations of these tools.

2.6 User Documentation

At this time, there is no plan to develop any external user documentation. We plan to develop the application to be as intuitive as possible, with prompts and error handling to ensure that each user understands the system operation. If necessary, the application may contain some form of internal manual or other documentation for users to refer to.

2.7 Assumptions and Dependencies

There are assumptions regarding the structure of the organization or grant committee utilizing the system. It is assumed that the administrator role will be the chairperson of the grant committee using the system, and that the reviewers will all be members of that same committee.

3 Use Cases

The following section defines the features of the system as use cases. These use cases are illustrated in Figure 3.1 as a use case diagram. Each use case is specified with a description, (tentative) sequence outline, sequence diagram, and priority.

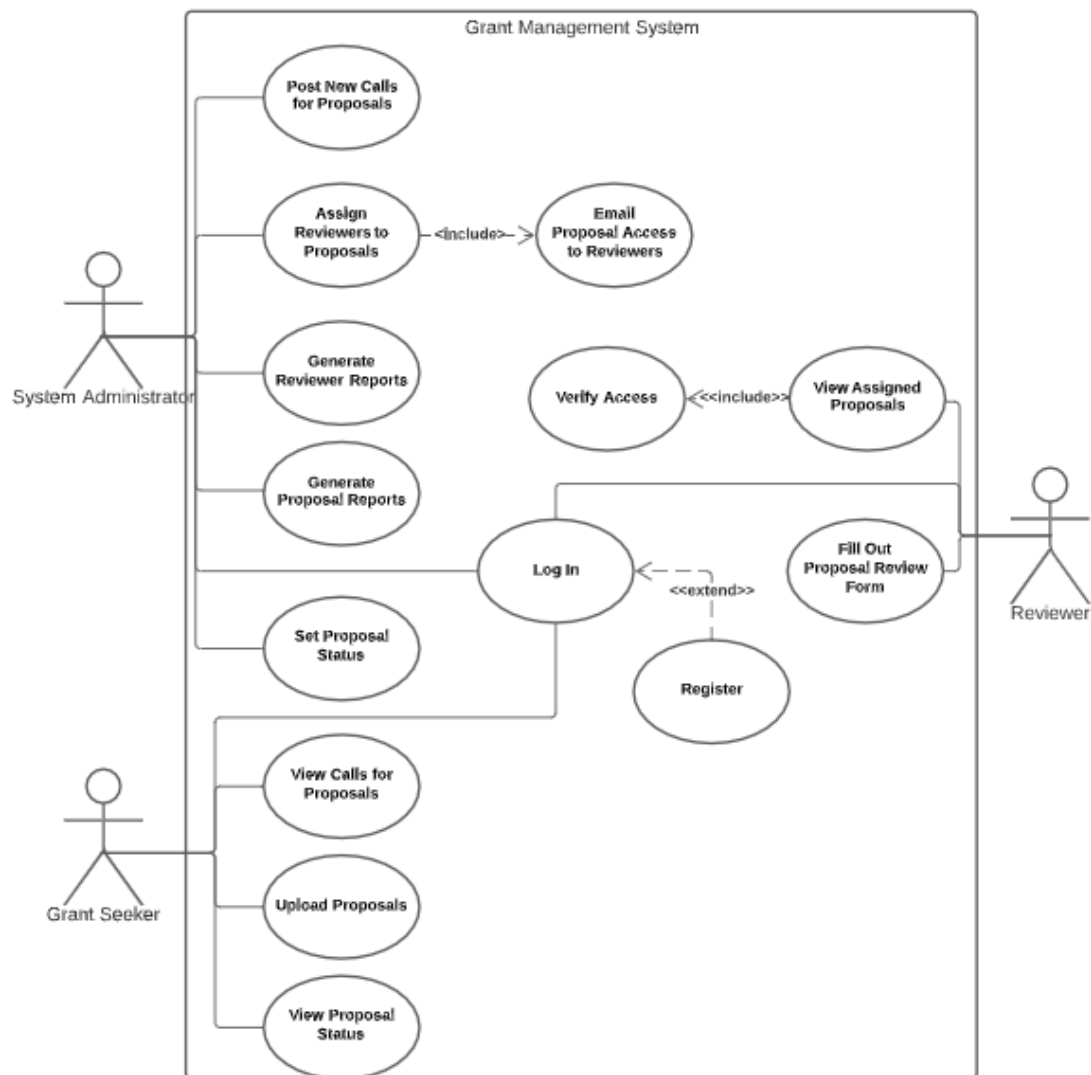


Figure 3.1: Use Case Diagram

3.1 Log In

3.1.1 Description and Priority

A user of any user may log in to the system to access its features. Priority - High.

3.1.2 Sequence

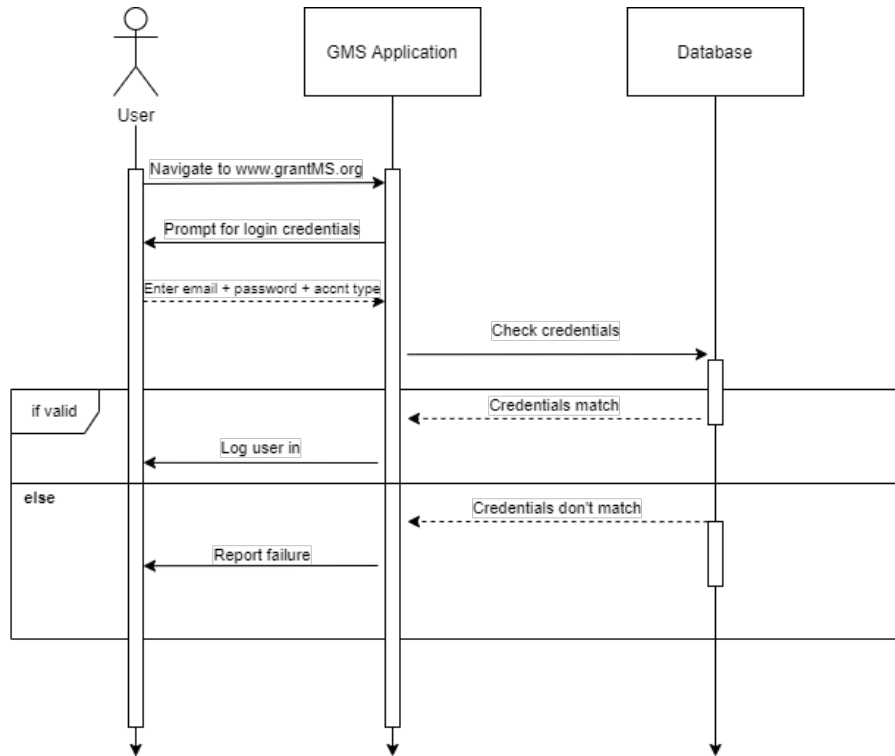


Figure 3.2: Log In Sequence Diagram

1. User opens web browser and navigates to www.grantMS.org
2. System prompts user to enter credentials before accessing the site
3. User enters in email and password, as well as user role to log in as
4. System authenticates credentials, logs user in
5. User has access to his role's view of the site

3.1.3 Alternative Sequence - Account Not Yet Created

1. See Register (Section [3.2](#))

3.2 Register

3.2.1 Description and Priority

A user may register and create credentials to access the system. Priority - High.

3.2.2 Sequence

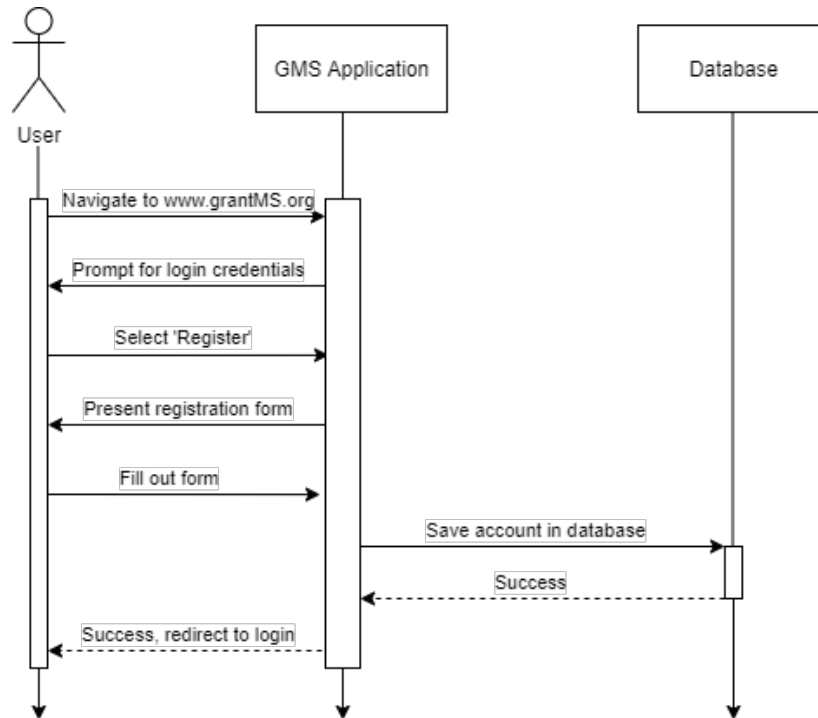


Figure 3.3: Register Sequence Diagram

An alternative sequence for Log In (Section 3.1)

1. User opens web browser and navigates to www.grantMS.org
2. System prompts user to enter credentials before accessing the site
3. User has no credentials, clicks 'Not a member? Register here'
4. System prompts user to create an account of a specific type
5. User enters in account information, submits form
6. System processes the account creation, and redirects user to login screen

3.3 Post Call for Proposals

3.3.1 Description and Priority

An administrator may post new grant opportunities to be viewed by grant seekers.
Priority - High

3.3.2 Sequence

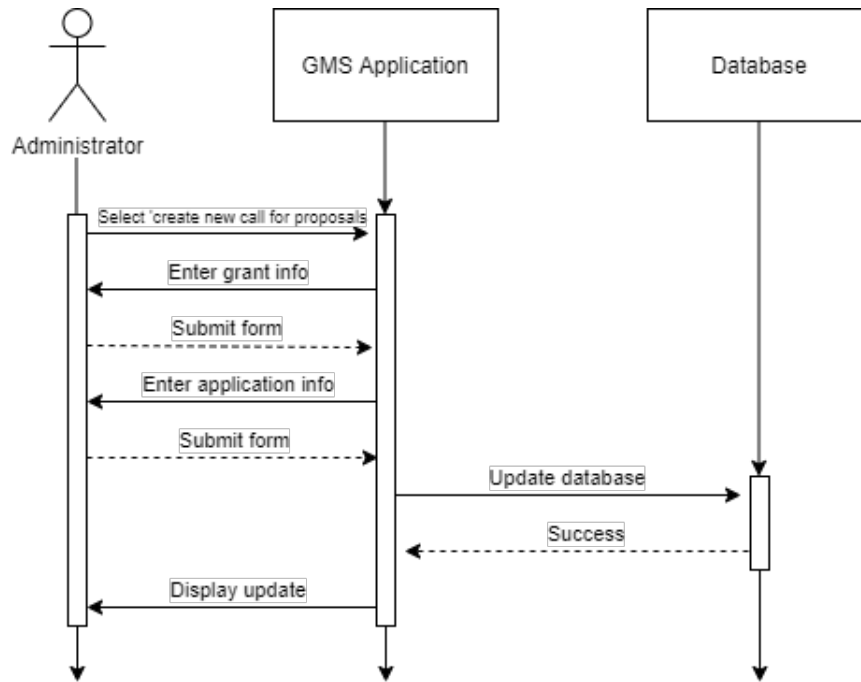


Figure 3.4: Post Call for Proposals Sequence Diagram

1. Administrator navigates to dashboard, selects 'Create new Call for Proposals'
2. System prompts administrator to enter information on the new grant
3. Administrator fills out form with information (description, award money, deadline)
4. System prompts administrator to enter necessary application information
5. Administrator enters in proposal requirements
6. System writes grant information to the internal database
7. System displays the newly added grant to the grant seeker and administrator dashboards

3.4 Assign Reviewers to Proposals

3.4.1 Description and Priority

An administrator may assign submitted proposals to reviewers so that the submissions can be scored. Priority - High

3.4.2 Sequence

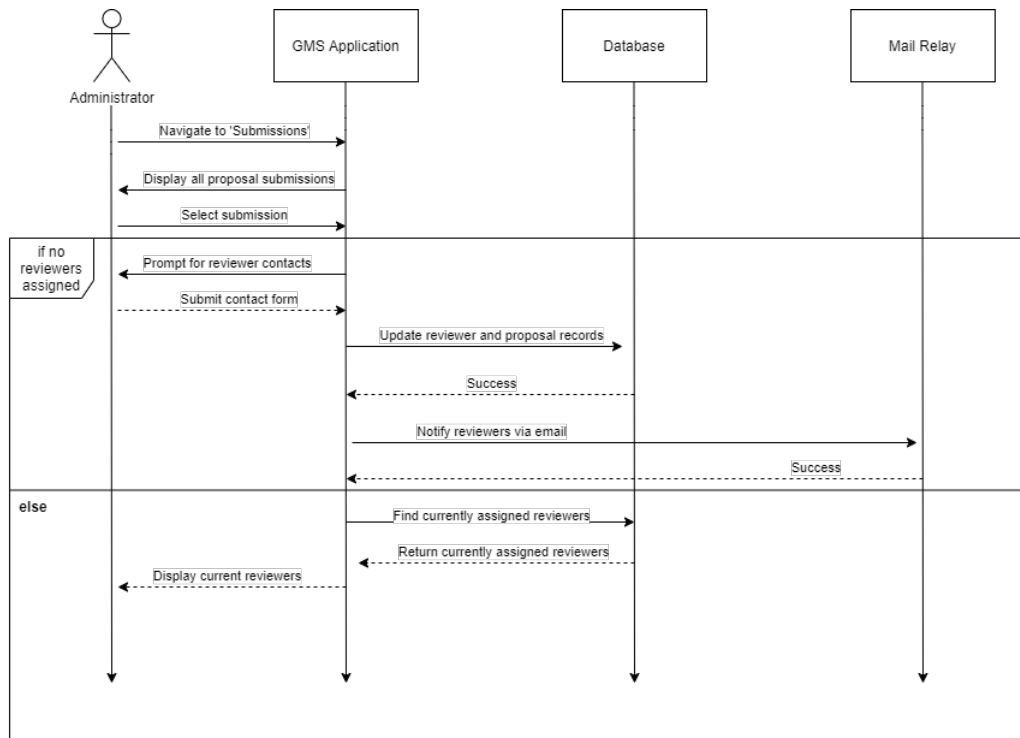


Figure 3.5: Assign Reviewers to Proposals Sequence Diagram

1. Administrator navigates to dashboard, selects 'Submissions'
2. System displays a list of all proposal submissions, organized by grant name and review status
3. Administrator selects a proposal that is pending reviewer assignment
4. System prompts the user to enter in the contact information for the reviewers to be assigned
5. Administrator enters in the emails or the reviewers

6. System updates database records to give those reviewers viewing access to the assigned proposal
7. System updates database record to show the proposal is under review
8. System sends email notification to reviewers (See ??)

3.4.3 Alternative Sequence - Reviewers Already Assigned

1. Administrator selects a proposal that is currently under review
2. System queries database to determine reviewer submission status
3. System displays which reviewers have completed their reviews

3.5 Generate Reviewer Reports

3.5.1 Description and Priority

An administrator may generate a report of the compiled reviews for a single proposal.
Priority - High

3.5.2 Sequence

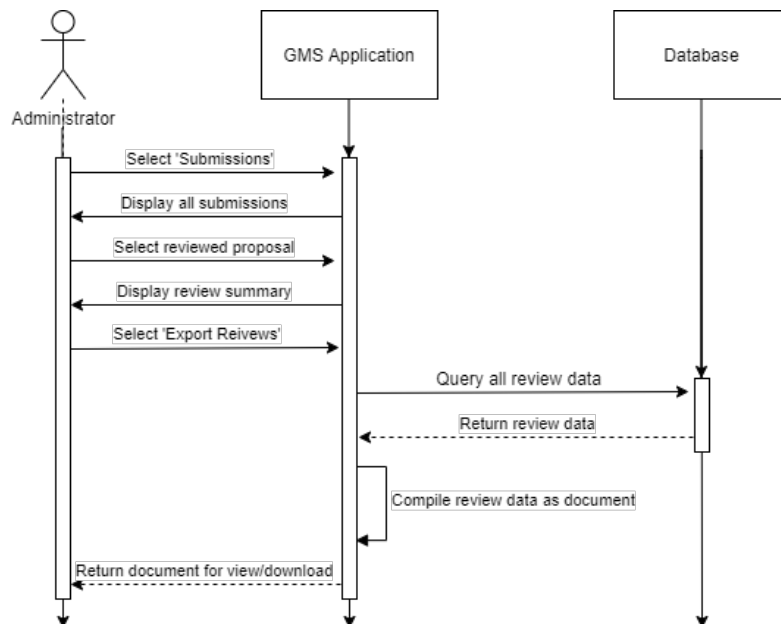


Figure 3.6: Generate Reviewer Reports Sequence Diagram

1. Administrator navigates to dashboard, selects 'Submissions'
2. System displays a list of all proposal submissions, organized by grant name and review status
3. Administrator selects a proposal that has been completely reviewed
4. System displays the names of the reviewers and a summary of the scores
5. Administrator selects 'Export Reviews'
6. System gathers each review's information from database
7. System generates a single document with each reviewer's score and comments
8. System displays compiled report
9. Administrator can view or download the report.

3.6 Generate Proposal Reports

3.6.1 Description and Priority

An administrator may generate a report summarizing the status of all proposals received during an application window. Priority - Medium

3.6.2 Sequence

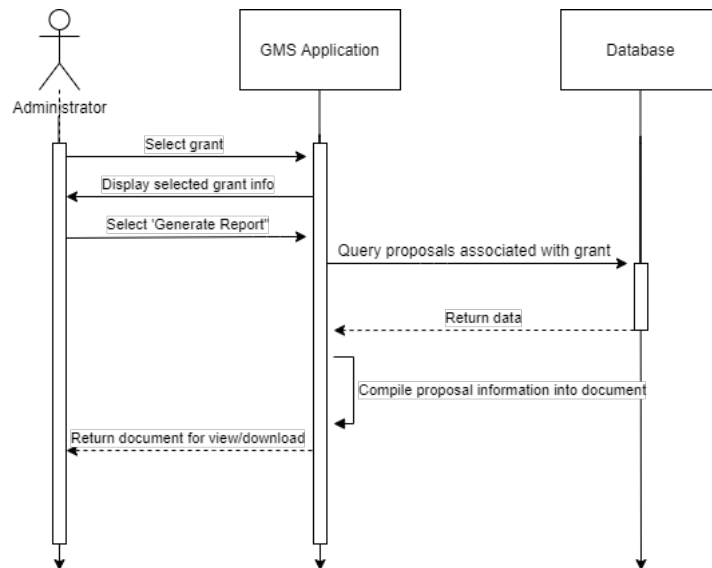


Figure 3.7: Generate Proposal Reports Sequence Diagram

1. Administrator navigates to dashboard, selects a specific grant
2. System queries database for information on the selected grant
3. System displays general grant information, submissions
4. Administrator selects 'Generate Report'
5. System queries database for associated proposals and proposal status
6. System compiles the information into a single document (applicant name, proposal date, proposal status, etc)
7. System displays compiled report
8. Administrator can view or download the report.

3.7 Set Proposal Status

3.7.1 Description and Priority

An administrator may make a final decision on the acceptance or denial of a proposal.
Priority - High

3.7.2 Sequence

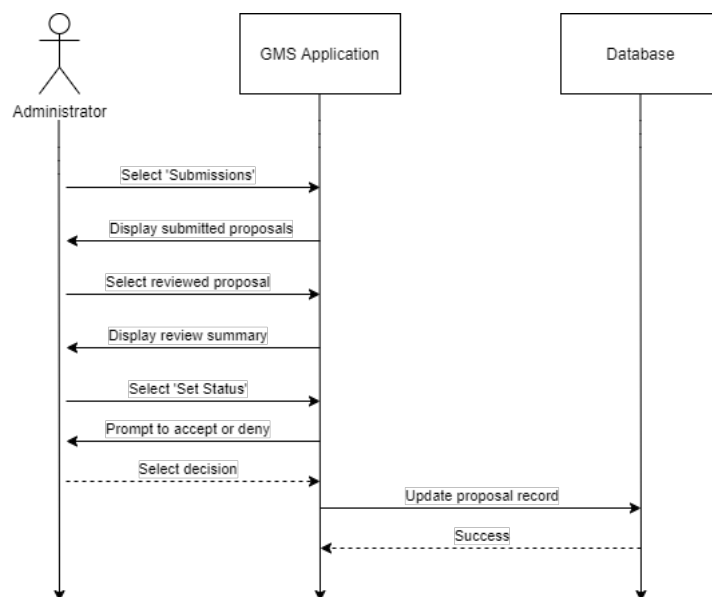


Figure 3.8: Set Proposal Status Sequence Diagram

1. Administrator navigates to dashboard, selects 'Submissions'
2. System displays a list of all proposal submissions, organized by grant name and review status
3. Administrator selects a proposal that has been completely reviewed
4. System displays the names of the reviewers and a summary of the scores
5. Administrator views reviews, and selects 'Set Status'
6. System prompts administrator to accept or deny proposal
7. Administrator selects 'Accept' or 'Deny'
8. System updates database with the proposal status

3.8 View Call for Proposal

3.8.1 Description and Priority

A grant seeker may view an organization's current active calls for proposals. Priority - High

3.8.2 Sequence

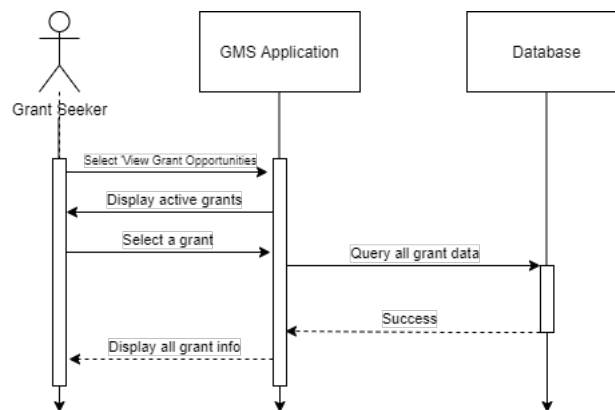


Figure 3.9: View Call for Proposal Sequence Diagram

1. Grant seeker navigates to dashboard, selects 'Grant Opportunities'
2. System queries database for all active grants submitted by the administrator
3. System displays list of active grant opportunities by deadline date

4. Grant seeker selects a grant
5. System gathers more information about the grant from database
6. System displays call for proposal, with grant summary, award money, deadline, etc
7. Grant seeker can view information and requirements about the selected grant.

3.9 Submit Proposal

3.9.1 Description and Priority

A grant seeker may submit proposals to grants to be reviewed by the grant committee.
Priority - High

3.9.2 Sequence

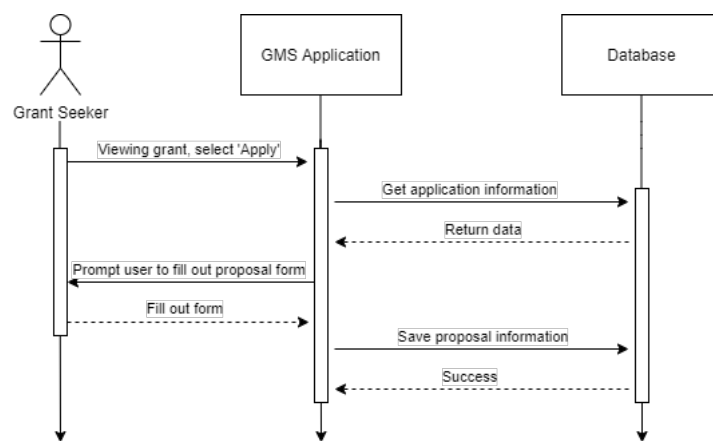


Figure 3.10: Submit Proposal Sequence Diagram

1. Grant seeker views a grant, selects 'Apply'
2. System queries database for necessary application information
3. System prompts user to enter in proposal information for the grant that was previously specified by the administrator
4. Grant seeker fills out form with required proposal information, and submits
5. System gathers form information and saves it to database
6. System marks proposal as pending review

3.10 View Proposal Status

3.10.1 Description and Priority

A grant seeker may view the status of his submitted proposals. Priority - High

3.10.2 Sequence

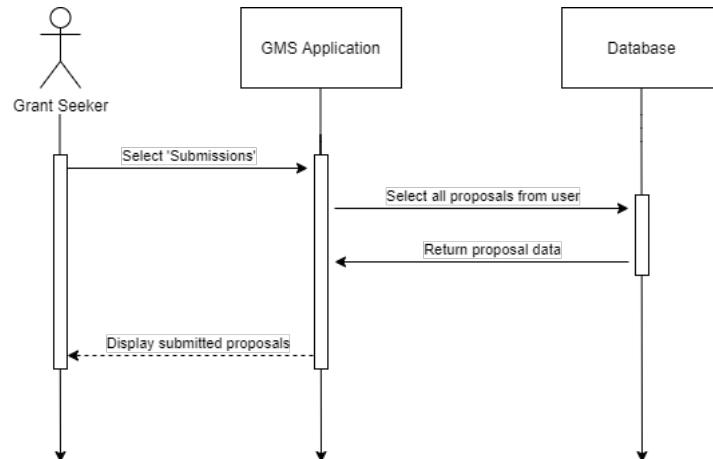


Figure 3.11: view Proposal Status Sequence Diagram

1. Grant seeker navigates to dashboard, selects 'Submissions'
2. System queries database for the specific user's submissions and status
3. System displays list of submissions, with review and acceptance status

3.11 View Assigned Proposals

3.11.1 Description and Priority

A reviewer may view proposals. For each proposal, viewing permissions are limited to the reviewers they have been assigned to by the administrator.

3.11.2 Sequence

1. Reviewer navigates to dashboard, selects 'Assignments'
2. System queries database for all pending proposals assigned to this specific reviewer
3. System displays list of proposals
4. Reviewer selects a proposal from the list

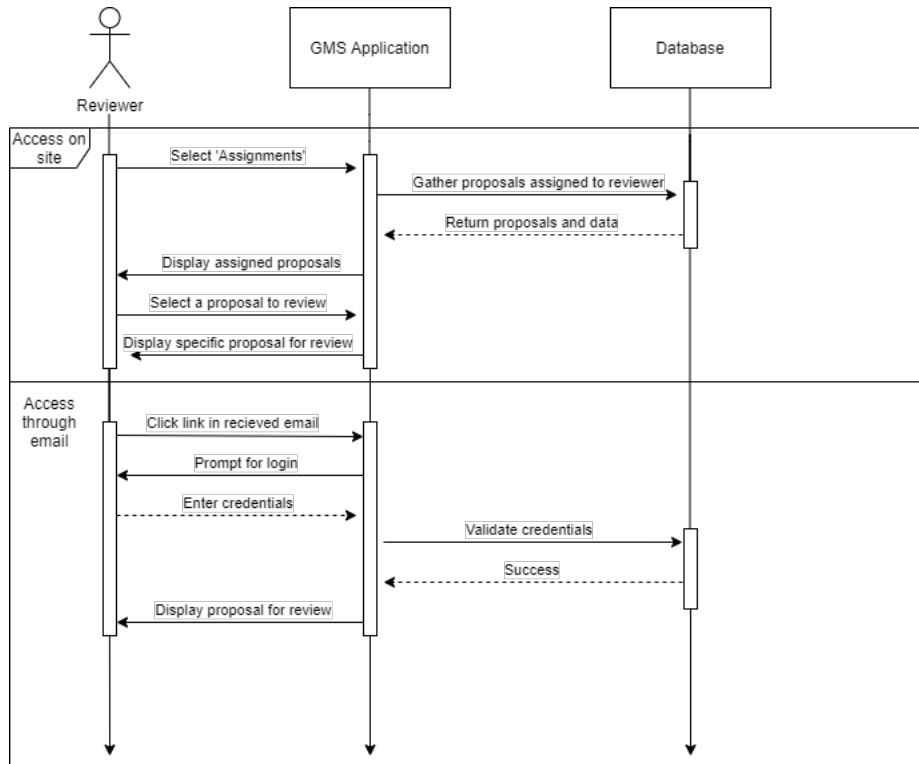


Figure 3.12: View Assigned Proposals Status Sequence Diagram

5. System gathers submitted information for the specified proposal and displays it for the reviewer

3.11.3 Alternative Sequence - Access by Email

1. Administrator assigns reviewer to proposal (see 3.4)
2. System generates notification message and link for the specified proposal
3. System sends out external notification via email(either through SMTP server or mail relay)
4. Reviewer checks email, selects link
5. System displays the proposal

3.12 Fill Out Proposal Review

3.12.1 Description and Priority

A reviewer may score and comment on assigned proposals. Priority - High

3.12.2 Sequence

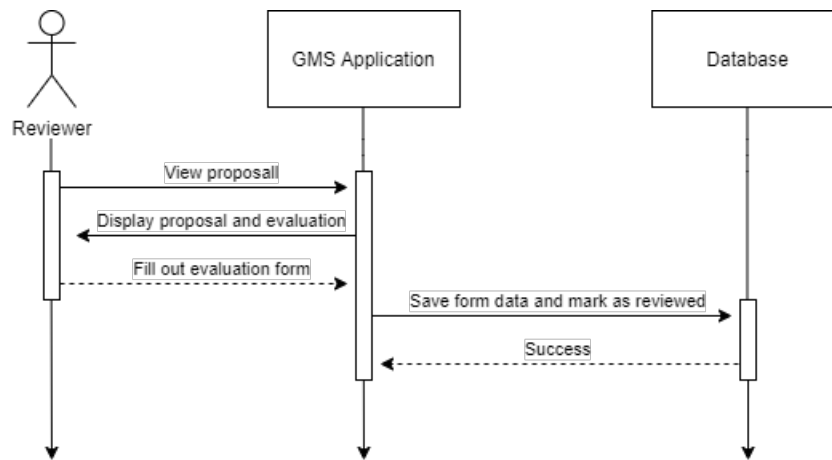


Figure 3.13: Fill Out Proposal Review Sequence Diagram

1. Reviewer views specific proposal
2. System prompts reviewer with evaluation form
3. Reviewer fills out form with scores and comments
4. System saves the review information, and marks proposal as reviewed for this reviewer

4 External Interface Requirements

4.1 User Interfaces

The web pages will contain consistent styling and color themes. A persistent navigation bar at the top of each page will allow users to quickly navigate as needed. The following are our current examples of our webpage layouts, starting with the pages we've completed and moving on to mockups we have yet to implement yet. First, we have a fully implemented login and registration screen (Figures 4.1 and 4.2). Each account type will have its own central dashboard page, displaying information and tasks specific to that account type (Figures 4.4, 4.5, and 4.3).

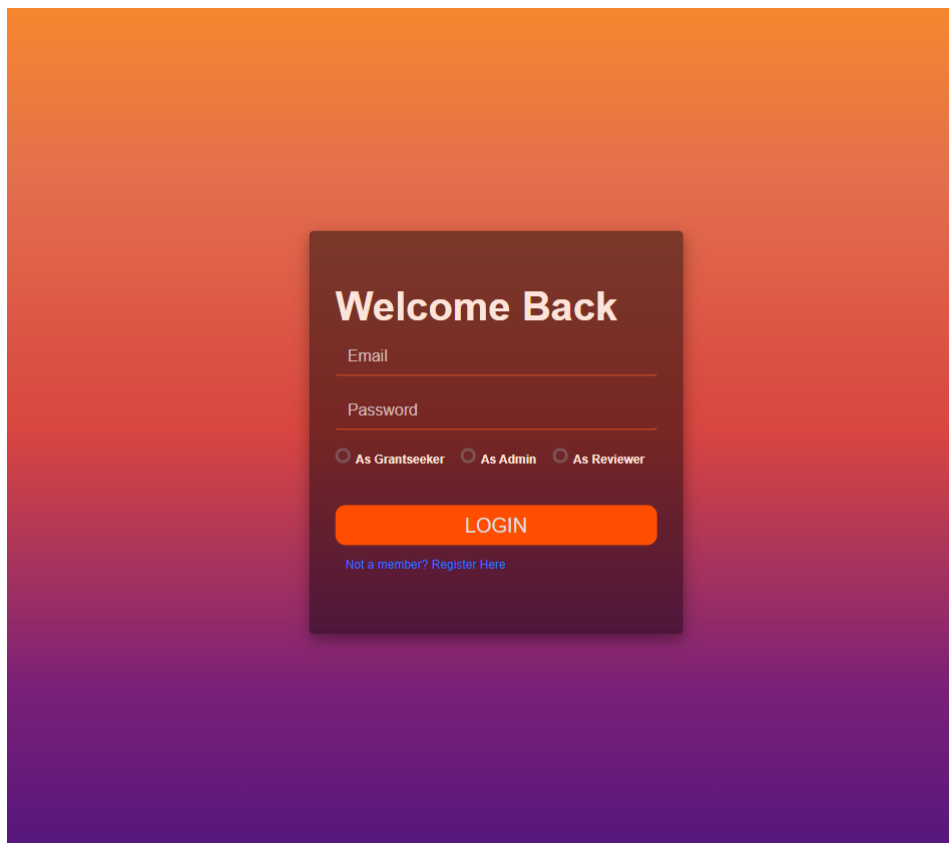


Figure 4.1: Login Page

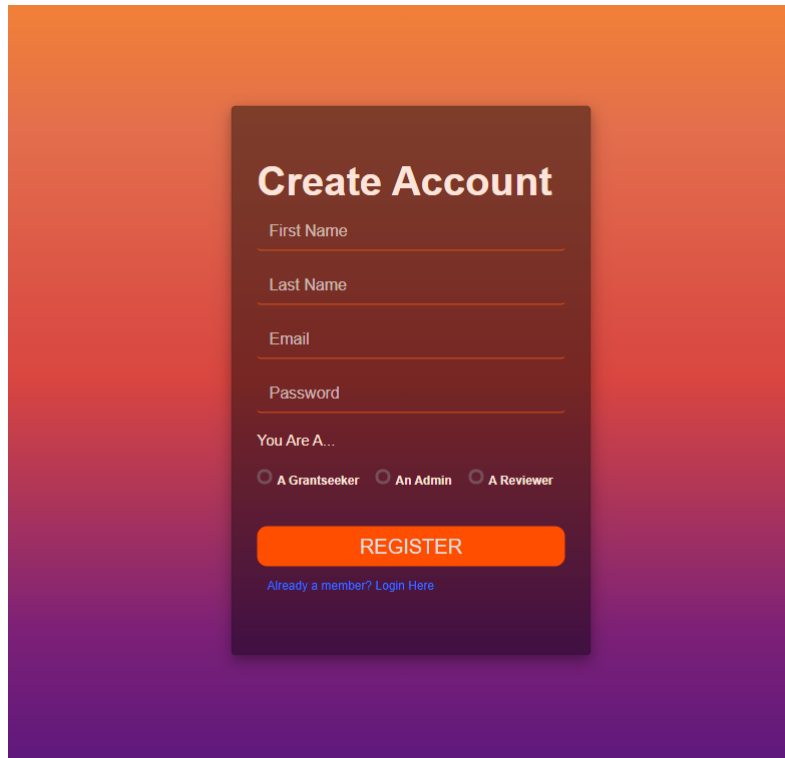


Figure 4.2: Registration Page

4.2 Hardware Interfaces

As a web application existing on the cloud, there are no identifiable hardware interfaces.

4.3 Software Interfaces

The GrantMS system will interface directly with a SQLite database hosted on the same server as the application. These database interactions will primarily be the addition of data, such as the proposal and review information, but this database will also be used to track and determine user permissions, such as the user's allowed to view specific proposals. The full entity relationship diagram can be viewed in [Figure 6.1](#)

4.4 Communications Interfaces

The system shall be accessible on the internet through a domain name. Connection with the application will be secure, with a valid TLS certificate installed on the domain enabling HTTPS interactions. The system shall utilize a form of e-mail communication, either through a relay service or SMTP server, to handle external notifications.

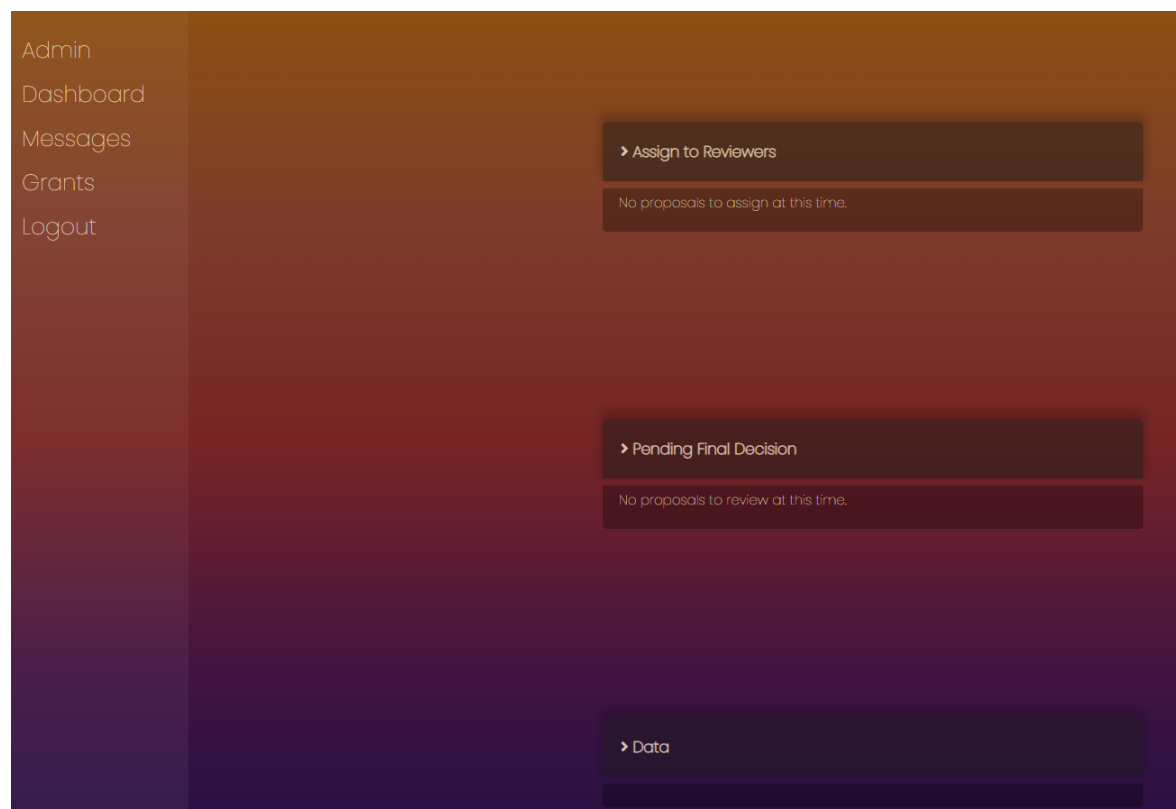


Figure 4.3: Administrator Dashboard

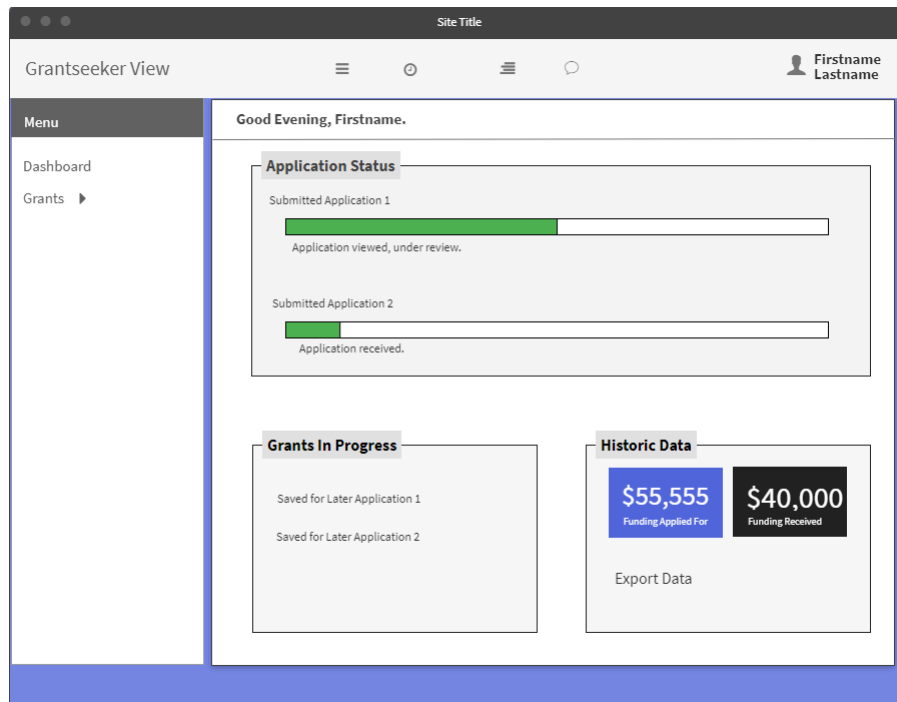


Figure 4.4: Grant Seeker Dashboard Mockup

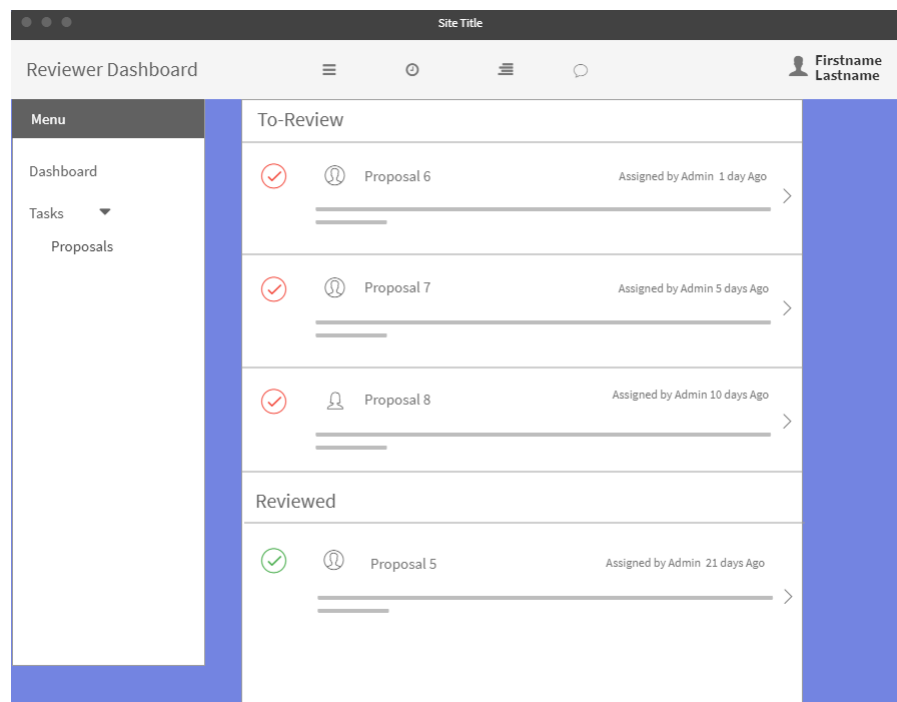


Figure 4.5: Reviewer Dashboard Mockup

5 Other Nonfunctional Requirements

5.1 Performance Requirements

There are no specific quantifiable performance requirements at this time. However, the system shall support access by multiple users at the same time, and the system shall update itself in real-time.

5.2 Safety Requirements

There are no identifiable safety requirements at this time.

5.3 Security Requirements

All traffic to the web application will be encrypted with HTTPS redirects. All user types must log in to gain access to the system. The system administrator shall be the only user capable of posting new grant opportunities. Reviewers shall only have access to proposals assigned to them by the administrator.

5.4 Software Quality Attributes

The GrantMS system shall demonstrate usability through a clear interface and helpful instruction to guide the user through system processes. All forms and inputs will implement clear error handling notifications to ensure that users understand how to use the system.

5.5 Business Rules

Each user type has access to the least amount of database information necessary to ensure that non-administrative users (grant seekers and members of the grant committee) cannot access sensitive information.

6 Other Requirements

6.1 Appendix B: Analysis Models

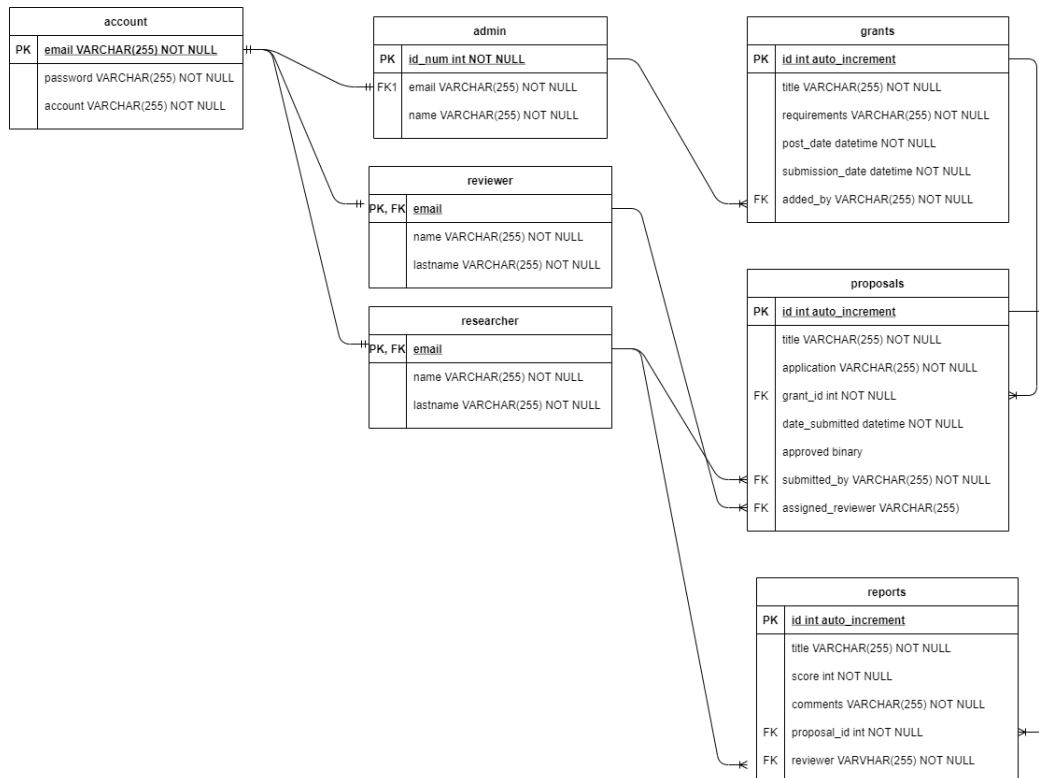


Figure 6.1: Database Entity Relationship Diagram