

UMGC Capstone Project Proposal Management System (CaPPMS) Software Requirement Specification Version 2.0

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Software Requirement Specification Approvals

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Revision History

Date	Version	Description
09/08/2020	1.0	Initial SRS Document Release
09/29/2020	2.0	<p>Section 3.1:</p> <ul style="list-style-type: none">• Added caption to table• Updated acceptance criteria to better align with test plan• Updated REQ-1.21 to reflect the exclusion of comments during export instead of being a duplicate of REQ-1.16 <p>Section 3.3: Updated Supplementary Requirements</p> <p>Use case 2, 7, 8, and 10: added a title to the data being entered</p>

1. Introduction

The University of Maryland Global Campus (UMGC) Capstone Project Proposal Management System (CaPPMS) is designed to assist the professor with collecting, reviewing, updating, and exporting project ideas for the capstone class. This web-based application will be used by external entities to submit detailed proposals of projects. The professor will export these details for the UMGC Software Engineering (SWEN) 670 students to select as their project for the semester.

1.1 Purpose

The purpose of the Software Requirements Specification (SRS) document is to outline the requirements for the CaPPMS. This is done in a joint effort with the client, to ensure alignment between the need and the resulting product.

1.2 Scope

The scope of the project will focus on creating a system that improves the project proposal submission and approval process by the professors. The system will create one central location where anyone can submit project proposals, the professors have an existing repository to select projects for the students, and an export for review by students, faculty, and project sponsor can review.

1.3 Out of Scope and Future Enhancements

A number of items were reviewed and considered out of scope for this short development period. These could be implemented at a future date.

- The webpage will not report the status of submitted projects to external users.
- A separate administration role will not be implemented.
- The system will not provide a way for professors to display specific project proposals to students. This will be managed through export.
- The system will not provide a way for professors to break down proposals into multiple phases or sub-projects. This will be a manual process.
- The system will not provide a way for professors to filter or search through project proposals by title, sponsor emails, categories, potential value or benefits. Other search options are included.
- Exported files will not be re-imported.
- Files will not be exported in XML or JSON for integration with other systems.
- The system will not provide a separate view for students to access the system.
- Students will not be able to vote for specific projects.
- Frequently Asked Questions will not be modifiable in the GUI. This must be changed in the database.
- The system will not log messages or audit user activities.

1.4 Definitions, Acronyms and Abbreviations

Table 1 Acronyms

Acronym	Definition
CaPPMS	Capstone Project Proposal Management System
SRS	Software Requirement Specification
SWEN	Software Engineering
UMGC	University of Maryland Global Campus

1.5 References

N/A

1.6 Overview

This document contains the following sections: Introduction, Description, and Requirements. The introduction section covers the purpose and scope of the document. The description section covers the overall summary and use case diagrams. The requirements section contains the actual requirements and use cases.

2. Overall Description

The basic functionality of the system is to provide external entities a method to submit projects for the SWEN 670 capstone class and allow the professors to review and export the data to share with stakeholders.

2.1 Use-Case Model Survey

There are 14 use cases that make up the requirements for this phase. See section 3 for requirement details.

Table 2 Use Cases

ID	Use Case	Description
1	View Landing Page	Enables the user to access the home page.
2	Submit Proposal Form	Enables the user submit project proposals.
3	Create New Account	Enables users to create a new user account.
4	Login Page	Enables the user to access the system using a username and password.
5	Forgot Password	Enables the user to reset password.
6	View Proposal Page	Enables the professor to view, search, filter, select, delete and export project proposals.
7	View Proposal Details	Enables the professor to view the details of the selected project proposal
8	Edit Proposal Form	Enables the professor to edit the selected project proposal
9	Delete Proposal Form	Enables the professor to delete a given project proposal
10	Export Proposal	Enables the professor to export a given project proposal in MS Word format
11	Filter Proposal	Enables the professor to filter the grid/table of project proposal based on [Approved, Rejected, Submitted]
12	Search Proposal by Status	Allows the professor to search projects based on project status. At this time this functionality is similar to the Filter Proposal.
13	FAQ	Enables the user access Frequently Asked Questions.
14	About Us	Introduces the user to the application.

2.2 Use-Case Diagrams

The following UML use case diagrams provide a high-level look at the Capstone Project Proposal Management system's capabilities and show the interaction of the system with its users.

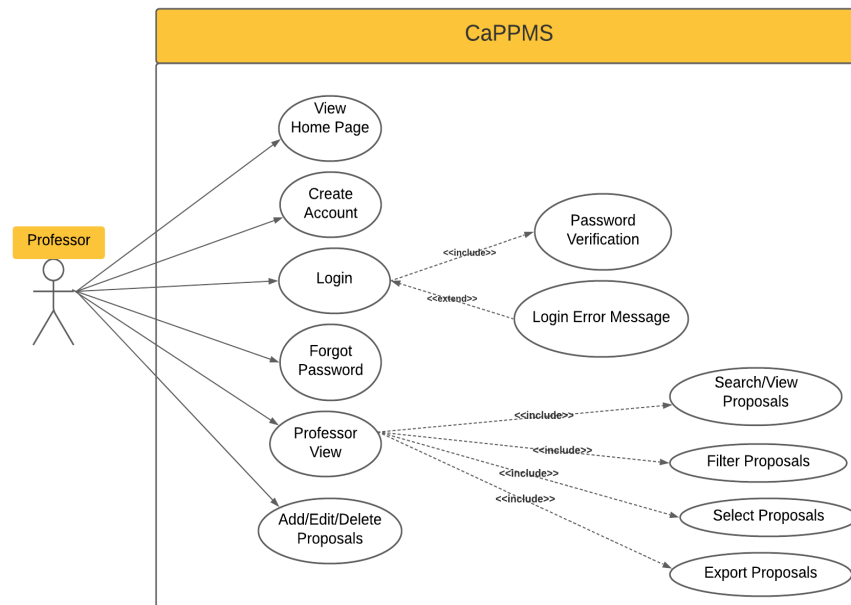


Figure 1 Use Case Diagram: Professor

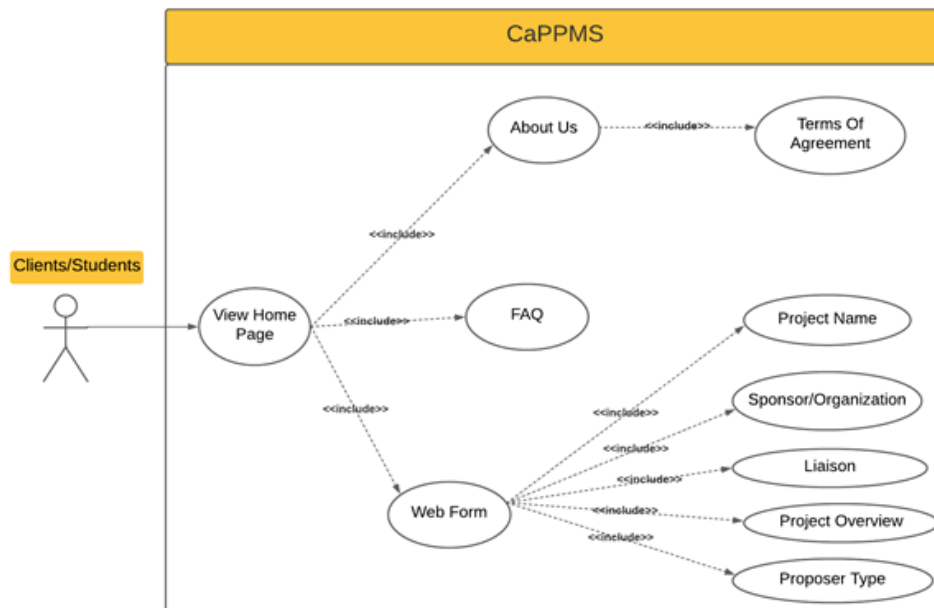


Figure 2 Use Case Diagrams: External Users

2.3 Assumptions and Dependencies

The CaPPMS is a web application therefore, it will be assumed that the all the users will have a working internet connection to access the system.

3. Requirements

3.1 Functional Requirements

Table 3 User Stories and Acceptance Criteria

ID	User Story	Acceptance Criteria
REQ-1.1	As an unauthenticated user, I want to access the SWEN 670 home page via the internet.	The home page is displayed.
REQ-1.2	As an unauthenticated user, I want to learn about the SWEN 670 capstone project.	View the homepage with introduction details for the capstone course.
REQ-1.3	As an unauthenticated user, I want to submit a project proposal idea for consideration.	Data is collected and stored in the database. The user is notified of the successful project submission.
REQ-1.4	As an unauthenticated user, I want to cancel a project proposal idea before submission.	Data is not collected and the form is cleared.
REQ-1.5	As an unauthenticated user, I want to receive notification that required data has not been entered.	The user is notified of missing required data.
REQ-1.6	As an unauthenticated user, I want to view frequently asked questions (FAQ) regarding the capstone project.	The FAQ page opens and displays the current list of frequently asked questions
REQ-1.7	As an authenticated user, I want to view submitted project proposal ideas.	The browsers display a grid with all the proposals with proposal name, status and date
REQ-1.8	As the professor, I want an option to login to the system.	The browser displays a login page.
REQ-1.9	As the professor, I want to be able to create an additional authenticated account.	The browser displays a popup that says the account was successfully created.
REQ-1.10	As the professor, I want to be notified if a new authenticated account already exists when creating.	The browser displays a popup that says the account already exists in the database.
REQ-1.11	As the professor, I want a way to reset my password.	The professor successfully logs in with the new password
REQ-1.12	As the professor, I want to login to view additional project details.	The browser displays the View Proposal Details page
REQ-1.13	As the professor, I want to search based on project status, i.e. Approved.	The search returns all projects based on the status.
REQ-1.14	As the professor, I want to filter based on project status, i.e. Approved.	The filter displays all projects based on the status.
REQ-1.15	As the professor, I want to view the details of a specific proposal.	The browser displays the View Proposal Details page.
REQ-1.16	As the professor, I want to add private comments to a specific proposal.	The browser displays a notification that says the proposal was saved successfully.
REQ-1.17	As the professor, I want to receive notification that required data has not been entered.	The browser displays a notification that the field is mandatory.

ID	User Story	Acceptance Criteria
REQ-1.18	As the professor, I want to cancel edits made to a specific proposal.	The browser displays a popup that says the edits were not saved and redirects the user to the View All Proposals page.
REQ-1.19	As the professor, I want to edit the details of a specific proposal.	The browser displays the Edit Proposal Details page with the details of the proposal populated and editable.
REQ-1.20	As the professor, I want to delete a specific proposal.	The browser displays a notification that says the proposal was deleted successfully and the grid refreshes to show the updated table.
REQ-1.21	As the professor, I do not want the private comments to be included in the export.	There are no professor comments visible on the exported file
REQ-1.22	As the professor, I want to be able to add a reason for rejection to a specific proposal.	The browser displays a notification that the Reason for Rejection field is mandatory when the status is Rejected.
REQ-1.23	As the professor, I want to export a specific proposal in Word format.	The browser downloads the exported file.

3.2 Use Case Reports

3.2.1 Use Case 1: View Homepage

Use Case	Comment
Use Case name	Homepage
Scope	CaPPMS
Primary Actor	Any unauthenticated user
Stakeholder and Interest	The user will navigate to different pages using the links on the homepage.
Preconditions	User needs to be on CaPPMS website.
Success Guarantee	User views the homepage
Main Success Scenario	
Actor	System
1. User enters the url of the website.	
	2. System displays the landing page of the website.
Extensions (Alternate Flow)	N/A

3.2.2 Use Case 2: Submit Proposal Form

Use Case	Comment
Use Case name	Submit Proposal Form

Scope	CaPPMS
Primary Actor	Any unauthenticated user
Stakeholder and Interest	The user will enter the required inputs and submit project proposal.
Preconditions	The user needs to complete the required fields in the form to successfully submit the proposal.
Success Guarantee	Project proposal will be added to the system.
Main Success Scenario	
Actor	System
1. User clicks on proposal form	
	2. System displays a web form
3. User enters the following details: <ul style="list-style-type: none"> Title Name Email address Phone Number Title of proposed project Description of proposed project Attach files (if needed) Link to user's website (if needed) Non-Functional requirements (if needed) Then the user presses Submit.	
	4. System checks that required fields are entered and adds the record into the database.
Extensions (Alternate Flow)	*User clicks on "Cancel" to cancel submission *Message "Please enter the required information", if the user fails to enter required information.

3.2.3 Use Case 3: Create new account

Use Case	Comment
Use Case name	Create New Professor Account
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	Professors will need to be registered users before being able to visualize and manage submitted projects.
Preconditions	Professor must be logged on the system
Success Guarantee	Professor will be registered in the system
Main Success Scenario	
Actor	System
1. Professor clicks on Create New Account from the "Professor View Page"	
	2. System prompts for Professor information
3. Professor enters valid email address and password(twice) and clicks on create account	

	4. System checks the password and confirms the passwords match and stores username and password into the database.
5. Professor is then allowed to login the system	
	6. System send a “Account created” email to professor.
Extensions (Alternate Flow) Email already exists on the system	Message “Professor already registered” is displayed, indicating that the professor already exists in the system is displayed.

3.2.4 Use Case 4: Login Page

Use Case	Comment
Use Case name	Professor Login
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The Professor will login to the system using his/her username and password. Upon successful authentication, the system will display the project page
Preconditions	Professor must be registered to login.
Success Guarantee	Professor is redirected to project page.
Main Success Scenario	
Actor	System
1. Professor clicks on “Site Login” menu option on the main page	
	2. System displays screen with option form professors to login to the system (username and password fields)
3. Professor enters username and password	
	4. System validates username and password against the database
5. Professor is allowed into the system and redirected to project page	
	6. System displays Project Page
Extensions (Alternate Flow) professor already registered	Message “Professor already registered” is displayed

3.2.5 Use Case 5: Forgot Password

Use Case	Comment
Use Case name	Professor Forgot Password
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will be able recover their account.

Preconditions	Professor must be registered
Success Guarantee	Professor password is updated
Main Success Scenario	
Actor	System
1. Professor clicks on the Forgot password link in the login page	
	2. System prompts professor for email stored in the database
3. Professor enters email and clicks on reset	
	4. System sends an email to professor with a Reset Password link
5. Professor receives an email containing a link and clicks on Reset password.	
	6. System prompts professor for New Password / Confirmation of New Password.
7. Professor enters new password twice	
	8. System confirms password change and send user a confirmation email
Extensions (Alternate Flow) Professor enters the wrong email and clicks on reset	A “Professor not registered” message is displayed, and professor allowed to re-enter his/her email address.

3.2.6 Use Case 6: View Proposal Page

Use Case	Comment
Use Case name	View Proposal Page
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The Professor will visualize submitted proposals and decide on an action to be taken.
Preconditions	Professor is authenticated
Success Guarantee	Project Proposals are displayed
Main Success Scenario	
Actor	System
1. Professor browses to the “View Proposal Page”	
	2. System loads the “View Proposal Page” and displays [grid with] all proposals (by Default) with links to proposal details. The grid will have Proposal Name, Status and Date submitted as the headers.
3. Professor browses list of proposals with the option to click on Proposal Details to view the detail of the proposal	
Alternative Flows	N/A

3.2.7 Use Case 7: View Proposal Details

Use Case	Comment
Use Case name	View Proposal Details
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will view the submitted proposals details and decide on an action to be taken.
Preconditions	Professor is on the “View Proposal Page”
Success Guarantee	Proposal details displayed
Main Success Scenario	
Actor	System
1. Professor clicks on “View Details” link of a specific proposal	
	2. System loads the “Proposal Details” page with non-editable form fields: <ul style="list-style-type: none"> • Project Name • Project Phase • Sponsor / Organization • Liaison Details (Contact Title, Name, Email, Phone Number) • Project Description • Website • Status • Non-Functional requirements • Reason for Rejection • Professor Comments
Alternative Flows:	N/A

3.2.8 Use Case 8: Edit Proposal Form

Use Case	Comment
Use Case name	Edit Proposal Details
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will want to update submitted proposals details (ex: Approve, Reject, Add Notes, etc.)
Preconditions	Professor is on the View Proposal Details Page
Success Guarantee	Project Proposal fields updated and stored in the database
Main Success Scenario	
Actor	System
1. Professor clicks on “Edit Details” on the selected proposal page	

	<p>2. System displays editable fields:</p> <ul style="list-style-type: none"> • Project Name • Project Phase • Sponsor / Organization • Liaison Details (Contact Title, Name, Email, Phone Number) • Project Description • Website • Status • Non-Functional requirements • Reason for Rejection • Professor Comments
<p>3. Professor updates fields as needed:</p> <ul style="list-style-type: none"> • Project Name • Project Phase • Sponsor / Organization • Liaison Details (Contact Title, Name, Email, Phone Number) • Project Description • Website • Status • Non-Functional requirements • Reason for Rejection • Professor Comments <p>Then press Save.</p>	
	4. System validates user input.
5. Professor fixes any invalid fields (if needed) and clicks on Save.	
	6. System updates proposal in the database.
Alternative Flows:	The professor click on Cancel and the data is not saved to the database.

3.2.9 Use Case 9: Delete Proposal Form

Use Case	Comment
Use Case name	Delete Proposal
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will want to delete submitted proposals
Preconditions	Professor is on the “View Proposal Details” Page
Success Guarantee	Project Proposal is permanently deleted from database
Main Success Scenario	
Actor	System
1. Professor clicks on “Delete Proposal” of a specific proposal	

	2. System prompts user to confirm proposal deletion “Delete Proposal [Yes No]”
3. Professor confirms deletion by clicking on Yes	
	4. System deletes proposal from database and displays “Proposal Deleted” and returns to an updated version of “View Project Proposals” page
Extensions (Alternate Flow)	Selection of No will return the user to the current proposal details page and the proposal remains in the database.

3.2.10 Use Case 10: Export Proposal

Use Case	Comment
Use Case name	Export Proposal
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will export proposals so they can be assessed by other professors or potential stakeholders as well as made available as capstone students.
Preconditions	Professor is on the “View Proposal Details” Page
Success Guarantee	Project Exported in MS-Word format
Main Success Scenario	
Actor	System
1. Professor clicks on “Export Proposal” button on the “View Proposal Details” Page	
	2. System generates MS-Word formatted file containing the following: <ul style="list-style-type: none"> • Project Name • Project Phase • Sponsor / Organization • Liaison Details (Contact Title, Name, Email, Phone Number) • Project Description • Non-Functional requirements • Website File is displayed when done.
3. Professor saves generated file to a user selected location.	
	4. The file is saved in the location entered.
Extensions (Alternate Flow)	The file is not saved.

3.2.11 Use Case 11: Filter Proposal

Use Case	Comment
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Use Case name	Filter Proposal
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will want to filter proposals by proposal status.
Preconditions	Professor is on the “View Proposals” page
Success Guarantee	Project Proposals displayed based on the applied filter
Main Success Scenario	
Actor	System
1. Professor clicks on “Show Approved”, “Show Rejects”, “Show all” or “Show Submitted” button.	
	2. System displays subset of proposals based on the chosen filter with links to proposal details.
3. Professor browses filtered list of proposals with the option to click on a specific proposal detail	
Alternative Flows:	N/A

3.2.12 Use Case 12: Search Proposal by Status

Use Case	Comment
Use Case name	Search Proposal by Status
Scope	CaPPMS
Primary Actor	Professor
Stakeholder and Interest	The professor will enter search criteria for proposal status.
Preconditions	Professor is on the “View Proposals Page”
Success Guarantee	Project Proposals are displayed based on the search criteria
Main Success Scenario	
Actor	System
1. Professor clicks on the search box and enters search criteria.	
	2. System displays subset of proposals meeting the search criteria with links to their respective proposal details.
3. Professor browses list of proposals with the option to click on a link to open up the proposal details.	
Alternative Flows	N/A

3.2.13 Use Case 13: FAQ

Use Case	Comment
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Use Case name	FAQ
Scope	CaPPMS
Primary Actor	Any unauthenticated user
Stakeholder and Interest	Provides a list of common questions and answers aimed at giving basic information for users of the website.
Preconditions	User needs to click “FAQ” button on CaPPMS website.
Success Guarantee	User views the “FAQ” page
Main Success Scenario	
Actor	System
1. User enters the url of the website.	
	2. System displays the landing page of the website.
3. User clicks the “FAQ” button	
	4. System displays the “FAQ” page
Extensions (Alternate Flow)	N/A

3.2.14 Use Case 14: About Us

Use Case	Comment
Use Case name	About Us
Scope	CaPPMS
Primary Actor	Any unauthenticated user
Stakeholder and Interest	The user will be able to find additional details regarding how to contact the program’s point of contact.
Preconditions	User needs to click “About Us” button on CaPPMS website.
Success Guarantee	User views the “About Us” page
Main Success Scenario	
Actor	System
1. User enters the url of the website.	
	2. System displays the landing page of the website.
3. User clicks the “About Us” button	

	4. System displays the “About Us” page
Extensions (Alternate Flow)	N/A

3.3 Supplementary Requirements

- Operating System: Windows Operating System for development, Linux for deployment
- Web Server: Springboot
- Database Server: PostgreSQL
- Database Language: SQL
- Languages and Framework:
 - Presentation Tier: JSP, getbootstrap.com, datatables.net
 - Middle Tier: Java Spring or Servlets
 - Data Tier: Spring Data Hibernate Object/Relational Mapping
- Repository: GitHub
- Production Hosting: Azure