



Course: CSCE 606 Software Engineering

Project: Brazos Valley Contract Management System (BVCOG)

# Final Progress Report

Fall 2024

## Team Members

Chi-Ming Lee

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Zhicheng Chen

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Zhaoming Xu

Nathaniel Bright

## Links

[Heroku](#),

[Slack](#),

[Pivotal](#),

[Github](#),

[YouTube](#)

## Project Summary

The **Brazos Valley Contract Management System** builds upon the work of two previous groups, offering a near-complete system upon which we could further improve. From the outset, our team tackled minor fixes, such as reintroducing email notification functionality. After addressing these tasks, the client requested a significant enhancement: implementing amendments for contracts. This required designing new pages, modifying the database, and developing supporting logic.

While the addition presented challenges, it provided an invaluable opportunity to experience dynamic project management and agile development. Despite the tight timeline, the team collaborated effectively, dividing responsibilities and producing a functional and user-friendly amendment system. The final system enables users to amend contracts in a manner parallel to the creation process, ensuring consistency and ease of use.

A note on this though, realistically, this presents many issues. While we decided to attempt it such that we would have a productive semester, it's an overall bad habit. With the request coming so late in the semester it presented a risk of not being completed. To mitigate this we kept an MVP to return to. Additionally, it spiked our velocity at this point. Our first sprint moved rather slowly as we familiarized ourselves with the code, and our third moved very quickly as we added a multitude of stories. Looking back, our team would have handled this differently by negotiating with the client. In an environment where the code was being expanded on for a larger amount of time, repeatedly doing this can result in unclean code and a growing code debt among many other things. Our team learned well from this the risks and negatives associated with this tactic for future applications.

Through this project, we honed our skills in working with legacy code, managing client expectations, and maintaining a balance between rapid development and software quality. The client's ongoing feedback during sprint reviews helped us refine the product to meet their needs, leaving them with a robust and deployable system.

## Working with Legacy Code

Inheriting a legacy codebase posed unique challenges, but it also offered a chance to develop essential software engineering skills. To effectively adapt and build upon the existing system, we employed a two-pronged approach:

1. **Codebase Analysis:** The team conducted individual and collective reviews of the codebase, leveraging existing documentation and comments to understand its architecture and functionality. Running the test suite provided insight into the intended behavior of key components.
2. **Collaboration with Previous Teams:** We reached out to the Fall 2023 project team, who graciously shared insights and helped us understand the major functionalities they had developed.

This structured approach ensured a smooth transition, enabling us to implement enhancements while preserving the integrity of the original system

## User Stories

Sprint 1: Nathaniel Bright (PO) & Kumaran Gowinsankar (SM)

- Change User Levels from "1/2/3" to "Admin/Gatekeeper/User" (ESP<sup>1</sup>: 1, Completed)
- Add "Amendment" to "Contract type" dropdown (ESP: 1, Completed)
- In the "Contract type" dropdown (ESP: 1, Completed)
- Change "Create a Contract" to "Add a Contract" (ESP: 1, Completed):

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<sup>1</sup> Estimated Story Point

## File Upload type

**Scenario:** Show down arrow on contract type dropdown

**Given** I am on the new contract page

**Then** I should see a down arrow next to the "Contract Type" dropdown

**Scenario:** Add "Amendment" to contract type dropdown

**Given** I am on the new contract page

**When** I select "Amendment" from the contract types dropdown

**And** I fill in "Title" with "AmendmentContract"

**And** I fill in "Number" with "99"

**And** I fill in the vendor field with vendor value "new"

**And** I fill in the "contract[new\_vendor\_name]" field with "Test Vendor"

**And** I select "Example User" from the point of contact dropdown

**And** I select "Program 1" from the program dropdown

**And** I select "Entity 1" from the entity dropdown

**And** I select "Continuous" from the end trigger dropdown

**And** I fill in the "contract\_starts\_at" field with "2023-04-01"

**And** I fill in "contract[amount\_dollar]" with "150"

**And** I select "month" from the amount duration dropdown

**And** I fill in "contract[initial\_term\_amount]" with "50"

**And** I select "month" from the "Initial term duration" select box

**And** I press "Create Contract"

**Then** I should see "Contract was successfully created."

## User Invite type drop-down update

**Feature:** Change labels of user levels from 1/2/3 to admin/gatekeeper/user

As an Admin

So that I can invite a new user with a certain user level

I can choose user level as admin, gatekeeper or user

**Scenario:** Check whether user levels has been updated

**Given** I am on the BVCOG CMS home page

**When** I select "Invite a User"

**Then** I should be on the New User page

**And** I should see "Admin" from "Level"

**And** I should see "Gatekeeper" from "Level"

**And** I should see "User" from "Level"

**And** I should not see "one" from "Level"


**And** I should not see "two" from "Level"

**And** I should not see "three" from "Level"

## Contract Type

Contract
Grant
Property lease
ILA
MOU / MOA
Letter of intent
Amendment

## User Invite Dropdown Update



The screenshot shows the 'User Invite Dropdown Update' process. The sidebar on the left contains the 'Invite a User' button. The main area displays the 'User Information' form with a dropdown menu for selecting a role. The dropdown is open, showing the following options:

- Admin (checked with a red checkmark)
- Program Manager
- User (marked with a red X)

The form also includes fields for First name, Last name, Email, and Password, along with buttons for 'Send invitation' and 'Back to users'.

## Sprint 2: Jingyuan Mu (PO) & Zhaoming Xu (SM)

- Successfully deliver emails for contract expiration reminder (ESP: 1, Completed)
- Successfully deliver emails for new user invites (ESP: 1, Completed)
- Successfully deliver emails for password resets (ESP: 1, Completed)

- Remove specific fields from the new contract window (ESP: 1, Completed)
- Add Contract Value fields to the new contract window (ESP: 1, Completed)
- Change toolbar colour to a lighter shade (ESP: 1, Completed)
- Close hint window by clicking outside (ESP: 1, Completed)
- Move the hint window close button to the right (ESP: 1, Completed)
- Change the hints pop up close button (ESP: 1, Completed)

Feature: Close hint window by clicking outside

As a user of any level, So that I can close the hint window easily without needing to find the close button,

I want the system to allow me to close the hint window by clicking anywhere outside the window.

Feature: Move the hint window close button to the right

As a user of any level, So that I can intuitively close the hint window,

I want the system to move the close button of the hint window to the right side of the window

**Feature:** Successfully deliver emails for contract expiration reminder  
I As a Level 3 user,  
So I can inform my managers of contracts which should be renewed  
I want the system to send me email reminders for contracts which are expiring soon

**Scenario:** Get Emails reminder about expiring contracts  
**Given** There are multiple contracts expiring in 30, 60 and 90 day from now  
**Then** I should get email about these soon to be expiring contracts

**Feature:** Successfully deliver emails for new user invites  
As a Level 3 user,  
So that I can add new user to delegate tasks  
I want the system to send newly added users an email with the details required to login to the system.

I  
**Scenario:** Get Emails for new user invite  
**Given** I submitted the new user invite form  
**Then** The newly invited user should get an email with the invite details



**Feature:** Successfully deliver emails for password resets

As a user of any level,

So that I can create a new password in case I forget my current password

I want the system to send me an email with a password reset link which opens up a webpage to reset password for my user.

**Scenario:** Get Emails for password resets

**Given** I click the forgot password link and submitted the form with my user's email

**Then** I should get an email with password reset link

**Feature:** Remove specified fields from the new contract window

**Scenario:** Specified fields are removed from the new contract window

**Given** I am on the BVCOG CMS home page

**Then** I select "Create a Contract"

**Then** I should not see the "Interim Amount" field

**And** I should not see the "per day/month/year" field

**And** I should not see the "Initial Term" field

**And** I should not see the "Initial Term duration" field

**And** I should not see the "Value Type" field

**Feature:** Add Contract Value field to the new contract window

**Scenario:** Contract Value field is added and correctly configured

**Given** I am on the BVCOG CMS home page

**Then** I select "Create a Contract"

**Then** I should see the "Contract Value" field

**And** "Contract Value" field should have a maximum value of \$99 million

**And** "Contract Value" field should be optional

## 1. Contract Expiry Email

### REMINDER: Contract expiring soon

This is a friendly reminder that your contract, <Contract Title>, with <Associated Vendor> will be expiring on <Expiration Date>. You have \_\_\_\_ extensions remaining on this contract. Please take the appropriate actions to end or renew this contract.



### REMINDER: Automatic Reports – Expiration Report

#### Contracts Expiring in the Next 30 Days

Entity	Program	Contract Title	Contract Number	Vendor/Agency	Contract Type	Contract Amount
Entity 1	Program A	Contract X	12345	Vendor ABC	Type 1	\$50,000
Entity 2	Program B	Contract Y	67890	Vendor XYZ	Type 2	\$100,000

#### Contracts Expiring in the Next 60 Days

Entity	Program	Contract Title	Contract Number	Vendor/Agency	Contract Type	Contract Amount
Entity 3	Program C	Contract Z	11223	Vendor DEF	Type 3	\$75,000

#### Contracts Expiring in the Next 90 Days

Entity	Program	Contract Title	Contract Number	Vendor/Agency	Contract Type	Contract Amount
Entity 4	Program D	Contract W	44556	Vendor LMN	Type 4	\$200,000

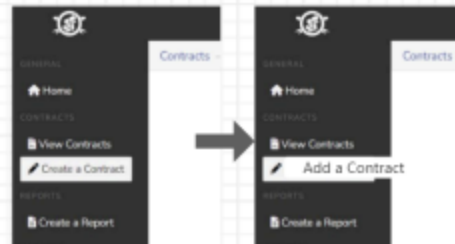


## Overall UI changes

1. add some blues, maroons, and grays to make the interface more colorful. Make sure the text is a good contrasting color to the background.



2. change create a contract to add a contract



3. modify the position and size of boxes in page.  
make the page layout harmonious

for example: change the padding and size of boxes to  
centralize the layout



## Update Fields

The image displays two screenshots of a 'New Contract' form, illustrating a field update. The top screenshot shows the initial state of the form with fields for Title, Number, Vendor, Description, Contract type, Point of Contact, Program, Entity, and Key Words. The bottom screenshot shows the same form with a dropdown menu open for the 'Length of Contract' field, displaying options like 'Contract value' and 'Contract duration'. An arrow points from the 'Length of Contract' field in the top screenshot to the dropdown menu in the bottom screenshot.

Sprint 3: Chi-Ming Lee (PO) & Xinyi Zhao (SM)

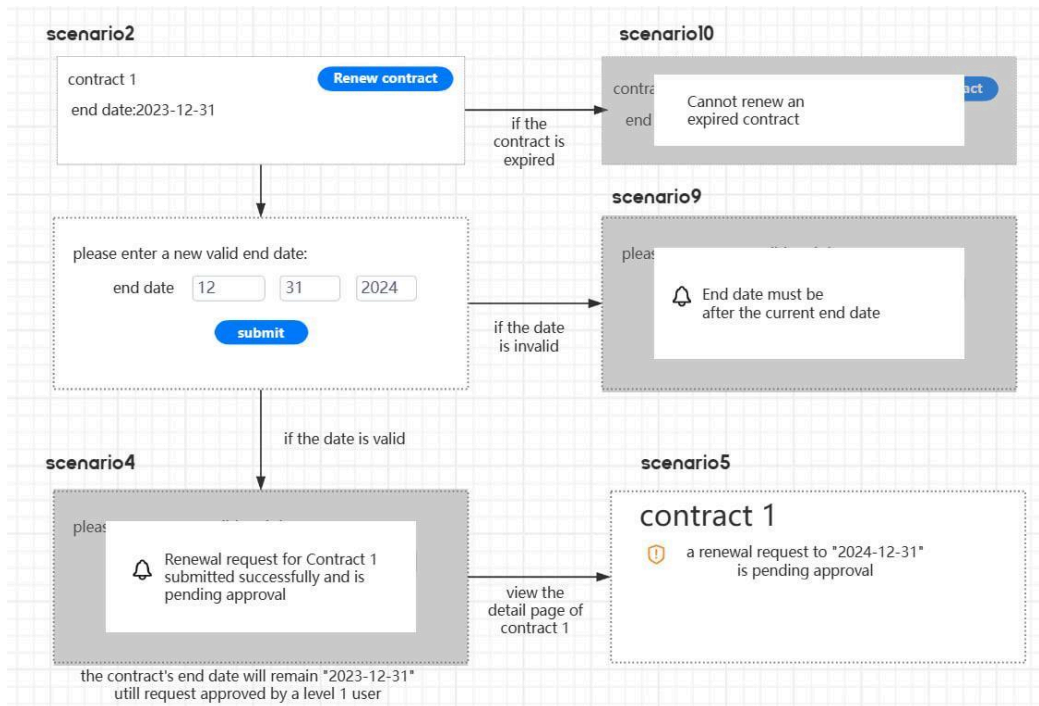
### - Add Renew Functionality (ESP: 3, Completed)

Feature: Follow "Renew" to update page content to the Renew Contract page

As a user,

So I can extend a contract's duration,

I want to click the "Renew" link next to a specific contract and be taken to a page that allows me to modify the contract's end date.



### Feature: Level 3 user Successfully Submit a Renewal Request

As a Level 3 user,

So I can request changes to a contract's duration,

I want to submit a renewal request with a new end date and receive confirmation that it's pending approval.

### - Add amendment Functionality (ESP: 3, Completed)

Feature: Follow "Amend" link to navigate to the Amend Contract page

As a user,

So I can modify contract details,

I want to click the "Amend" link next to a specific contract and access a form to update the contract's content.

## Amend Contract 4

Information

Contract Title

Contract 4

Contract ID

gv3jyu73v7

Vendor

Vendor 2

Funding Source

Contract Type

Letter of Intent

Point of Contact

BVCOG User

Program

9-1-1

Entity

BVCOG

Effective Date

2024/05/26

End Date

2024/11/25

☐ Continuous

Contract Value

70861161.0

Summary

Quia aut dolore. Sunt non nesciunt. Quos quia ut. Voluptates maiores quo. Ut cupiditate id. Cumque corrupti aut. Consequatur quasi deleniti. Excepturi labore accusamus. Veritatis nulla reiciendis. Inventore animi ut. Autem sit ut. Fugiat mollitia sapiente. Aut minima sint. Reprehenderit eius sit. Illum aut nihil.

Contract Documents

Choose files...


## - Create Contracts Modification (Renew / Amend Contracts) Page (ESP: 2, Completed)

Feature: View contract list with Renew and Amend options

As a user,

So I can manage my contracts efficiently,

I want to navigate to the "Renew/Amend Contract" page and view a list of my contracts, with "Renew" and "Amend" options available for each.



GENERAL

Home

CONTRACTS

View Contracts

Add a Contract

Renew/amend Contract

REPORTS

Create a Report

VENDORS

View Vendors

USERS

Welcome, BVCOG Admin!

Contracts

Renew/amend Contract

Contracts

Search by title or key-words

Title	Number	Operation	
fdsf	fads	Renew	Amend
dfdf	dfd	Renew	Amend
TestA	20341	Renew	Amend
TestA	1000312	Renew	Amend

**- Implement edit operation for renewal/amendment(when contract status is pending and reject) (ESP: 3, Completed)**

Feature: Edit operation for renewal/amendment

Scenario: Edit a renewal/amendment when the contract status is "pending"

Given a contract renewal/amendment is in "pending" status

When I attempt to edit the contract

Then I should be able to modify the contract details

And the changes should be saved successfully

And the contract should remain in "pending" status after editing

**- Create Modification log on the contract page (ESP: 2, Completed)**

Feature: View modification log after approval of an amendment request

As a user,

So I can see a detailed history of contract amendments,

I want to view a modification log that lists all approved changes, including dates, times, and specific modifications.

The screenshot displays a web application interface for contract management. On the left is a dark red sidebar with navigation links: GENERAL (Home), CONTRACTS (View Contracts, Add a Contract), REPORTS (Create a Report), VENDORS (View Vendors), USERS (View Users, Invite a User), ADMIN (Administration), and PROFILE (Sign Out). The main content area is titled 'Contracts - test' and features a 'test' contract card. The card includes a 'Contract Details' section with fields for Title, Number, Type, Extension Period, End Trigger, Point of Contact, Vendor, Entity, Program, Start Date, End Date, Final End Date, and Status (In Progress). Below these are buttons for 'Edit this contract' and 'Set to "In Review"'. To the right of the card is a 'Description' section with 'Key Words' and 'Description' fields. Below that is a 'Contract Documents' table with columns for File Name and Document Type. Further down is a 'Contract Decision History' section showing a list of events: 'Event: Created' (User: BVCOG Admin, Date: 2024-10-24 20:49:07 UTC), 'Event: Moved to "In Progress"' (User: BVCOG Admin, Date: 2024-10-24 20:49:07 UTC), and 'Event: Created' (User: BVCOG Admin, Date: 2024-10-24 20:49:07 UTC). At the bottom right is a 'Modification Log' table with columns for Modifier, Timestamp, Fields Changed, Old Values, New Values, and Action.

Modifier	Timestamp	Fields Changed	Old Values	New Values	Action
User A	2024-10-01 10:10:22	Contract Title	Old Contract Title	New Contract Title	Amend
User B	2024-09-28 14:10:45	Expiry Date	2024-12-31	2025-01-31	Renew
User C	2024-09-25 09:35:10	Expiry Date	2024-12-31	2025-01-31	Renew
User D	2024-09-20 11:30:55	Point of Contact, Entity	Old Contract, Old Entity	New Contract, New Entity	Amend

**- Home page should show renew/amend in progress to level 1(ESP: 1, Completed)**

Feature: Display renew/amendments in progress on the home page for Level 1 users

As a Level 1 user,

So I can easily track contracts that require my attention,

I want the home page to display a list of renewal and amendment requests that are currently in progress.

**- Home page should show amend/renew in review to level 2/3 (ESP: 1, Completed)**

Feature: Display amendments/renewals in review on the home page for Level 2/3 users

As a Level 2 or Level 3 user,

So I can efficiently review and approve amendment or renewal requests,

I want the home page to display a list of amendments and renewals that are currently under review.

**- Home page should show contracts in progress to level 1 (ESP: 1, Completed)**

Feature: Display contracts in progress on the home page for Level 1 users

As a Level 1 user,

So I can manage and complete my assigned contract tasks,

I want the home page to display a list of contracts that are currently in progress.

**- Home page should show contracts in review to level 2/3 (ESP: 1, Completed)**

Feature: Display contracts in review on the home page for Level 2/3 users

As a Level 2 or Level 3 user,

So I can efficiently review and provide feedback on contracts,

I want the home page to display a list of contracts that are currently under review.

**- In Renew/Amend contracts, be able to filter results (ESP: 1, Completed)**

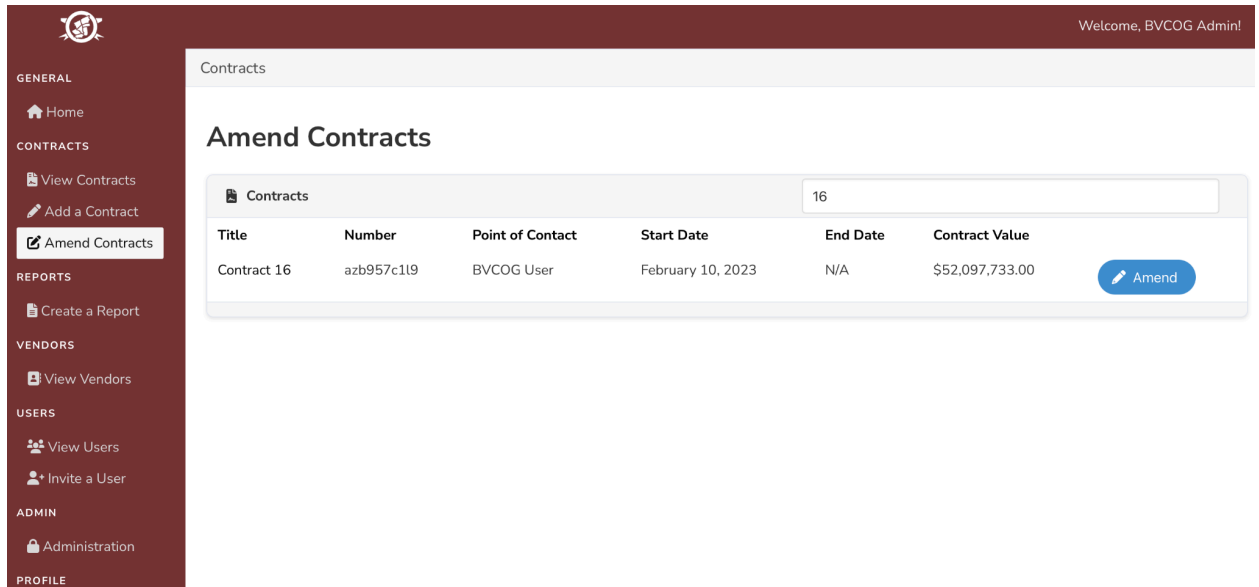
Feature: Filter results in Renew/Amend contracts

As a user managing contract renewals and amendments,

So I can quickly find specific contracts,

I want to apply filters to the list of Renew/Amend contracts based on criteria like Title.





## - Display contract modification details in contract details page (ESP: 3, Completed)

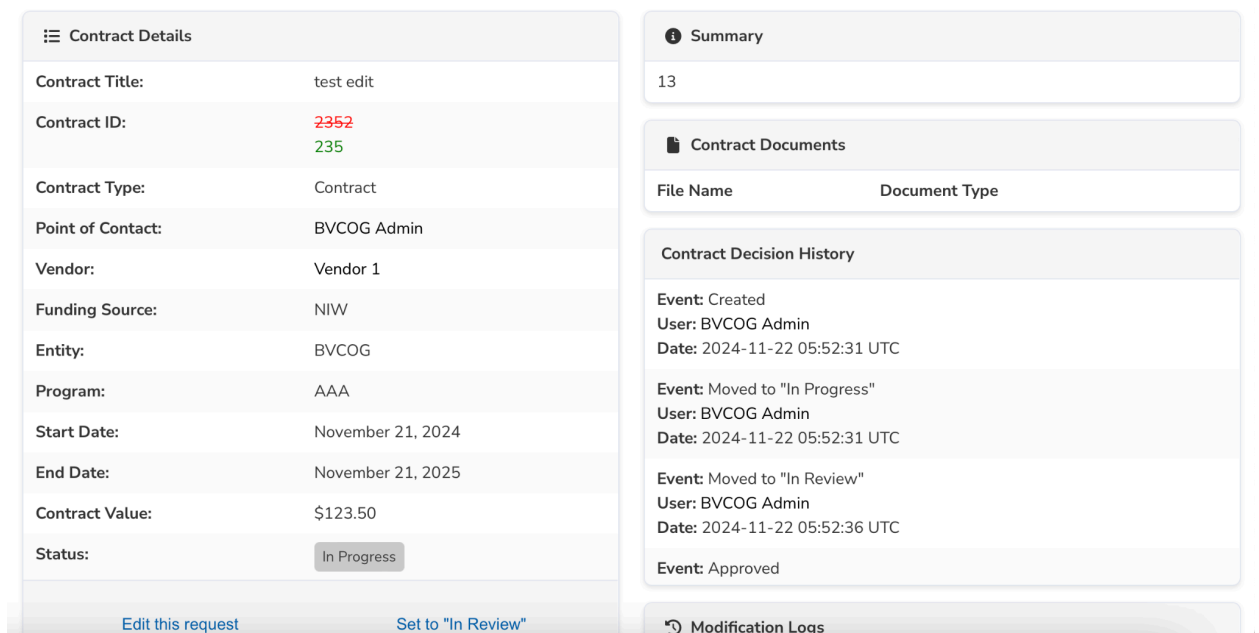
Feature: Display contract modification details on the contract details page

As a user reviewing a contract,

So I can understand the changes made to the contract,

And the changes in the modification log should be applied to the contract.

 test edit



**- Move description Box to be under Contract Documents. (ESP: 1, Completed)**

Feature: Relocate the description box on the contract details page

As a user viewing the contract details,

Given the user is on the contracts page,

The description box to be below the Contract Documents section.

**- Remove length of contract selection (ESP: 1, Completed)**

Feature: Remove length of contract selection

As a user setting the contract's effective and end dates,

So I can directly define the contract duration without additional steps,

I want the "length of contract" selection to be removed from the contract page.

**Sprint 4: Jingrui Mao (PO) & Zhicheng Chen (SM)**

**- Hard rejection for a contract (void all the amendment of a contract) (ESP: 3, Completed)**

**Feature: Hard reject operation**

Scenario: Hard reject a contract that was modified and previously approved

Given a contract is in "approved" status

When the contract is modified

And the contract status becomes "in progress"

And I hard reject the contract

Then the contract status should be "approved"

And the contract should not be modifiable after being hard rejected

Scenario: Ensure hard rejected contract cannot be modified

Given a contract is in "approved" status

When the contract is modified

And the contract status becomes "in progress"

And I hard reject the contract

And I try to modify the contract  
Then the modification should be denied  
And I should see an error message saying "Contract cannot be modified after hard rejection"

- Soft rejection reason will be displayed under Contract Title in Show Page  
(ESP: 3, Completed)

**Feature: Soft reject operation**

Scenario: Soft reject a contract without status restrictions

Given a contract is in any status  
When I soft reject the contract  
Then the contract should be in "soft rejected" status  
And I should be able to modify the contract  
And the contract should remain modifiable after multiple soft rejections

Scenario: Modify a contract after soft rejection

Given a contract has been soft rejected  
When I modify the contract  
Then the contract status should remain "in progress"  
And I should be able to soft reject again if needed

- Void and rejection will notify the modifier who amends the contract (ESP: 3, Completed)

**Feature: Successfully deliver emails for hard rejection remainder**

Scenario: Hard rejection triggers an email to the modifier

Given a contract with ID "67890" exists  
And the contract is in an "In Progress" status  
When the contract is hard rejected with reason "Final decision made"  
Then an email notification should be sent to the modifier  
And the email should contain the contract ID "67890"  
And the email should state "Final decision made"  
And the email should indicate that no further modifications are allowed  
And the contract is in an "Approved" status

**Feature: Successfully deliver emails for soft rejection remainder**

Scenario: Soft rejection triggers an email to the modifier

Given a contract with ID "12345" exists

And the contract is in a "in progress" state

When the contract is soft rejected with reason "Missing information"

Then an email notification should be sent to the modifier

And the email should contain the contract ID "12345"

And the email should state "Missing information"

And the email should include a reminder to modify and resubmit the contract

- Show all the diff information before and after contract (ESP: 2, Completed)

 test void reject

Contract Details	
Contract Title:	test void reject
Contract ID:	<div>dvddv</div> <div>dvddv123</div>
Contract Type:	Contract
Point of Contact:	Test Email Expiry reminder
Vendor:	Vendor 2
Funding Source:	NIW
Entity:	BVCOG
Program:	9-1-1
Start Date:	November 21, 2024
End Date:	<div>November 21, 2025</div> <div>N/A</div>
Contract Value:	<div>\$1.00</div> <div>\$1,231.00</div>
Status:	<div>In Progress</div>
<div><a href="#">Edit this request</a><a href="#">Set to "In Review"</a></div>	

Summary	
<div>+</div>	1123

Contract Documents	
File Name	Document Type

Contract Decision History	
Event: Created	
User: Test Email Expiry reminder	
Date: 2024-11-21 06:25:03 UTC	
Event: Moved to "In Progress"	
User: Test Email Expiry reminder	
Date: 2024-11-21 06:25:03 UTC	
Event: Moved to "In Review"	
User: Test Email Expiry reminder	
Date: 2024-11-21 06:25:05 UTC	
Event: Approved	

Modification Logs				
Modifier	Timestamp	Fields Changed	Values	Status

- Renew page should be removed. Amend page should make some attributes inalterable (ESP: 1, Completed)

Information

i

Contract Title

Contract 4

i

Contract ID

gv3jyu73v7

i

Vendor

Vendor 2

i

Funding Source

i

Contract Type

Letter of Intent

i

Point of Contact

BVCOG User

i

Program

9-1-1

i

Entity

BVCOG

i

Effective Date

2024/05/26

i

End Date

2024/11/25

☐

Continuous

i

Contract Value

70861161.0

i

Summary


Quia aut dolorem. Sunt non nesciunt. Quos quia ut. Voluptates maiores quo. Ut cupiditate id. Cumque corrupti aut. Consequatur quasi deleniti. Excepturi labore accusamus. Veritatis nulla reiciendis. Inventore animi ut. Autem sit ut. Fugiat mollitia sapiente. Aut minima sint. Reprehenderit eius sit. Illum aut nihil.

i

Contract Documents

📎

Choose files...

-  Funding Source

- ## Detailed Changes

- Implement File Upload functionality in Amend Page (ESP: 3, Completed)

**Feature:** File Upload during Contract Amendment

**Scenario:** Successfully upload a file during contract amendment

*Given* I am on the Amend Page of a contract

*When* I select a valid file to upload

*And* I submit the amendment

*Then* the file should be attached to the contract amendment

*And* I should see the uploaded file listed on the contract details page

**Scenario:** Fail to upload an invalid file during amendment

*Given* I am on the Amend Page of a contract

*When* I attempt to upload a file with an unsupported format

*Then* I should see an error message saying "Invalid file format"

*And* the file should not be uploaded

- Prevented the expiration report from being sent to multiple recipients (ESP: 1, Completed)

**Feature:** Restrict Expiration Report to a Single Recipient

**Scenario:** Send expiration report to only one designated recipient

*Given* the system is configured to send expiration reports

*When* the expiration report is generated

*Then* it should be sent to the single designated recipient

*And* no other recipients should receive the report

**Scenario:** Display error when adding multiple recipients

*Given* I am configuring the expiration report settings

*When* I attempt to add multiple email addresses as recipients

*Then* I should see an error message saying "Only one recipient is allowed"

*And* only one recipient field should be saved

- Remove amend button for level 2 user

**Feature:** Hide Amend Button from Level 2 Users (ESP: 1, Completed)

**Scenario:** Level 2 user does not see the amend button on contract page

*Given* I am logged in as a level 2 user

*When* I navigate to a contract's detail page

*Then* I should not see the amend button

**Scenario:** Level 1 user sees the amend button on contract page

*Given* I am logged in as a level 1 user

*When* I navigate to a contract's detail page

*Then* I should see the amend button

**Scenario:** Prevent level 2 user from accessing the amend page via URL

*Given* I am logged in as a level 2 user

*When* I try to access the amend page by entering the URL directly

*Then* I should receive an error message saying "Unauthorized access"

*And* I should be redirected back to the contract's detail page

## Scrum Sprint Summaries

### Sprint 1

- Investigated email functionality (reached a blocker).
- Made minor visualization changes.
- Deployed the application and began understanding the codebase.

### Sprint 2

- Completed email functionality and deployed the system.
- Implemented a slight UI redesign.
- Finalized legacy Cucumber and RSpec tests.

## Sprint 3

- Continued minor visualization updates.
- Enhanced testing.
- Developed amendment and renewal functionality.

## Sprint 4

- Finalized amendment functionality (client-requested removal of renewal feature).
- Polished code and ensured comprehensive documentation.
- Delivered a stable, deployable product

## **Client Meetings**

Date: 09-27-2024 - 13:00 - 14:00 CDT Place: BVCOG Office, Bryan, TX Participants: Susan Lightfoot and all of our team members  
Agenda: Introductory call to gather requirements

Summary In our initial meeting with the customer, we had the chance to evaluate the software's current state and better understand its needs. During this session, we reviewed the existing functionality and gained hands-on experience identifying areas that require improvement. We were informed about a major bug in the system that prevented them from using the application. Currently, the emails sent by the system are not reaching the desired recipients and this affects critical flows such as contract expiry reminders, new user invites and password resets. Therefore, we were advised to prioritize fixing this issue first. Interestingly, we also discovered that nearly half of the requested changes might not be necessary, as many of these features are already functioning as intended. For example, both the upload and hints features



were operational, alongside some minor requests. With this insight, we initiated a discussion on potential improvements to enhance the software further. We plan to revisit and expand on these ideas after completing this sprint.

Date: 10-04-2024 - 12:30 to 13:40 CDT Place: 382H Zachary Building, College Station, TX Participants: Susan Lightfoot and Nathaniel Bright

Summary: During this meeting, we reviewed with the client the current state of the program. At this point we had our first MVP with some of the UI changes and a few user stories implemented. During this meeting we brought up the blocker for deployment and email- which they pointed us to IT for the needed decryption key. Lastly, they proposed a brand new project and we discussed this with them. The project was a light budgeting "form" for the guests of their services

Date: 10-11-2024 - 12:30 - 13:30 CDT Place: 125 Spence St, College Station, TX 77843 Participants: Susan Lightfoot and all of our team members Agenda: Discussion about UI changes and future functionality improvements

Summary The meeting focused on discussing future functionality enhancements, particularly the UI changes. The team deliberated on how to improve the user interface (UI) to accommodate these changes. Several ideas were proposed for creating a more flexible and user-friendly amendment contract viewer, allowing users to easily navigate and select specific amendments. The group also reviewed potential UI modifications to integrate these changes smoothly. Future steps include developing a prototype and gathering further feedback.

Date: 10-18-2024 - 12:30 - 13:30 CDT Place: 125 Spence St, College Station, TX 77843 Participants: Susan Lightfoot and all of our team members Agenda: Discussion on debugging deployment issues, permissions adjustments, and the introduction of new contract management features.

Summary: During this meeting, we reviewed the project's current status with the client, noting that the email feature successfully passed all tests. There is an exception in the add contract function related to data conflicts in the database, but we agreed to defer detailed debugging until the final week before deployment to the client's server. We identified a permissions mismatch in the view users function, which needs to be adjusted to align with the client's requirements. Additionally, the client requested two new features: a contract renewal function, which will update the contract's end date, and a contract amendment function that will allow changes to contract content while keeping a modification log accessible at the end

Date: 10-25-2024 - 12:30 to 14:30 CDT Place: 125 Spence St, College Station, TX 77843 Participants: All of our team members

Summary: We had a meeting scheduled with the client at an agreed-upon time and location, but unfortunately, the client was unable to attend. We will reach out to the client to coordinate a new meeting time. In the meantime, our team took the opportunity to discuss the implementation of the new features and outlined specific task assignments, ensuring that each member has a clear understanding of their responsibilities.

Date: 11-05-2024 - 12:30 to 13:30 CDT Place: 125 Spence St, College Station, TX 77843 Participants: All of our team members

Summary: We held a scheduled meeting with the client on time. During the meeting, we presented the newly added amend and renew features. The client was very satisfied with these updates. Additionally, they requested that users who need to modify a rejected contract receive an email notification. We agreed to implement this change in the next sprint. We also discussed other new features and enhancements to be added in the upcoming sprint.

Date: 11-08-2024 - 12:30 - 14:30 CDT Place: 125 Spence St, College Station, TX 77843 Participants: Susan Lightfoot, Jingrui Mao, Zhicheng Chen, Xinyi Zhao, Zhaoming Xu, Chi-ming Lee. Agenda: We discussed the client's requirements in detail.

Summary The client has made the following requests: 1. Remove the renew interface and only keep the amend interface. 2. The date format should be MM/DD/YY. 3. Implement both soft and hard rejection functions. 4. Notifications should be sent to the modifier upon rejection. 5. The end date should be optional.

Date: 11-15-2024 - 12:30 to 14:30 CDT Place: 125 Spence St, College Station, TX 77843 Participants: All of our team members

Summary: We demonstrated the following features to the client: Hard Rejection, Modification Log pop-up window, Email Sending System, and the display of Soft Rejection Reasons. The client was satisfied but pointed out a misunderstanding: even if a contract is hard rejected, it can still be modified. Additionally, the client suggested renaming Hard Rejection to Void for better clarity. Meanwhile, users other than admin users can only view contracts belonging to their own entity.

## Points and Role Breakdown

### Breakdown without testing/bugfixing

Developer	Sprint 1	Sprint 2	Sprint 3	Sprint 4	Total	Percentage (86 total)
Nathaniel Bright	1	3	7	3.5	14.5	16.86%
Zhicheng Chen	0.5	1	5	6.5	13	15.12%
Kumaran Gowrisankar	0	0	0	2.5	2.5	2.91%
Chi-Ming Lee	0	3	3	6	12	13.95%
Jingrui Mao	0	2	5	5	12	13.95%
Jingyuan Mu	0.5	1	2	4	7.5	8.72%
Zhaoming Xu	0.5	0	6	6.5	13	15.12%
Xinyi Zhao	1.5	1	6	3	11.5	13.37%

### Breakdown with testing/development

Developer	Sprint 1	Sprint 2	Sprint 3	Sprint 4	Total	Percentage (98 total)
Nathaniel Bright	1	3	7	3.5	14.5	14.80%
Zhicheng Chen	0.5	1	5	6.5	13	13.27%
Kumaran Gowrisankar	0	1.5	7	4.5	13	13.27%
Chi-Ming Lee	0	3	3	6	12	12.24%
Jingrui Mao	0	2	5	5	12	12.24%
Jingyuan Mu	0.5	1	3.5	4	9	9.18%
Zhaoming Xu	0.5	0	6	6.5	13	13.27%
Xinyi Zhao	1.5	1	6	3	11.5	11.73%

A detailed breakdown including every stories that we accomplished can be found here: [📌 User Story Points](#)

## **Repo Information**

We included a README.md into the repository that specifies the prerequisites and how to install and deploy the application. You can read that [here](#).

## **Configuration Management**

We maintained a structured branching strategy, with team members working on separate branches. Sprint leaders coordinated merges into the main branch, ensuring a Minimum Viable Product (MVP) at all times. There is an obvious spike in the third Sprint, when we took on much more work. Realistically, somewhere between the 2nd and third sprints was a good pacing for us.

## **BDD/TDD Process**

We found the process to be incredibly helpful. Oftentimes, when we were faced with a problem that we didn't know the immediate solution to, the TDD process helped to make it clear. However, we did have trouble following it religiously, as we often found ourselves wanting to jump right into the code and cleaning it after. We saw the obvious value in it when having to waste time untangling things when we strayed from the process. Our github consisted of 20 pulls, 26 branches, and over 300 total commits.

## **Production Release Challenges**

The previous teams managed the documentation well overall. The only issue (like the last team) was the vagueness of the rails master key. The inability to easily retrieve this delayed the deployment and testing of the email functionality until we were able to establish contact with members of the IT department of the client. For those that may need it later, we have revised this process such that previous members or the professor may be able to find this information and groups may first direct towards them.

## **Challenges With Tooling**

Working with specific Ruby and Gem versions introduced initial conflicts. However, we adapted to the constraints and developed a robust merge request workflow. Despite occasional errors during merges, the team resolved them promptly, minimizing disruptions.

### **Other Tooling**

The Spring 2023 team used the following tools

- Devise: For user authentication and password resetting
- Devise\_inviteable: For user invites
- Kaminari: Table pagination
- Bulma\_rails: Styling
- Polar OSO: Role-based Access Control
- Whenever: Automated cron jobs

The Fall 2023 team added the following tools

- JQuery: autocomplete the vendor text entry

The Fall 2024 team added no tools

## **Notes in Retrospection**

Aside from the things mentioned above, looking back, we would modify two things in our process. First, we found it often easy to rush the user story development. Now, when we need to look back in detail and review the year, we see that we should have spent more time carefully weighing and contemplating these things. We often measure much easier problems too closely to harder problems. In our case, this resulted in oversimplifying the bigger projects. It resulted in some instability in our points since those that worked on bigger issues were under-rewarded.

Secondly, we abused the leader roles in some ways. While we didn't realize at the time we depended too much on the leaders to actually lead the push in the code. This pulled them from their abilities to perform well in the positions they

were given. Overall, while we may have stumbled along the way, we have learned a lot- often by having to pick ourselves back up. Thankfully, we will now be able to avoid these stumbling blocks in our futures, and provide insight from mistakes.