System and Software Architecture Description (SSAD)

Discovery Tool

Team 3

Josh Bendig - IIV&V

Xizhao Deng - Project manager

Jingzhou Hong - Requirement Engineer

Guancheng Liu - Tester

Michael Russo - Prototyper

Shenghao Tang - Feasibility Analyst

Fan Zhan - Software Architect

Yiming Zhang - System Architect

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Version History

Date	Author	Version	Changes made	Rationale
10/20/18	FZ	1.0	Initial draft	Initial draft for Discovery Tool SSAD
10/21/18	XD	1.1	Fixed formatting	Reviewed and small fixes for DC package
10/21/18	ST, JH	1.2	System Analysis (Content writer home page)	Need further work on remaining part
10/22/18	FZ	1.3	Update 4.1	Documentation increments
10/22/18	GL	1.4	Increments to 2.1.3	Documentation increments
10/22/18	FZ	1.5	Update 2.1.2, 4.1.2	Documentation increments

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1. Introduction

1.1 Purpose of the SSAD

SSAD provides a number of benefits for discovery-tool:
- It gives a basis for analysis of software system's behavior before the system has been built. With this documentation, team will have better understanding of the project requirements.
- It provides a basis for re-use of elements and decisions. With this documentation, the team should have the sense of which component could be reused in the future so that we could build a more extensible framework. For example, what if we add more types of the content rather than only pitches, title?
- It supports early design decisions that impact a system's development, deployment, and maintenance.
- It facilitates communication with stakeholders, contributing to a system that better fulfills their needs. With this documentation, team will have better idea about how to build a system that every member could do contribution to it. For example, with better organization, each member could be one or several API's owner in our Flask framework, and our backend system is consists of all of these APIs.
- It enables cost reduction. Software architecture is a means to manage risk and costs in complex IT projects.

1.2 Status of the SSAD

System Analysis Overview, System Analysis Rationale, Design Overview and Design Rationale have been added. This is the an early release of SSAD for Fall 2018 DC package deliverables.

2. System Analysis

2.1 System Analysis Overview

Discovery Tool is a web app based idea management system. It serves as an internal tool to System1. It provides a solution to help System1 content writers and admins to streamline, manage, accelerate their workflow. It gives the admins necessary tooling to quickly scale the team as well as content production. Overall, the system supports the team to work cross-functionally, leveraging resources to meet needs as efficiently as possible.

2.1.1 System Context

Figure 1: System Context Diagram
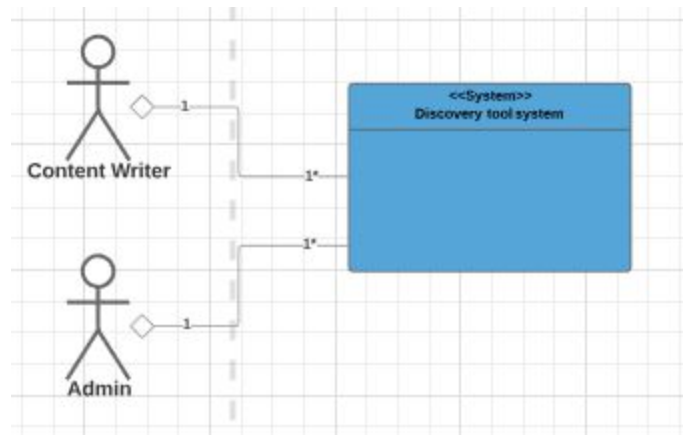
Table 1: Actors Summary

Actor	Description	Responsibilities
Content Writer (aka content creator)	Writer who draft ideas, pitch ideas, and write titles for approved pitches	- Draft ideas in vertical responsible for Pitch ideas - Upvote pitched ideas - Write title to approved ideas assigned
Content Admin	Administrators who manage the writers and review ideas at different stages of the content creation	- Control content writer access privilege - Manage pitches and titles - Assign tasks - Set targets

2.1.2   Artifacts & Information

Figure 2: Artifacts and Information Diagram
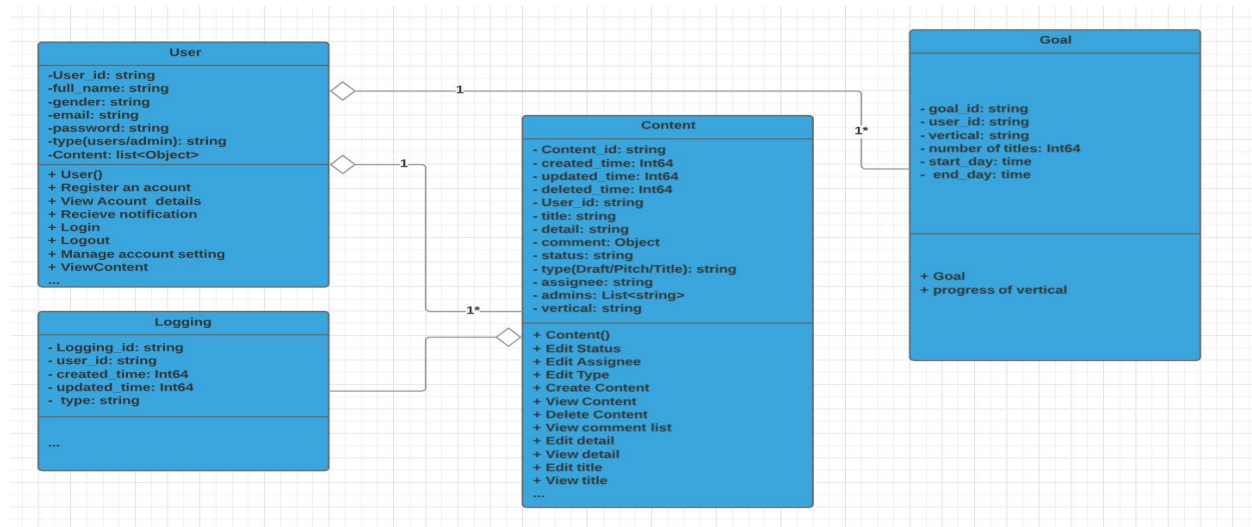
Table 2: Artifacts and Information Summary

Class	Purpose
User	User is the object who is going to use the system. It is the fundamental artifacts of the system.
Content	Content is the object that is used by users. It is the fundamental artifacts of the system.
Goal	Goal is defined by the admin to trace the plan and progress monthly
Logging	Logging traces the history change of the content status.

2.1.3 Behavior

Figure 3: Process Diagram - content admin

Figure 4: Process Diagram - content writer
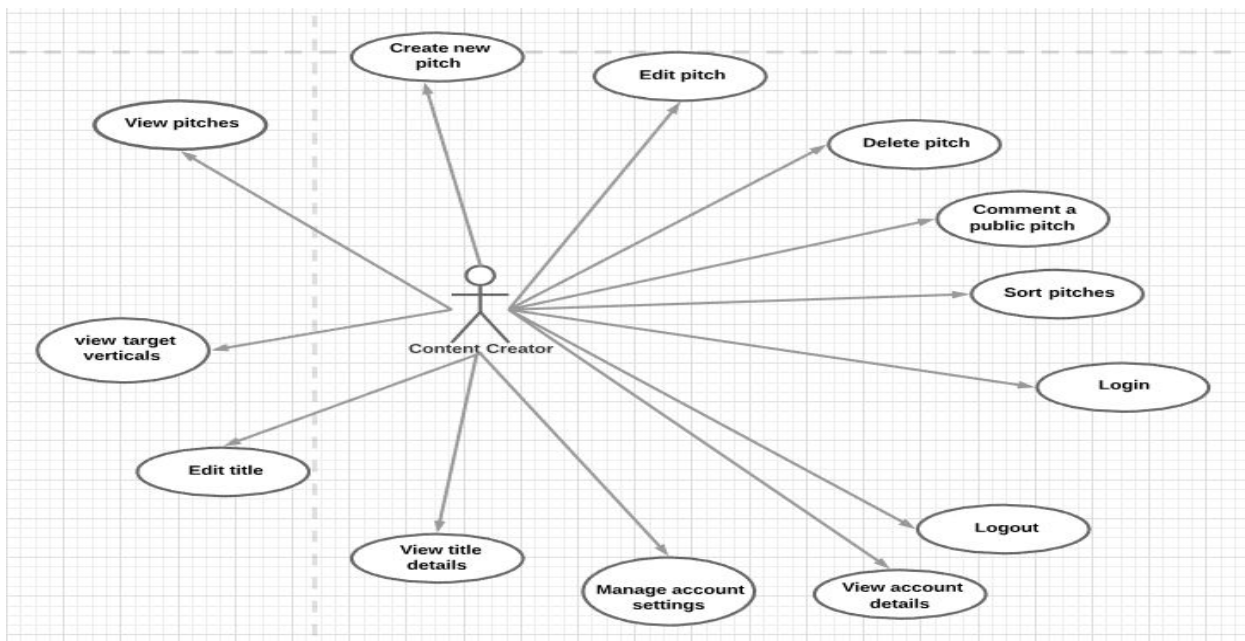
Table 3: Use Case List

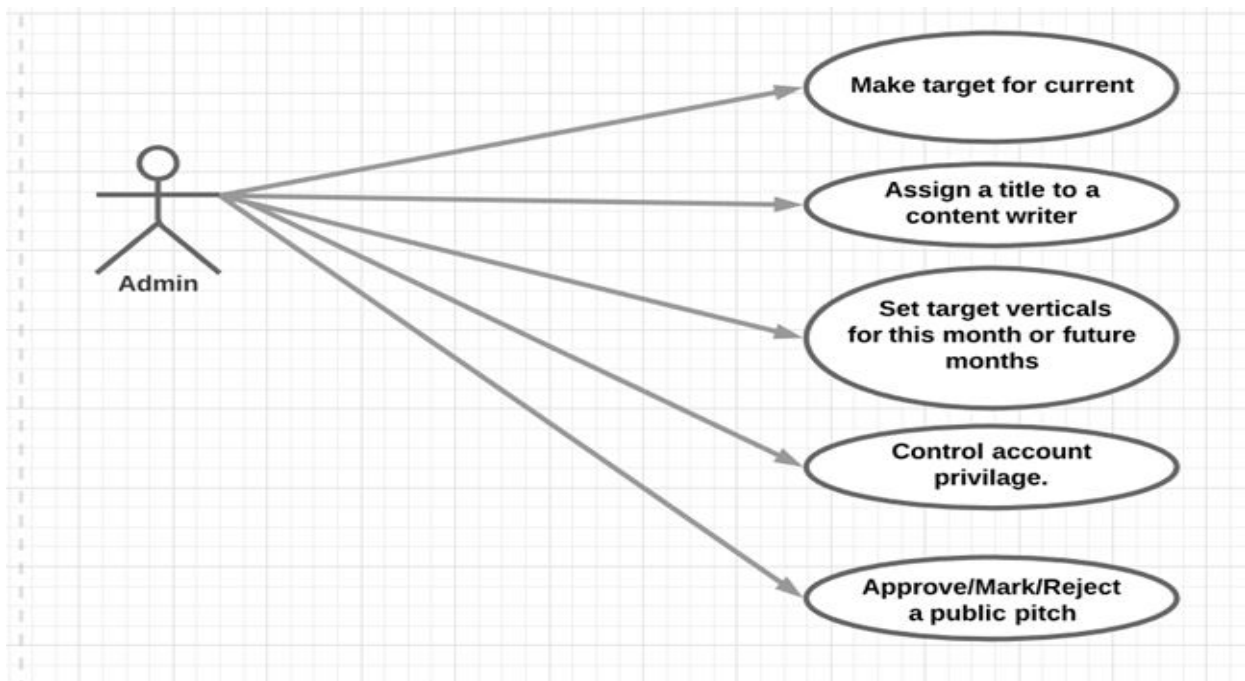| Use Case ID	Use Case Name	Description
Login page		
UC-1	Register for account	User can create a new account profile
UC-2	Login	User logs into the system with a username and password
Content writer home page		
UC-3	View current month target and progress	Content writer can view the total number of titles needed for this month. The desired verticals and number of titles needed by each vertical, titles approved so far. Assignee of each vertical. Vertical assigned to this writer. Titles assigned/worked/approved to this writer.
UC-4	View approved titles	A content writer can view all the title created by him/her that were approved for content production
UC-5	View past month targets	Content writer can view targets made in past months
UC-6	View future month targets	Content writer can view targets set for future months
UC-7	Receive notifications	A content writer can receive notifications as a piece of content moves through the various stages of development (approved, rejected, parked, unassigned, assigned and untitled, titled, approved for publishing, parked for publishing)
UC-8	Send message	A content writer can send a message to a specific user
UC-9	Receive message	A content writer can receive message from other users
UC-10	View content success rates by draft to title conversion ratio	A content writer can track his/her own success rate by the draft to approved title conversion ratio
UC-11	Logout	Content writer logs out of the system and ends their current session
Content writer draft board page		
UC-12	Create a draft	content writer can create a new draft and add details, notes, and tags
UC-13	Edit a draft	content writer can modify a draft
UC-14	Delete a draft	content writer can remove a draft
UC-15	View a draft	content writer can view a draft's details: draft ID, creator, type, vertical, description, time created, last time modified, URL,

		buy-side network, tags
UC-16	Pitch a draft	When a content writer thinks this draft is ready, he/she can click the "pitch it" button to publish this draft to the global pitch list. This draft is then removed from this draft board.
Content writer global pitch board page		
UC-17	View a pitch	Content writer can click on a pitch in the list to view its details: pitch ID, creator, type, vertical, description,time created,last time modified, URL, buy-side network, tags, status(new, approved, rejected, parked), upvote number
UC-18	Upvote a pitch	Content writer can click on the upvote button to upvote a pitch they like
UC-19	Filter pitches by criteria	A content writer can filter pitches by criteria such as status, creator etc
UC-20	Sort pitches by upvote	A content writer can change the view of the board locally by sorting pitches in order of upvotes to identify promising pitches via crowdsourcing
UC-21	Export global pitch board	A content writer can export the master pitch list into a spreadsheet
Content writer local title board page		
UC-22	Edit a title	Content writer can make an eye-catching title for this title instance, the status of the title will change from "assigned and untitled" to "titled"
UC-23	View a title	Content writer can click on a title in the list to view its details: title ID, creator, assignee, type, vertical, description, time created, last time modified, URL, buy-side network, tags, status
UC-24	Filter titles by criteria	A content writer can filter titles by criteria such as status, creator etc
UC-25	Export local title board	A content writer can export the local title board list into a spreadsheet
Admin home page		
UC-26	View current month target and progress	Admin can view the target number of titles needed for this month and progress(number of approved / still needed). The desired verticals, number of titles needed by each vertical, assignee of each vertical, progress of each vertical (titles approved / needed)
UC-27	View past month targets	Admin can view targets made in past months

UC-28	View future month targets	Admin can view targets set for future months
UC-29	Receive notifications	Admin can receive notifications as a piece of content moves through the various stages of development (approved, rejected, parked, unassigned, assigned and untitled, titled, approved for publishing, parked for publishing)
UC-30	Send message	Admin can send a message to a specific user
UC-31	Receive message	Admin writer can receive message from other users
UC-32	Logout	Admin logs out of the system and ends their current session
Admin global pitch board page		
UC-33	View a pitch	Admin can click on a pitch in the list to view its details: pitch ID, creator, type, vertical, description,time created,last time modified, URL, buy-side network, tags, status(new, approved, rejected, parked), upvote number
UC-34	Approve/reject a pitch	Admin can click on a pitch, change its status to approved or rejected. If two admin has different opinions, the status of the pitch is changed to "parked"
UC-35	Filter pitches by criteria	Admin can filter pitches by criteria such as status, creator etc
UC-36	Sort pitches by upvote	Admin can change the view of the board locally by sorting pitches in order of upvotes to identify promising pitches via crowdsourcing
UC-37	Export global pitch board	Admin can export the master pitch list into a spreadsheet
Admin global title board page		
UC-38	View a title	Admin can click on a title in the list to view its details: title ID, creator, assignee, type, vertical, description, time created, last time modified, URL, buy-side network, tags, status
UC-39	Assign a title to content writer	Admin can change the assignee of a title to a specific content writer. By default, the assignee is blank and status of the title is "unassigned and untitled". Once assigned a writer, the status changes to "assigned"
UC-40	Approve a title	One admin needs to approve a title for production. Status changes from "titled" to "approved". If a title is reviewed but not approved, the status changes to "parked"

UC-41	Filter titles by criteria	Admin can filter titles by criteria such as status, creator etc
UC-42	Export global title list	Admin can export the global title board list into a spreadsheet
Admin team board page		
UC-43	View a team member details	Admin can click on a team member and view his/her information: member name, account type(writer, admin), number of draft pitched, number of titles assigned, number of titles approved, assigned vertical, number of title needed by that vertical, success rate, contact info
UC-44	Change a team member's type	Admin can change a team member's type between admin and writer
Admin goals board page		
UC-45	Set target verticals for current month	Admin can set a list of verticals desired for current month
UC-46	Set target verticals for future months	Admin can set a list of verticals desired for future months
UC-47	Set target number of titles needed for each vertical	Admin can set the number of titles needed for each vertical, then the numbers will be summed up to be the total number of titles needed by that month
UC-48	Assign vertical to content writers	Admin can assign a content writer to a vertical

2.1.3.1 Login page

2.1.3.1.1 Register for account

Table 3: Process Description - UC-1

Identifier	UC-1
Purpose	User creates a new account profile
Requirements	Must be able to set up account profile
Development Risks	None
Pre-conditions	None
Post-conditions	None

Table 4: Typical Course of Action - UC-1 success

Seq#	Actor's Action	System's Response
1	Click on "create"	
2		Redirect to sign up page
3	Fill in required fields with unique and correctly formatted information, click "create"	
4		Check for uniqueness, correct format, and completion
5		Update database
6		Display success message

Table 5: Typical Course of Action - UC-1 failure

Seq#	Actor's Action	System's Response
1	Click on "create"	
2		Redirect to sign up page
3	Fill in required fields with incorrect information, click "create"	
4		Check for uniqueness, correct format, and completion
5		Display error message

2.1.3.1.2 Login

Table 6: Process Description - UC-2

Identifier	UC-2
Purpose	Log into the user's session
Requirements	A valid account has been set up
Development Risks	None

Pre-conditions	Account registration
Post-conditions	None

Table 7: Typical Course of Action - UC-2 success

Seq#	Actor's Action	System's Response
1	Fill in username and password, click "login"	
2		Check user credentials
3		Redirect to user home page

Table 8: Typical Course of Action - UC-2 failure

Seq#	Actor's Action	System's Response
1	Fill in incorrect username and password, click "login"	
2		Check user credentials
3		Display error message

2.1.3.2 Content writer home page

2.1.3.2.1 View current month target and progress

Table 9: Process Description - UC-3

Identifier	UC-3
Purpose	Content writer can view total number of titles for this month, desired verticals, number of titles for each verticals, titles approved, assignee of each vertical, vertical assigned to which writer
Requirements	A valid account, user class as "writer".
Development Risks	None
Pre-conditions	Account login
Post-conditions	View titles and verticals details

Table 10: Typical Course of Action - UC-3 success

Seq#	Actor's Action	System's Response
1	Users go to writer home page	
2		Check and show the user home page, containing target or this month
3	Click one vertical	
4		Check and display detail of the vertical
5	Click one title	
		Check and display detail of the title

Table 11: Typical Course of Action - UC-3 failure

Seq#	Actor's Action	System's Response
1	Users go to the pitch board	
2		Check the user home page
3		Display error message

2.1.3.2.2 View approved titles created by writer

Table 12: Process Description - UC-4

Identifier	UC-4
Purpose	View approved titles created by him/her
Requirements	A valid account, user class as "writer".
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	View approved title details

Table 13: Typical Course of Action - UC-4 success

Seq#	Actor's Action	System's Response
1	Users click on "Approved titles" button	
2		Check on all approved titles belonged to this writer
3		Redirect to Approved titles page

Table 14: Typical Course of Action - UC-4 failure

Seq#	Actor's Action	System's Response
1	Users click on "Approved titles" button	
2		Check on all approved titles belonged to this writer
3		Display error message

2.1.3.2.3 Content writers view targets made in past months

Table 15: Process Description - UC-5

Identifier	UC-5
Purpose	Content writer can view targets made in past months
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	View target detail of last month

Table 16: Typical Course of Action - UC-5 success

Seq#	Actor's Action	System's Response
1	Users click on "Select Date" drop down menu and set date	
2	User click on search button	
3		Check on all targets and their titles during that search date
4		Display target and title list

Table 17: Typical Course of Action - UC-5 failure

Seq#	Actor's Action	System's Response
1	Users click on "Select Date" drop down menu and set date	
2	User click on search button	
3		Check on all targets and their titles during that search date
4		Display error message

2.1.3.2.4 Content writers view targets made in future months

Table 18: Process Description - UC-6

Identifier	UC-6
Purpose	Content writer can view targets made in future months
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	View target detail of future month

Table 19: Typical Course of Action - UC-6 success

Seq#	Actor's Action	System's Response
1	Users click on "Select Date" drop down menu and set date	
2	User click on search button	
3		Check on all targets and requirement during that search date
4		Display target requirement list

Table 20: Typical Course of Action - UC-6 failure

Seq#	Actor's Action	System's Response
1	Users click on "Select Date" drop down menu and set date	
2	User click on search button	
3		Check on all targets and requirement during that search date
4		Display error message

2.1.3.2.5 Content writers receive notifications

Table 21: Process Description - UC-7

Identifier	UC-7
Purpose	content writer can receive notifications as a piece of content moves through the various stages of development (approved, rejected, parked, unassigned, assigned, etc.)
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	None

Table 22: Typical Course of Action - UC-7 success

Seq#	Actor's Action	System's Response
1		Notification pops on user's screen as notification displaying the updated information about his/her piece of content
2		New notification updated in user's notification page.

Table 23: Typical Course of Action - UC-7 failure

Seq#	Actor's Action	System's Response
1		No response

2.1.3.2.6 Content writers send a message

Table 24: Process Description - UC-8

Identifier	UC-8
Purpose	A content writer can send a message to a specific user
Requirements	Valid account, user class as "writer"
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	Receive message

Table 25: Typical Course of Action - UC-8 success

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "send message"	
4		Show address field and text field

5	Choose the user who will receive the message	
6	Write message	
7	Click "send"	
8		Try to transfer the message in backend
9		Show "message is sent successfully"

Table 26: Typical Course of Action - UC-8 failure

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "send message"	
4		Show address field and text field
5	Choose the user who will receive the message	
6	Write message	
7	Click "send"	
8		Try to transfer the message in backend
9		Show failed information

2.1.3.2.7 Content writers receive a message

Table 27: Process Description - UC-9

Identifier	UC-9
Purpose	A content writer can receive message from other users
Requirements	Valid account, user class as "writer"
Development Risks	None

Pre-conditions	Account login, user in writer home page
Post-conditions	None

Table 28: Typical Course of Action - UC-9 success

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "message box"	
4		Show the list of message received
5	Click on one message to read	
6		Show the message

Table 29: Typical Course of Action - UC-9 failure

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "message box"	
4		Show error info that why message box is unavailable

2.1.3.2.8 Content writers track performance

Table 30: Process Description - UC-10

Identifier	UC-10
Purpose	A content writer can track his/her own success rate by the draft to approved title conversion ratio
Requirements	Valid account, user class as "writer"
Development Risks	None

Pre-conditions	Account login, user in writer home page
Post-conditions	None

Table 31: Typical Course of Action - UC-10 success

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "check success rate"	
4		Show the data of successful conversion ratio

Table 32: Typical Course of Action - UC-10 failure

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "check success rate"	
4		Show error info that why conversion ratio is unavailable

2.1.3.2.9 Content writers log out

Table 33: Process Description - UC-11

Identifier	UC-11
Purpose	Content writer logs out of the system and ends their current session
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 34: Typical Course of Action - UC-11 success

Seq#	Actor's Action	System's Response
1	User click on setting menu and then click on log out button	
2		Log out of the system
3		Redirect to login page

Table 35: Typical Course of Action - UC-11 failure

Seq#	Actor's Action	System's Response
1	User click on setting menu and then click on log out button	
2		Log out of the system
		Display error message

2.1.3.3 Content writer draft board

2.1.3.3.1 Content writers create draft

Table 36: Process Description - UC-12

Identifier	UC-12
Purpose	Content writer can create a new draft and add details, notes, and tags
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 37: Typical Course of Action - UC-12 success

Seq#	Actor's Action	System's Response
1	User click on create a draft button	
2		Show the draft information page
3	User add details, notes, and tags	
4		Show the success of creating a draft

Table 38: Typical Course of Action - UC-12 failure

Seq#	Actor's Action	System's Response
1	User click on create a draft button	
2		Show the draft information page
3	User add details, notes, and tags	
4		Show the failure of creating a draft

2.1.3.3.2 Content writers modify a draft

Table 39: Process Description - UC-13

Identifier	UC-13
Purpose	Content writer can modify a draft
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 40: Typical Course of Action - UC-13 success

Seq#	Actor's Action	System's Response
1	User click on edit a draft button	
2		Show the draft information page
3	User edit details, notes, and tags	
4		Show the success of creating a draft

Table 41: Typical Course of Action - UC-13 failure

Seq#	Actor's Action	System's Response
1	User click on edit a draft button	
2		Show the draft information page
3	User edit details, notes, and tags	
4		Show the failure of creating a draft

2.1.3.3.3 Content writers remove a draft

Table 42: Process Description - UC-14

Identifier	UC-14
Purpose	Content writer can remove a draft
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 43: Typical Course of Action - UC-14 success

Seq#	Actor's Action	System's Response
1	User click on delete a draft button	
2		Show the deleted draft information page
3	User confirm the delete button	
4		Show the success of delete a draft

Table 44: Typical Course of Action - UC-14 failure

Seq#	Actor's Action	System's Response
1	User click on delete a draft button	
2		Show the deleted draft information page
3	User confirm the delete button	
4		Show the failure of delete a draft

2.1.3.3.4 Content writers view draft details

Table 45: Process Description - UC-15

Identifier	UC-15
Purpose	Content writer can view a draft's details: draft ID, creator, type, vertical, description, time created, last time modified, URL, buy-side network, tags
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 46: Typical Course of Action - UC-15 success

Seq#	Actor's Action	System's Response
1	User click on view a draft button	
2		Show the success draft information page

Table 47: Typical Course of Action - UC-15 failure

Seq#	Actor's Action	System's Response
1	User click on view a draft button	
2		Show the failure draft information page

2.1.3.4 Content writer global pitch board

Table 48: Process Description - UC-16

Identifier	UC-16
Purpose	When a content writer thinks this draft is ready, he/she can click the "pitch it" button to publish this draft to the global pitch list. This draft is then removed from this draft board
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 49: Typical Course of Action - UC-16 success

Seq#	Actor's Action	System's Response
1	User click on pitch a draft button	
2		Show the draft information page
3	User confirm the pitch button	

Seq#	Actor's Action	System's Response
4		Show the success of pitch a draft

Table 50: Typical Course of Action - UC-16 failure

Seq#	Actor's Action	System's Response
1	User click on pitch a draft button	
2		Show the draft information page
3	User confirm the pitch button	
4		Show the failure of pitch a draft

Table 51: Process Description - UC-17

Identifier	UC-17
Purpose	Content writer can click on a pitch in the list to view its details
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 52: Typical Course of Action - UC-17 success

Seq#	Actor's Action	System's Response
1	User click on view a pitch button	
2		Show the success pitch information page

Table 53: Typical Course of Action - UC-17 failure

Seq#	Actor's Action	System's Response
1	User click on view a pitch button	

2		Show the failure pitch information page

Table 54: Process Description - UC-18

Identifier	UC-18
Purpose	Content writer can click on the upvote button to upvote a pitch they like
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 55: Typical Course of Action - UC-18 success

Seq#	Actor's Action	System's Response
1	User click on upvote a pitch button	
2		Show the pitch information page
3	User confirm the upvote button	
4		Show the success of upvoting pitch

Table 56: Typical Course of Action - UC-19 failure

Seq#	Actor's Action	System's Response
1	User click on upvote a pitch button	
2		Show the pitch information page
3	User confirm the upvote button	
4		Show the failure of upvoting pitch

Table 57: Process Description - UC-19

Identifier	UC-19
Purpose	Content writer can filter pitches by criteria such as status, creator etc
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 58: Typical Course of Action - UC-19 success

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the success of filter pitches

Table 59: Typical Course of Action - UC-19 failure

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the failure of filter pitches

Table 60: Process Description - UC-20

Identifier	UC-20
Purpose	A content writer can change the view of the board locally by sorting pitches in order of upvotes to identify promising pitches via crowdsourcing
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 61: Typical Course of Action - UC-20 success

Seq#	Actor's Action	System's Response
1	User select sort button	
2		Show success of the sorted pictures

Table 62: Typical Course of Action - UC-20 failure

Seq#	Actor's Action	System's Response
1	User select sort button	
2		Show failure of the sorted pictures

Table 63: Process Description - UC-21

Identifier	UC-21
Purpose	A content writer can export the master pitch list into a spreadsheet
Requirements	Valid account
Development Risks	None

Pre-conditions	Account login
Post-conditions	None

Table 64: Typical Course of Action - UC-21 success

Seq#	Actor's Action	System's Response
1	User click on the export global pitch board	
2		Show the pitch information page
3	User confirm the export button	
4		Show the success of export pitch

Table 65: Typical Course of Action - UC-21 failure

Seq#	Actor's Action	System's Response
1	User click on the export global pitch board	
2		Show the pitch information page
3	User confirm the export button	
4		Show the failure of export pitch

2.1.3.5 Content writer local title board

Table 66: Process Description - UC-22

Identifier	UC-22
Purpose	Content writer can make an eye-catching title for this title instance, the status of the title will change from "assigned and untitled" to "titled"
Requirements	Valid account

Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 67: Typical Course of Action - UC-22 success

Seq#	Actor's Action	System's Response
1	User click on editing a title	
2		Show the title information page
3	User click the status of the title from "assigned and untitled" to "titled" button	
4		Show the success of editing a title

Table 68: Typical Course of Action - UC-22 failure

Seq#	Actor's Action	System's Response
1	User click on editing a title	
2		Show the title information page
3	User click the status of the title from "assigned and untitled" to "titled" button	
4		Show the failure of editing a title

Table 69: Process Description - UC-23

Identifier	UC-23
Purpose	Content writer can click on a title in the list to view its details: title ID, creator, assignee, type, vertical, description, time created, last time modified, URL, buy-side network, tags, status

Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 70: Typical Course of Action - UC-23 success

Seq#	Actor's Action	System's Response
1	User click on view a title	
2		Show success of the title information page

Table 71: Typical Course of Action - UC-23 failure

Seq#	Actor's Action	System's Response
1	User click on view a title	
2		Show failure of the title information page

Table 72: Process Description - UC-24

Identifier	UC-24
Purpose	A content writer can filter titles by criteria such as status, creator etc
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 73: Typical Course of Action - UC-24 success

Seq#	Actor's Action	System's Response

1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the success of filter titles

Table 74: Typical Course of Action - UC-24 failure

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the failure of filter titles

Table 75: Process Description - UC-25

Identifier	UC-25
Purpose	Content writer can export the local title board list into a spreadsheet
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 76: Typical Course of Action - UC-25 success

Seq#	Actor's Action	System's Response
1	User click on the export local pitch board	

2		Show the title information page
3	User confirm the export button	
4		Show the success of export title

Table 77: Typical Course of Action - UC-25 failure

Seq#	Actor's Action	System's Response
1	User click on the export local pitch board	
2		Show the title information page
3	User confirm the export button	
4		Show the failure of export title

2.1.3.6 Admin home board

Table 78: Process Description - UC-26

Identifier	UC-26
Purpose	Admin can view the target number of titles needed for this month and progress(number of approved / still needed). The desired verticals, number of titles needed by each vertical, assignee of each vertical, progress of each vertical (titles approved / needed)
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 79: Typical Course of Action - UC-26 success

Seq#	Actor's Action	System's Response

1	User click on the view current month target and progress	
2		Show the success of the current month target and progress information page

Table 80: Typical Course of Action - UC-26 failure

Seq#	Actor's Action	System's Response
1	User click on the view current month target and progress	
2		Show the failure of the current month target and progress information page

Table 81: Process Description - UC-27

Identifier	UC-27
Purpose	Admin can view targets made in past months
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 82: Typical Course of Action - UC-27 success

Seq#	Actor's Action	System's Response
1	User click on the view past month target and progress	
2		Show the success of the past month target and progress information page

Table 83: Typical Course of Action - UC-27 failure

Seq#	Actor's Action	System's Response
1	User click on the view past month target and progress	
2		Show the failure of the past month target and progress information page

Table 84: Process Description - UC-28

Identifier	UC-28
Purpose	Admin can view targets set for future months
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 85: Typical Course of Action - UC-27 success

Seq#	Actor's Action	System's Response
1	User click on the view future months target and progress	
2		Show the success of the future months target and progress information page

Table 86: Typical Course of Action - UC-27 failure

Seq#	Actor's Action	System's Response
1	User click on the view future months target and progress	
2		Show the failure of future months target and progress information page

Table 87: Process Description - UC-29

Identifier	UC-29
Purpose	Admin can receive notifications as a piece of content moves through the various stages of development
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 88: Typical Course of Action - UC-29 success

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "message box"	
4		Show the list of message received
5	Click on one message to read	
6		Show the message

Table 89: Typical Course of Action - UC-29 failure

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "message box"	
4		Show error info that why message box is unavailable

Table 90: Process Description - UC-30

Identifier	UC-30
Purpose	Admin can send a message to a specific user
Requirements	Valid account, user class as "writer"
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	Receive message

Table 91: Typical Course of Action - UC-30 success

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "send message"	
4		Show address field and text field
5	Choose the user who will receive the message	
6	Write message	
7	Click "send"	
8		Try to transfer the message in backend
9		Show "message is sent successfully"

Table 92: Typical Course of Action - UC-30 failure

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "send message"	

4		Show address field and text field
5	Choose the user who will receive the message	
6	Write message	
7	Click "send"	
8		Try to transfer the message in backend
9		Show failed information

Table 93: Process Description - UC-31

Identifier	UC-31
Purpose	Admin can send a message to a specific user
Requirements	Valid account, user class as "writer"
Development Risks	None
Pre-conditions	Account login, user in writer home page
Post-conditions	Receive message

Table 94: Typical Course of Action - UC-31 success

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "send message"	
4		Show address field and text field
5	Choose the user who will receive the message	
6	Write message	
7	Click "send"	

8		Try to transfer the message in backend
9		Show "message is sent successfully"

Table 95: Typical Course of Action - UC-31 failure

Seq#	Actor's Action	System's Response
1	Users move to writer home page	
2		Show the writer home page
3	Click on "send message"	
4		Show address field and text field
5	Choose the user who will receive the message	
6	Write message	
7	Click "send"	
8		Try to transfer the message in backend
9		Show failed information

Table 96: Process Description - UC-32

Identifier	UC-32
Purpose	Admin logs out of the system and ends their current session
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 97: Typical Course of Action - UC-32 success

Seq#	Actor's Action	System's Response
1	User click on setting menu and then click on log out button	
2		Log out of the system
3		Redirect to login page

Table 98: Typical Course of Action - UC-32 failure

Seq#	Actor's Action	System's Response
1	User click on setting menu and then click on log out button	
2		Log out of the system
		Display error message

2.1.3.7 Admin global pitch board

Table 99: Process Description - UC-33

Identifier	UC-33
Purpose	Admin can click on a pitch in the list to view its details: pitch ID, creator, type, vertical, description,time created,last time modified, URL, buy-side network, tags, status(new, approved, rejected, parked), upvote number
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 100: Typical Course of Action - UC-33 success

Seq#	Actor's Action	System's Response
1	User click on view a pitch button	
2		Show the success pitch information page

Table 101: Typical Course of Action - UC-33 failure

Seq#	Actor's Action	System's Response
1	User click on view a pitch button	
2		Show the failure pitch information page

Table 102: Process Description - UC-34

Identifier	UC-34
Purpose	Admin can click on a pitch in the list to view its details: pitch ID, creator, type, vertical, description,time created,last time modified, URL, buy-side network, tags, status(new, approved, rejected, parked), upvote number
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 103: Typical Course of Action - UC-34 success

Seq#	Actor's Action	System's Response
1	User click on Approve/reject a pitch button	
2		Show the success pitch information page

Table 104: Typical Course of Action - UC-34 failure

Seq#	Actor's Action	System's Response
1	User click on Approve/reject a pitch button	
2		Show the failure pitch information page

Table 105: Process Description - UC-35

Identifier	UC-35
Purpose	Admin can filter pitches by criteria such as status, creator etc
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 106: Typical Course of Action - UC-35 success

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the success of filter titles

Table 107: Typical Course of Action - UC-35 failure

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	

2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the failure of filter titles

Table 108: Process Description - UC-36

Identifier	UC-36
Purpose	Admin can change the view of the board locally by sorting pitches in order of upvotes to identify promising pitches via crowdsourcing
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 109: Typical Course of Action - UC-36 success

Seq#	Actor's Action	System's Response
1	User select sort button	
2		Show success of the sorted pictures

Table 110: Typical Course of Action - UC-36 failure

Seq#	Actor's Action	System's Response
1	User select sort button	
2		Show failure of the sorted pictures

Table 111: Process Description - UC-37

Identifier	UC-37
Purpose	A admin can export the master pitch list into a spreadsheet
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 112: Typical Course of Action - UC-37 success

Seq#	Actor's Action	System's Response
1	User click on the export global pitch board	
2		Show the pitch information page
3	User confirm the export button	
4		Show the success of export pitch

Table 113: Typical Course of Action - UC-37 failure

Seq#	Actor's Action	System's Response
1	User click on the export global pitch board	
2		Show the pitch information page
3	User confirm the export button	
4		Show the failure of export pitch

2.1.3.8 Admin global title board

Table 114: Process Description - UC-38

Identifier	UC-38
Purpose	admin can click on a title in the list to view its details: title ID, creator, assignee, type, vertical, description, time created, last time modified, URL, buy-side network, tags, status
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 115: Typical Course of Action - UC-38 success

Seq#	Actor's Action	System's Response
1	User click on view a title	
2		Show success of the title information page

Table 116: Typical Course of Action - UC-38 failure

Seq#	Actor's Action	System's Response
1	User click on view a title	
2		Show failure of the title information page

Table 117: Process Description - UC-39

Identifier	UC-39
Purpose	Admin can change the assignee of a title to a specific content writer. By default, the assignee is blank and status of the title is "unassigned and untitled". Once assigned a writer, the status changes to "assigned"

Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 118: Typical Course of Action - UC-39 success

Seq#	Actor's Action	System's Response
1	User click on assign a title to content write button	
2		Show the content writer list page
3	User select content writer	
4		Show the success of assigning a title to content write button

Table 119: Typical Course of Action - UC-39 failure

Seq#	Actor's Action	System's Response
1	User click on assign a title to content write button	
2		Show the content writer list page
3	User select content writer	
4		Show the failure of assigning a title to content write button

Table 120: Process Description - UC-40

Identifier	UC-40
Purpose	One admin needs to approve a title for production. Status changes from "titled" to "approved". If a title is reviewed but not approved, the status changes to "parked"
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 121: Typical Course of Action - UC-40 success

Seq#	Actor's Action	System's Response
1	User click on showing title list button	
2		Show the title list page
3	User select approve a title button	
4		Show the success of approving a title

Table 122: Typical Course of Action - UC40 failure

Seq#	Actor's Action	System's Response
1	User click on showing title list button	
2		Show the title list page
3	User select approve a title button	
4		Show the failure of approving a title

Table 123: Process Description - UC-41

Identifier	UC-41
Purpose	Admin can filter titles by criteria such as status, creator etc
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 124: Typical Course of Action - UC-41 success

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the success of filter titles

Table 125: Typical Course of Action - UC-41 failure

Seq#	Actor's Action	System's Response
1	User select criteria such as status, creator etc	
2		Show the selected criteria information page
3	User confirm the filter button	
4		Show the failure of filter titles

Table 126: Process Description - UC-42

Identifier	UC-42
Purpose	Admin can export the local title board list into a spreadsheet
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 127: Typical Course of Action - UC-42 success

Seq#	Actor's Action	System's Response
1	User click on the export local pitch board	
2		Show the title information page
3	User confirm the export button	
4		Show the success of export title

Table 128: Typical Course of Action - UC-42 failure

Seq#	Actor's Action	System's Response
1	User click on the export local pitch board	
2		Show the title information page
3	User confirm the export button	
4		Show the failure of export title

2.1.3.9 Admin team board

Table 129: Process Description - UC-43

Identifier	UC-43
Purpose	Admin can click on a team member and view his/her information: member name, account type(writer, admin), number of draft pitched, number of titles assigned, number of titles approved, assigned vertical, number of title needed by that vertical, success rate, contact info
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 130: Typical Course of Action - UC-43 success

Seq#	Actor's Action	System's Response
1	User click on the View a team member details button	
2		Show success of the team member details information page

Table 131: Typical Course of Action - UC-43 failure

Seq#	Actor's Action	System's Response
1	User click on the View a team member details button	
2		Show failure of the team member details information page

Table 132: Process Description - UC-44

Identifier	UC-44
Purpose	Admin can change a team member's type between admin and writer

Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 133: Typical Course of Action - UC-44 success

Seq#	Actor's Action	System's Response
1	User click on Change a team member's types button	
2		Show success of the team member details changed information page

Table 134: Typical Course of Action - UC-44 failure

Seq#	Actor's Action	System's Response
1	User click on the Change a team member's type button	
2		Show failure of the team member details changed information page

2.1.3.10 Admin goal board

Table 135: Process Description - UC-45

Identifier	UC-45
Purpose	Admin can set a list of verticals desired for current month
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 136: Typical Course of Action - UC-45 success

Seq#	Actor's Action	System's Response
1	User click on set target verticals for current month button	
2		Show success of target verticals for current month information page

Table 137: Typical Course of Action - UC-45 failure

Seq#	Actor's Action	System's Response
1	User click on set target verticals for current month button	
2		Show failure of target verticals for current month information page

Table 138: Process Description - UC-46

Identifier	UC-46
Purpose	Admin can set a list of verticals desired for future months
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 139: Typical Course of Action - UC-46 success

Seq#	Actor's Action	System's Response

1	User click on set target verticals for future months button	
2		Show success of target verticals for future months information page

Table 140: Typical Course of Action - UC-46 failure

Seq#	Actor's Action	System's Response
1	User click on set target verticals for future months button	
2		Show failure of target verticals for future months information page

Table 141: Process Description - UC-47

Identifier	UC-47
Purpose	Admin can set the number of titles needed for each vertical, then the numbers will be summed up to be the total number of titles needed by that month
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 142: Typical Course of Action - UC-47 success

Seq#	Actor's Action	System's Response
1	User click on Set target number of titles button	
2		Show success of target number of titles information page

Table 143: Typical Course of Action - UC-47 failure

Seq#	Actor's Action	System's Response
1	User click on Set target number of titles button	
2		Show failure of target number of titles information page

Table 144: Process Description - UC-48

Identifier	UC-48
Purpose	Admin can assign a content writer to a vertical
Requirements	Valid account
Development Risks	None
Pre-conditions	Account login
Post-conditions	None

Table 145: Typical Course of Action - UC-48 success

Seq#	Actor's Action	System's Response
1	User click on Assign vertical to content writers button	
2		Show success of vertical information page

Table 141: Typical Course of Action - UC-48 failure

Seq#	Actor's Action	System's Response
1	User click on Assign vertical to content writers button	
2		Show failure of vertical information page

2.1.4   Modes of Operation

- Content Writer mode: log in, log out, draft idea, pitch draft, upvote pitch, write title, make comment
- Content Admin mode: Approve pitch, control writer privilege, set targets, assign vertical to writers, assign title to writers, review and approve pitched idea or titles

2.2 System Analysis Rationale

Content admin registration is not included explicitly as it would be created manually for each admin by the dev team or maintainer. Number of admins should be limited and should not be shown in the UI. Only existing admins should be able to add new admins. The scope does not include optimization for mobile platform, thus the web app is preferred to be used in a laptop/desktop browser environment.

3. Technology-Independent Model

Note: This section is exactly the same as section 4. Due to time constraints that team 3 has and the fact that we already know what technology we'll use, we used the content of section 4 for section 3.

3.1. Design Overview

3.1.1. System Structure

Figure 5: Conceptual Domain Model
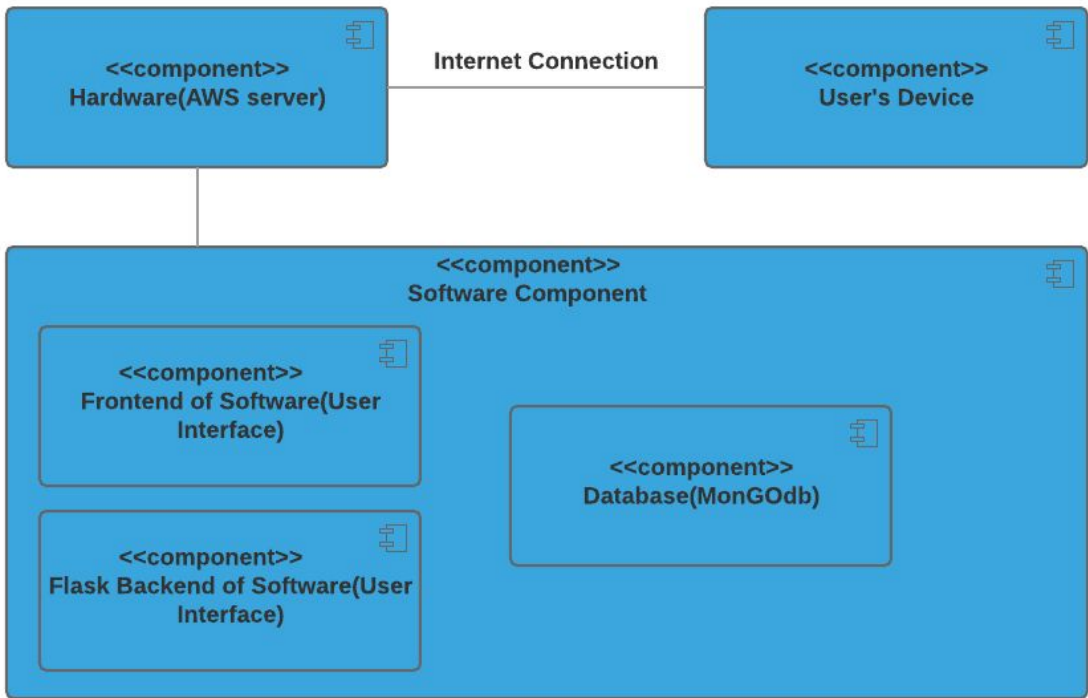
Figure 6: Hardware Component Class Diagram

Table 142 a: Hardware Component Description

Hardware Component	Description
AWS	For system hosting in production.
User's device	Work computers, for browser access

Figure 7: Software Component Class Diagram
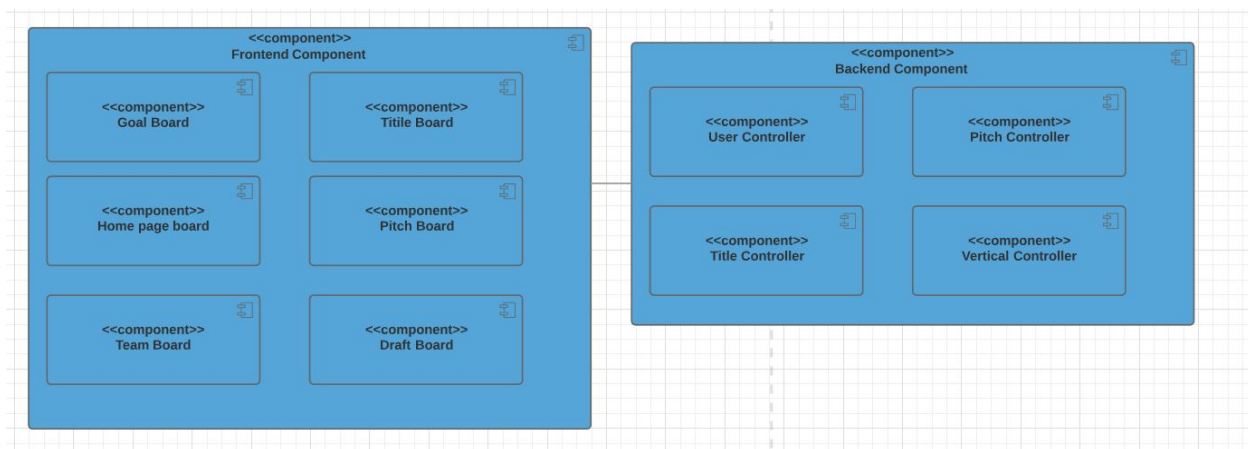
Table 142 b: Software Component Description

Software Component	Description
Goal Board	admin can set target vertical and amount of titles desired for current or future months, and also assign content writers to verticals
Home Page	admin and writer can view overall project progress, individual vertical progress, and targets of the past, current, or future months
Team Board	admin can view team member's performance and progress and change member's account type
Draft Board	writer can draft an idea then pitch it for approval
Pitch Board	admin and writer can view pitch details, and then admin can approve pitch to move into the next stage of content creation
Title Board	admin can view title details, and approve titles to move into the next stage of content creation. Writer can create title for a content piece
User Controller	Implement the logic for user behaviors and store the user data model.

Pitch Controller	Implement the logic for pitch behaviors and store the user data model.
Title Controller	Implement the logic for title behaviors and store the user data model.
Vertical Controller	Implement the logic for vertical behaviors and store the user data model.

Figure 8: Deployment Diagram
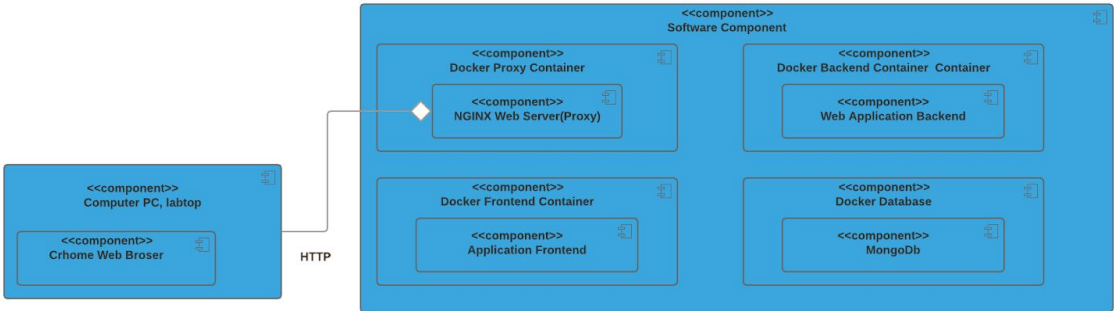
3.1.2. Design Classes

Figure 9: Design Class Diagram
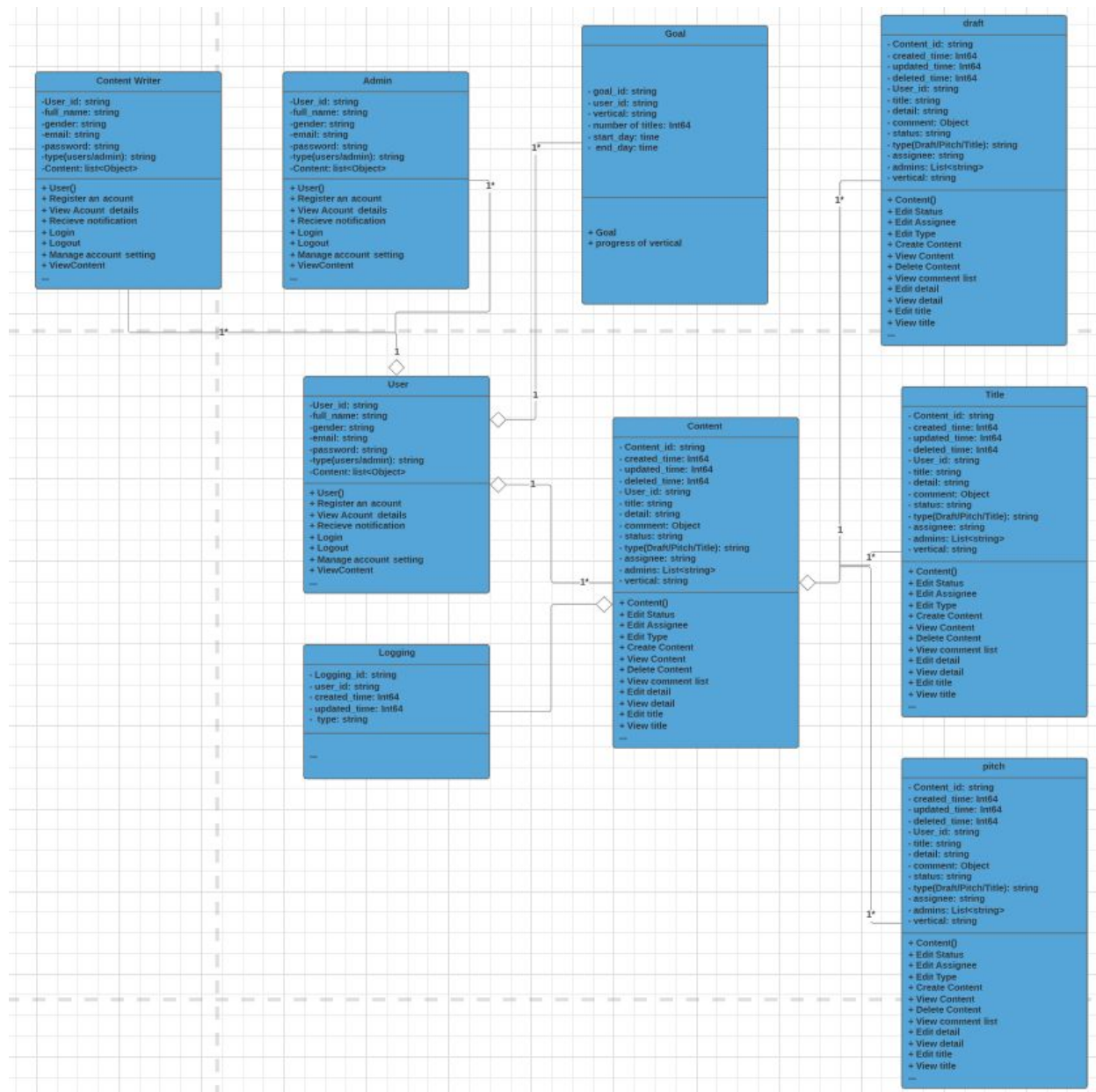
Table 144: Design Class Description

Class	Type	Description
User	Entity	Describe user information and model, include

		user attributes and methods
Content	Entity	Describe a draft, pitch, and title data models, include content attributes and methods
Goal	Entity	Describe monthly goal of the team, include goal attributes and methods
Logging	Entity	Describe logging of the users' operations and system status, include logging attributes and methods
Pitch	Entity	This class extends content class.
draft	Entity	This class extends content class.
title	Entity	This class extends content class.
Admin	Entity	This class extends user class
Content writer	Entity	This class extends user class

3.1.3. Process Realization

Figure 10: Robustness Diagram - draft a new pitch
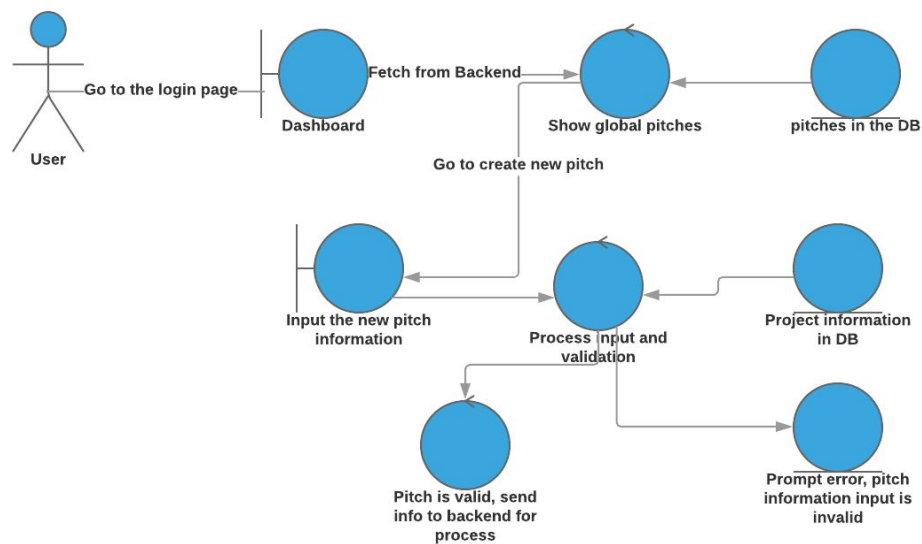
Figure 11: Process Realization Diagram - draft a new pitch
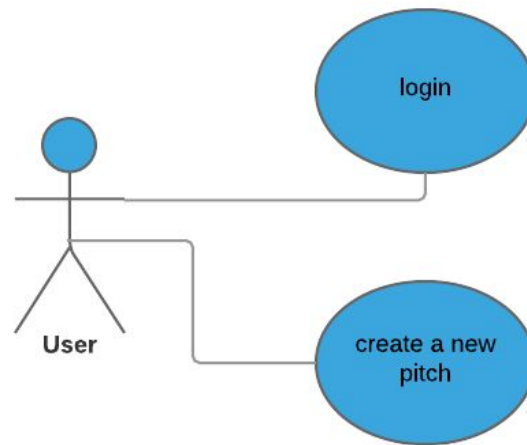
Figure 12: Sequence Diagram - draft a new pitch
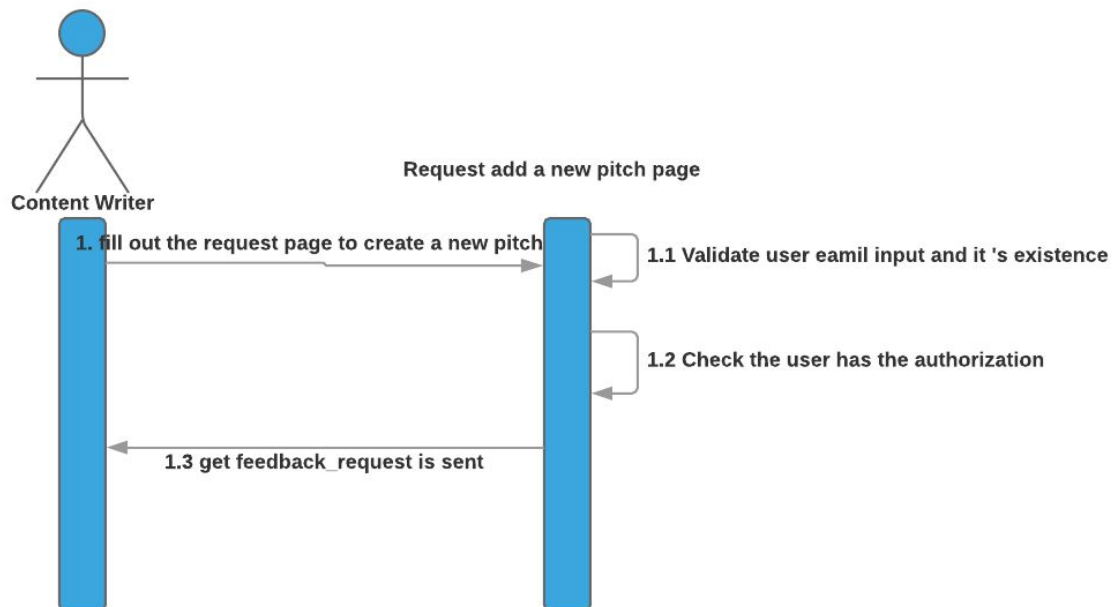
Figure 13: Robustness Diagram - change the status of the a new pitch
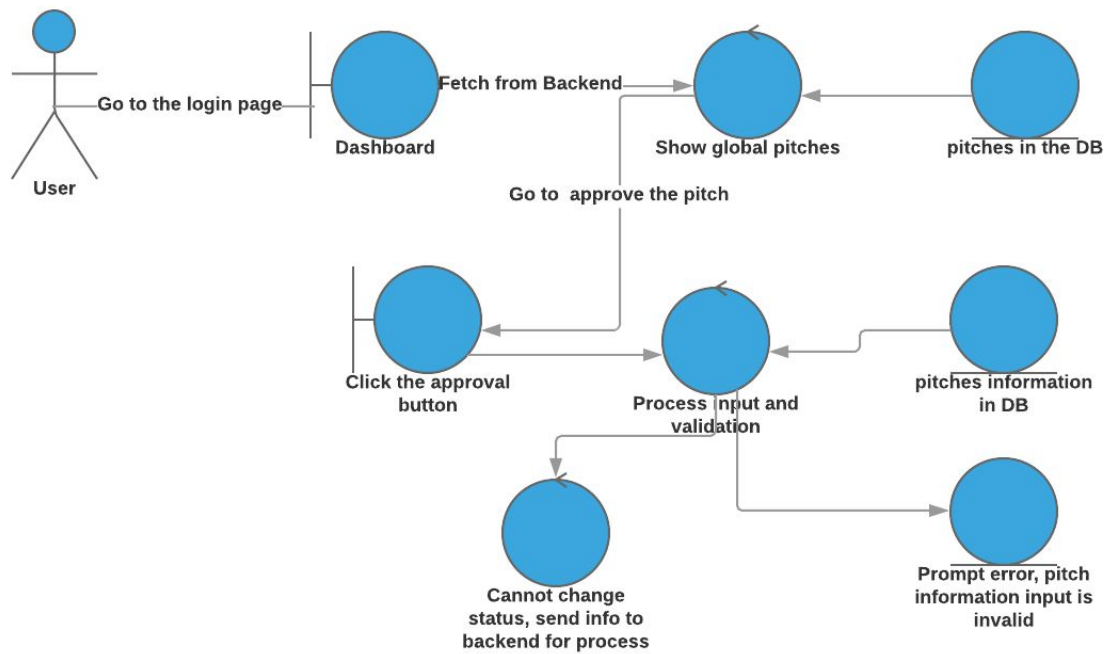
Figure 14: Process Realization Diagram - change the status of the a new pitch
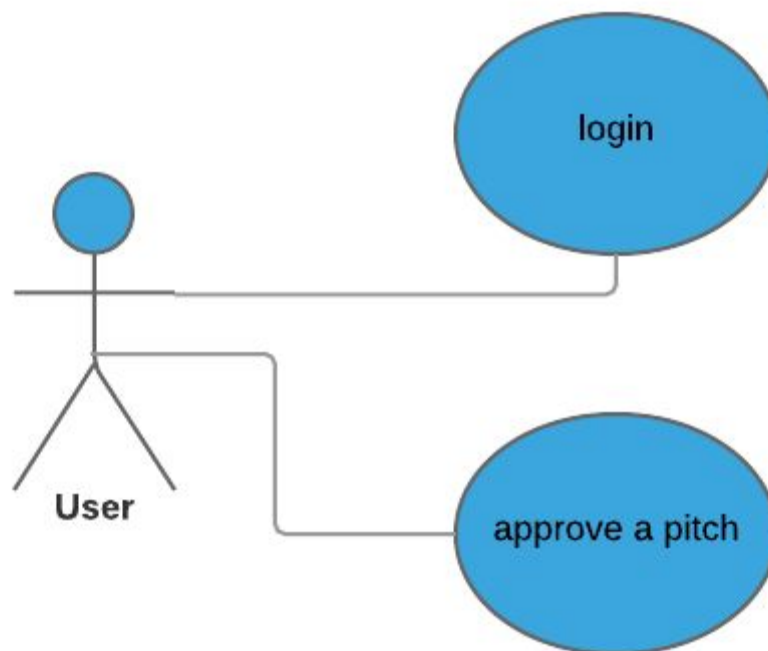
Figure 15: Process Realization Diagram - change the status of the a new pitch
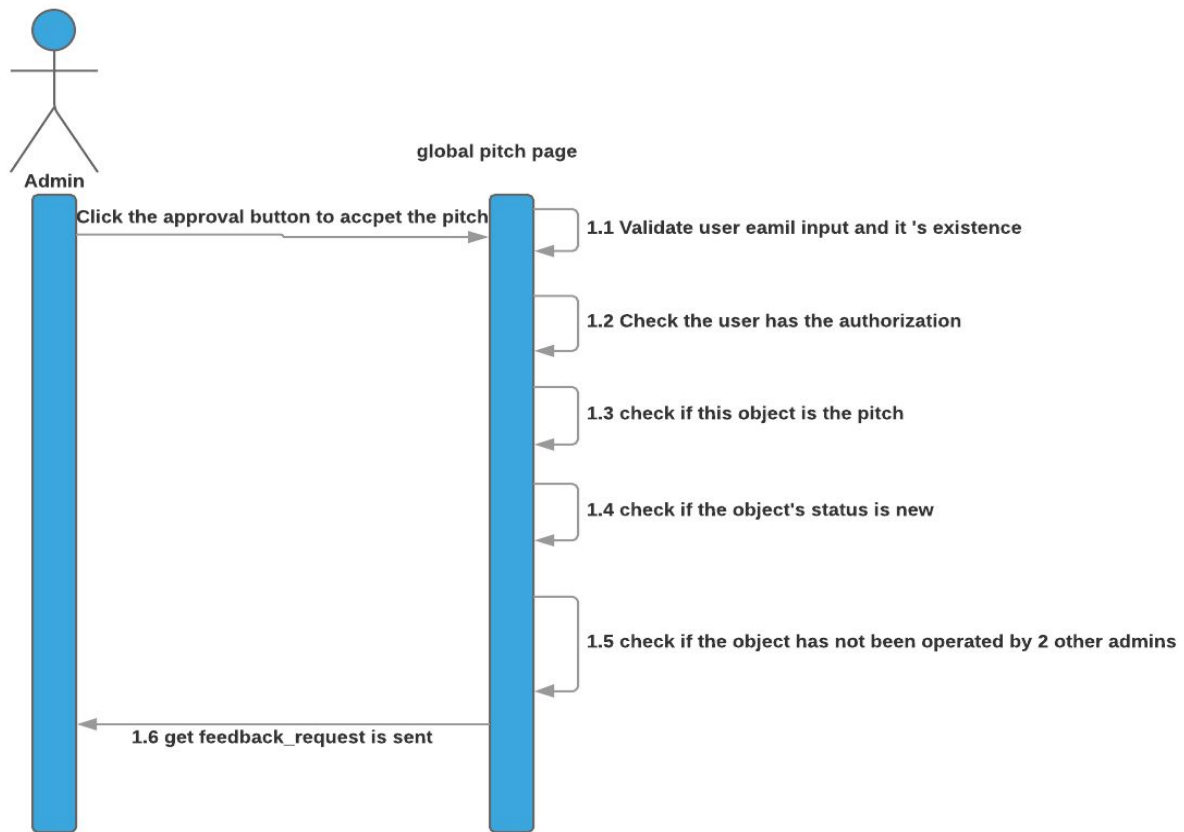
3.2 Design Rationale

The design is solely following the principle to mimic and streamline System1's current workflow on idea formulation using most recent and mainstream technologies, including the utilization of modern database hosting, cloud service, web app hosting, mainstream frameworks etc. Meanwhile, the design aims to be maintainer friendly, meaning that it's modular and has clear boundary between subparts.

4. Technology-Specific System Design

4.1 Design Overview

4.1.1   System Structure

Figure 16: Conceptual Domain Model
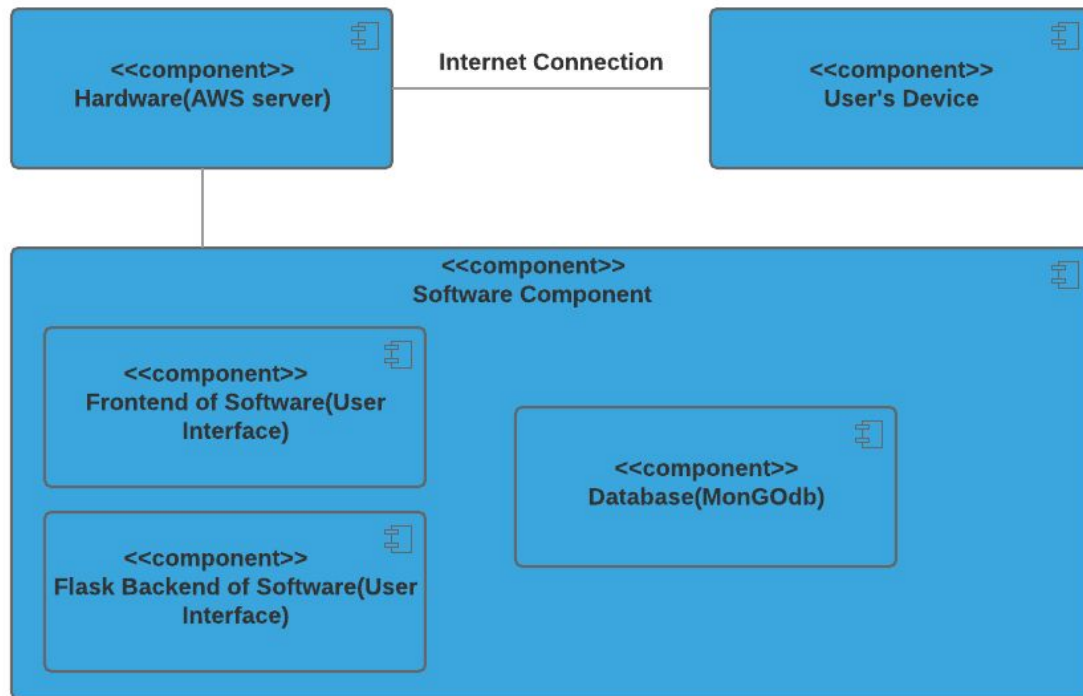
Figure 17: Hardware Component Class Diagram

Table 145: Hardware Component Description

Hardware Component	Description
AWS	For system hosting in production.
User's device	Work computers, for browser access

Figure 18: Software Component Class Diagram
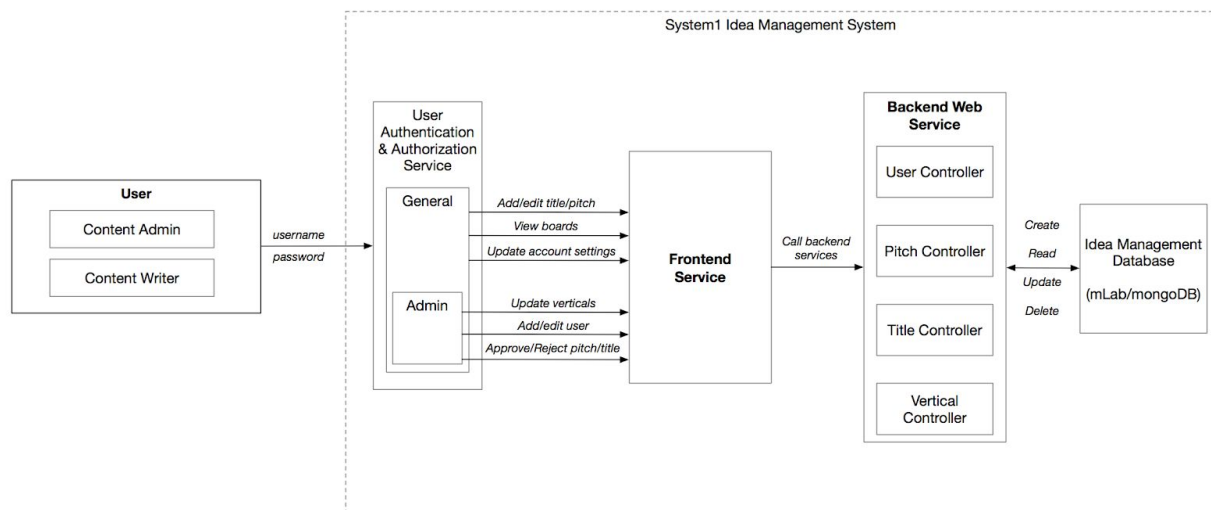
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Home Page	admin and writer can view overall project progress, individual vertical progress, and targets of the past, current, or future months
Team Board	admin can view team member's performance and progress and change member's account type
Draft Board	writer can draft an idea then pitch it for approval
Pitch Board	admin and writer can view pitch details, and then admin can

	approve pitch to move into the next stage of content creation
Title Board	admin can view title details, and approve titles to move into the next stage of content creation. Writer can create title for a content piece
User Controller	Implement the logic for user behaviors and store the user data model.
Pitch Controller	Implement the logic for pitch behaviors and store the user data model.
Title Controller	Implement the logic for title behaviors and store the user data model.
Vertical Controller	Implement the logic for vertical behaviors and store the user data model.

Figure 19: Deployment Diagram
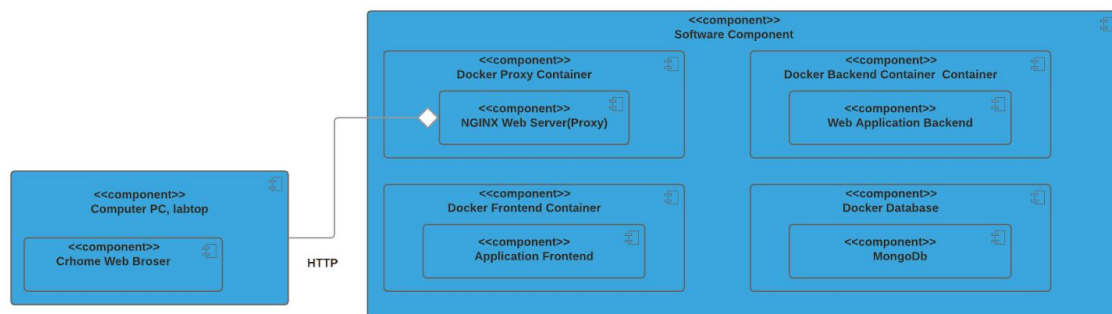
4.1.2   Design Classes

Figure 20: Design Class Diagram
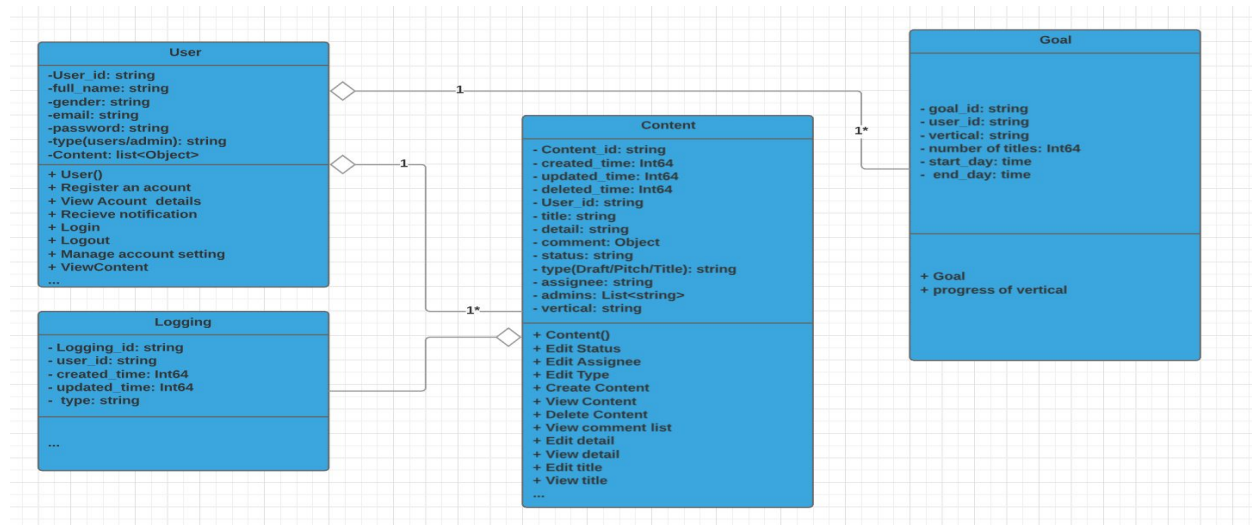
Table 147: Design Class Description

Class	Type	Description
User	Entity	Describe user information and model, include user attributes and methods
Content	Entity	Describe a draft, pitch, and title data models, include content attributes and methods
Goal	Entity	Describe monthly goal of the team, include goal attributes and methods
Logging	Entity	Describe logging of the users' operations and system status, include logging attributes and methods

4.1.3   Process Realization

Figure 21: Robustness Diagram - draft a new pitch
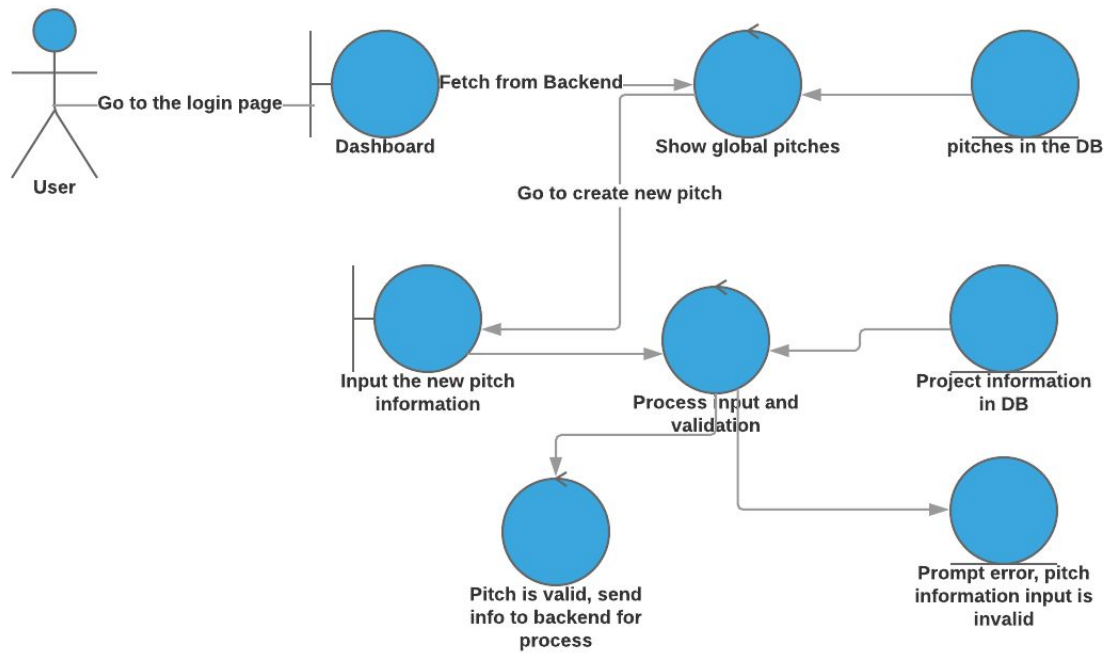
Figure 22: Process Realization Diagram - draft a new pitch
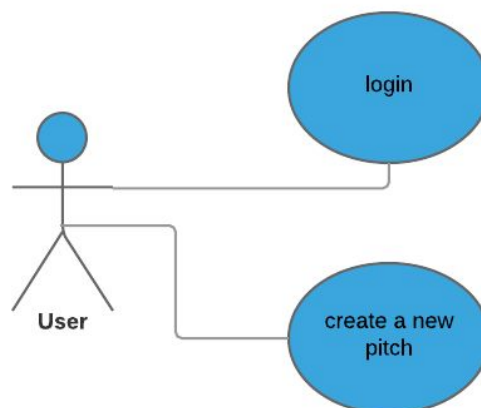
Figure 23: Sequence Diagram - draft a new pitch
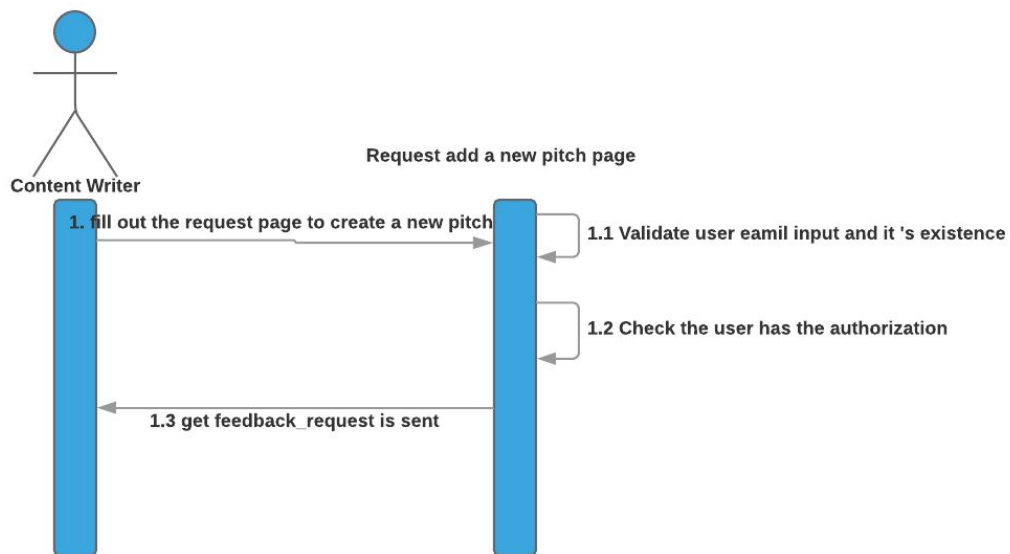
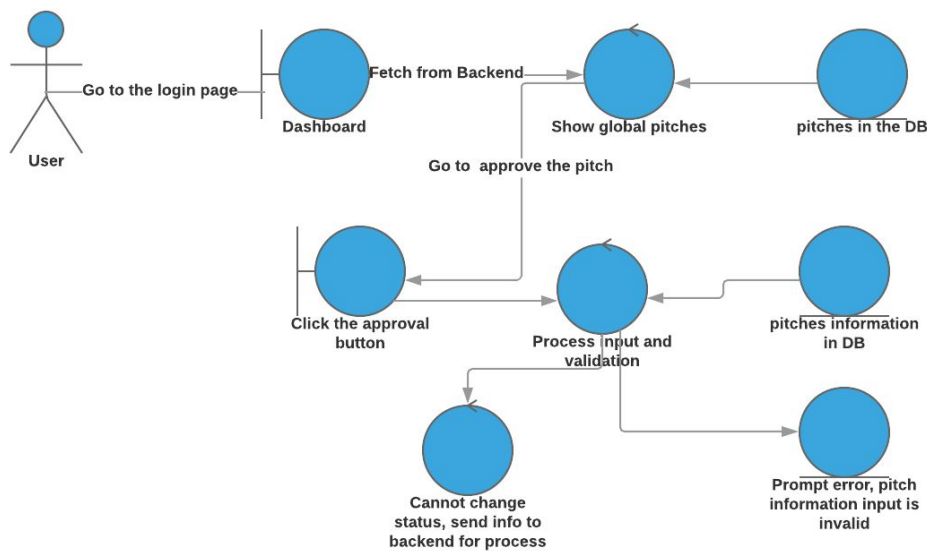Figure 24: Robustness Diagram - change the status of the a new pitch

Figure 25: Process Realization Diagram - change the status of the a new pitch
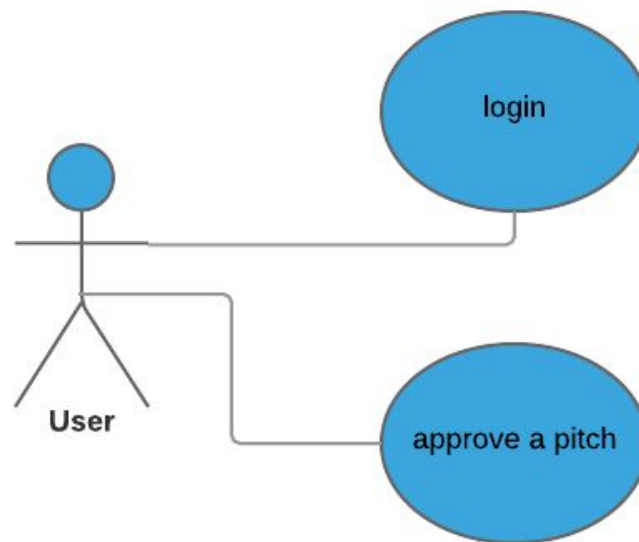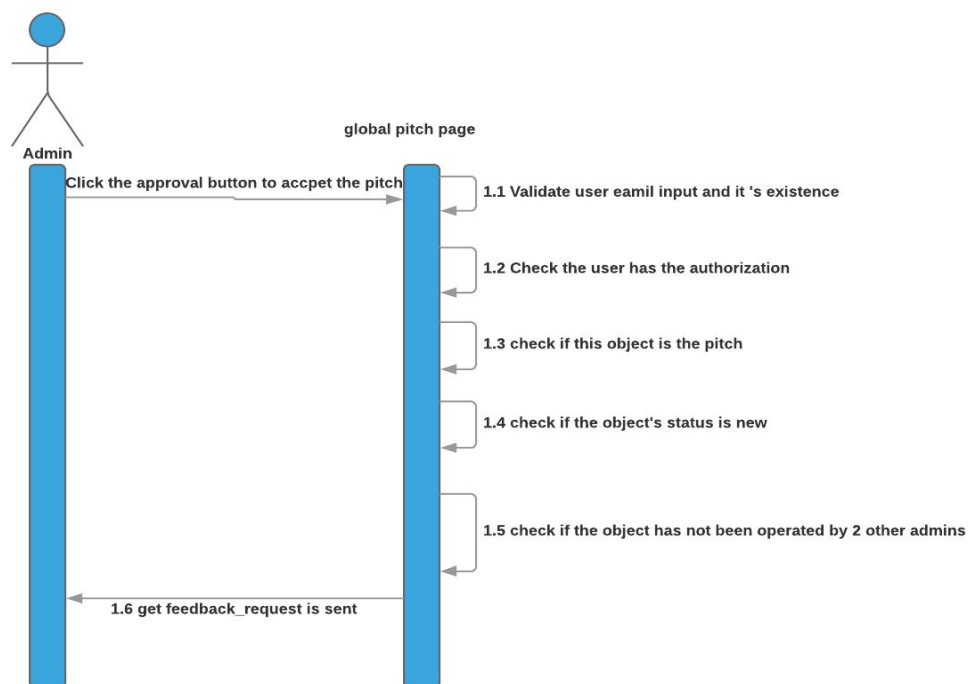

Figure 26: Process Realization Diagram - change the status of the a new pitch

4.2 Design Rationale

The design is solely following the principle to mimic and streamline System1's current workflow on idea formulation using most recent and mainstream technologies, including the utilization of modern database hosting, cloud service, web app hosting, mainstream frameworks etc. Meanwhile, the design aims to be maintainer friendly, meaning that it's modular and has clear boundary between subparts

5. Architectural Styles, Patterns and Frameworks

Table 148: Architectural Styles, Patterns, and Frameworks

Name	Description	Benefits, Costs, and Limitations
Three-Tier	Having 3 major parts: ● User Interface Tier(ReactJS): ● Logic Tier (Server, or Backend with Flask ● Data Tier (MongoDB)	● Changes in any part is independent from the other parts, no impact on other Tiers. ● This architecture has no cost, for using explicitly this architecture, we do not pay for other 3rd party system (JavaScript,Flask library and frameworks are open-source, likewise for the MongoDB)
Client Server	Having this style in 2 parts: ● Sending Request from computer browser to the application server ● Docker Tool communicating with Containers	● Modifiability, maintenance, evolvability, are the most important benefits to our project. (Client Pooyan even can later use our backend for mobile or another platform development)
ReactJS	React JS Software Pattern: A JS Library for building fast, simple, and scalable to create Web App	● With this structure, react code is more predictable, easier to debug. ● Easier to learn compared with other framework like Angularjs ● ReactJS is one of the most popular framework so that there are lots of templates could be used, which decrease the development and maintenance cost.
Flask	Backend service framework	● Better choice compared with Spring(Java) and thrift or

		grpc(Golang) since the client requires to use python. ● Since our application is not complex, so compared to Django, a lightweight framework like flask is easy to implement, which decreases the development and maintenance cost.