

# BUSINESS REQUIREMENTS DOCUMENT<sup>1</sup>

## Hubba

Version 3.0

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Github Repository:

<https://github.com/DevelopmentHellaHell/SeniorProject>

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<sup>1</sup> Template designed by Ms. Sandhya Jane and SmartSheet

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## Revision History

Version	Overview	Date
v.1.0	First draft, populate Account, Scheduling, Discovery System	September 28, 2022
v.2.0	Populate Notification, Listing Profile, Project Showcase System	September 29, 2022
v.2.1	Populate Project Wide Systems	October 2, 2022
v.2.2	Revisions	October 4, 2022
v.2.3	Revisions	October 5, 2022
v.2.4	Bringing Collaboration Feature into Main Feature Requirements	October 25, 2022
v.3.0	Overhaul to Core Components	November 24, 2022

## Glossary

Term	Definition
Authenticated User	Any user who has registered an account, verified their email, and is currently logged into that account.
Host	Authenticated users who create a listing available for renting.
Listing	A workspace created by Hosts that are discoverable and rentable.
Personal Identifiable Information (PII)	Information which can be used to identify a specific physical individual of the application among all possible users.
User	Anyone who is using the service.
OTP	One Time Password

## **Purpose**

Upon the approval of Request for Proposal Document from Client, the development team provides this Business Requirements Document to confirm the list of business rules and functionality of our product.

## **Culture and Universal Requirements**

- Hubba's supported culture will focus on users that reside within California.
- Our system will be in US English
- Our system will use the imperial system of measurement
- For additional information, please refer to the Hubba RFP.

## **Site-Wide Non-Functional Requirements<sup>2</sup>**

- The system must use the culture settings specified in the Culture and Universal Requirements section:
  - All text will be displayed in US English
  - All dates will be ordered in MM/DD/YYYY
  - All units will follow the imperial system
  - All times will displayed in Pacific Standard Time
- The system must be scalable enough to support up to 500 concurrent users while maintaining usability and responsiveness of the system.
- The system must be able to support 100 users within 1 hour while providing an average response time of at most 5 seconds per user per page while using a 12 Mbps connection speed.
  - Requests made to a third-party API are not included in response time
- The system must run on Chrome 104.x
- The error rate of all use-cases on average must not exceed 85%
  - Specific error rates listed under certain features' use-cases supersede this requirement
- The recovery of a site wide outage must not be greater than 48 hours
- The recovery of a feature wide outage must not be greater than 60 hours
- The system must be available to users 95% of the time during business hours PST
- Communication between the system and client must use HTTPS

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<sup>2</sup> AltexSoft, 2020

# Functional Requirements

The complete application shall provide the following functionality.

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## Logging System (Project Wide System)<sup>3</sup>

Business Rules:

- Log timestamp units will be in stored as a unix timestamp
- Log data is stored for a certain amount of time, default is 30 days
- Log data is prefixed with log type
  - Warning/Info/Error
- All failure responses will log the failure as an error log

Requirements:

Database Logging	
Precondition	N/A
Acceptance	All users, System
Requirement input	All database access events
Success criteria	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"><li>• Log displays database access request event</li><li>• Log displays data was successfully stored in the database</li></ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"><li>• Event was never logged</li><li>• Event was incorrectly logged</li></ul>
Failure response	N/A
Non-functional requirement	Logged events complete within 3 seconds
Priority	Medium

User Actions Logging	
Precondition	N/A
Acceptance	Authenticated users
Requirement input	User actions

<sup>3</sup> Core Components Requirements email: System Observability, Vong, 2022

Success criteria	Log displays user action event
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Log doesn't display user action event</li> <li>Log displays incorrect user action event</li> </ul>
Failure response	N/A
Non-functional requirement	Logged events complete within 3 seconds
Priority	Medium

Errors Logging	
Precondition	N/A
Acceptance	System
Requirement input	Output from Error Handling
Success criteria	Error is logged successfully
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Log doesn't display logged event</li> <li>Log displays incorrect event</li> </ul>
Failure response	N/A
Non-functional requirement	Logged events complete within 3 seconds
Priority	Medium

## Error Handling (Project Wide System)<sup>4</sup>

### Business Rules:

- All system errors should be logged.
- Return null, optional, or an empty list for failed function calls.
- Have optional auto-retry mechanism to repeat requests a number of times.

### Requirements:

Database Access Timeout	
Precondition	N/A
Acceptance	All users
Requirement input	All database access request (read and write)
Success criteria	N/A
Failure criteria	No database response within 5 seconds
Failure response	Display an error message
Non-functional requirement	N/A
Priority	High

Database Request Failure	
Precondition	N/A
Acceptance	All users, System
Requirement input	All database access requests (read and write)
Success criteria	N/A
Failure criteria	Database accesses fail to respond
Failure response	Auto retry the request after the 1st attempt immediately. After multiple tries within 5 seconds, if failure consists, display an error message
Non-functional requirement	Database access responses within 1 second
Priority	High

<sup>4</sup> Core Components Requirements email: Universal Requirements, Vong, 2022



Invalid User Input	
Precondition	User interaction that requires user input
Acceptance	All users
Requirement input	Input from user
Success criteria	N/A
Failure criteria	User input doesn't satisfy the use case's specific constraints
Failure response	Prompt user to enter the input again
Non-functional requirement	N/A
Priority	High

Invalid File	
Precondition	User interaction that requires user to upload a file
Acceptance	Authenticated users
Requirement input	A file from the user's local device
Success criteria	N/A
Failure criteria	<ul style="list-style-type: none"> <li>- File type is invalid</li> <li>- File size is invalid</li> </ul>
Failure response	Prompt the user to try again with appropriate format/size
Non-functional requirement	N/A
Priority	Medium

Access Denied	
Precondition	N/A
Acceptance	All users
Requirement input	User interaction that leads to an unauthorized access
Success criteria	N/A
Failure criteria	User still can access this part of the app

Failure response	Perform system maintenance often to scan for security loopholes
Non-functional requirement	N/A
Priority	High

## File Uploading (Project Wide System)

### Business rules:

- Image file must be in format .jpeg, .jpg, or .png
- Video file must be in format .mp4
- Image size does not exceed 25 MB
- Video size does not exceed 300 MB
- Up to 10 images may be uploaded at a time
- Up to 2 videos may be uploaded at a time

### Requirements:

Upload a File	
Precondition	User interaction to a upload file
Acceptance	Authenticated users
Requirement input	User interaction to choose files from local device to upload
Success criteria	File is uploaded for use in the following user features: <ul style="list-style-type: none"> <li>- Listing and booking preview</li> <li>- Project showcase</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Uploaded files do not display</li> <li>• Files displayed are not identical to files uploaded</li> <li>• Files were not uploaded in their entirety</li> </ul>
Failure response	Determine whether any files were sent to the database: <ul style="list-style-type: none"> <li>- If so, delete all files associated with the upload, display an appropriate message, and prompt user to refresh view</li> <li>- If not, retry upload once. On repeated failure, display an appropriate message and prompt user to refresh view</li> </ul>
Non-functional requirement	<ul style="list-style-type: none"> <li>• Individual files are stored in database within 20 seconds of upload from user</li> <li>• System must be able to handle up to 200 image uploads per hour or 50 video uploads per hour</li> </ul>
Priority	High

Cancel a File Upload	
Precondition	File(s) upload in process
Acceptance	Authenticated users

Requirement input	User input confirming cancellation
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"><li>• File upload is canceled</li><li>• Any currently uploaded files are deleted from the database</li></ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"><li>• Files remain in the database</li><li>• User files continue upload</li></ul>
Failure response	Determine whether any files were sent to the database: <ul style="list-style-type: none"><li>- If so, delete all files associated with the upload, display an appropriate message, and prompt user to refresh view</li></ul>
Non-functional requirement	<ul style="list-style-type: none"><li>• File cancellation request must be confirmed within 5 seconds</li><li>• Files must be deleted from database within 20 seconds of request confirmation</li><li>• User must confirm action between options of yes or no<ul style="list-style-type: none"><li>○ Selection of no returns the user to their previous view</li></ul></li></ul>
Priority	Medium

## Authorization (Project Wide System)<sup>5</sup>

### Business Rules:

- Unauthenticated users can only access system features which allow anonymous roles or do not require knowledge of the user
- A user attempting to access an unauthorized portion of the system will be logged and prevented from doing so
  - Unauthorized users attempting to access another user's protected system data
  - Unauthorized users attempting to execute another user's actions
  - Unauthorized users attempting to view another user's PII
  - Unauthorized users attempting to access a system view restricted from them
- Any changes to a user's access control will be active the next time the user authenticates their account

Authorizing account access controls	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be logged in</li> <li>• User's account must be enabled</li> </ul>
Acceptance	All users
Requirement input	User attempts to access, execute, or view a feature in the system which does not allow anonymous roles
Success criteria	<b>All of the following conditions must be fulfilled when a request for access is made:</b> <ul style="list-style-type: none"> <li>• If the user's role or account has access to the requested feature, access is granted to the user.</li> <li>• If the user's role or account has access to the request to view data, access is granted to the user.</li> <li>• If the user's role or account has access to the request to modify data, access is granted to the user.</li> <li>• If the user's role or account has access to the requested view, access is granted to the user.</li> </ul>
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Unauthorized access attempts are not correctly logged</li> <li>• Unauthorized user attempts to access protected feature, access protected data, modify protected data, or access protected view</li> <li>• Authorized user attempts to access protected view, but contains unauthorized data which the user cannot access</li> <li>• Authorized user attempts to access protected view, but contains unauthorized data which the user cannot modify</li> <li>• Unauthorized users gain access to protected feature, data, or view</li> <li>• Unauthorized users make changes to protected data</li> <li>• Authorized users denied access to protected feature, data, or view</li> <li>• Authorized users unable to make changes to protected data</li> </ul>

<sup>5</sup> Core Components Requirements email: Security, Vong, 2022

Failure response	<ul style="list-style-type: none"><li>• If security credential requirements are not met, prompt user to re-enter valid credentials</li><li>• If user is attempting to access an unauthorized feature, data, or view, a message is displayed to the user notifying them that they do not access</li><li>• If user is attempting to modify an unauthorized data, a message is displayed to the user notifying them that they do not have access</li><li>• If an unauthorized user is attempting to view data or modify data in an authorized view, a message notifying the user that there is unauthorized data located in the view will display</li></ul>
Non-functional requirement	<ul style="list-style-type: none"><li>• Error rate of users' authorization requests must not exceed 3%</li><li>• Authorization requests must be completed within 5 seconds</li><li>• Failed authorization requests made by a single user will notify system administrators when requests exceed 20 failures within an hour</li></ul>
Priority	Critical

## Account System<sup>6</sup>

### Business Rules:

- A valid email is in format username@domain
- Account Verification requires a one-time password (OTP)
  - OTP must satisfy the following:
    - Randomly generated
    - Minimum length of 8 characters
    - Valid characters:
      - Blank space
      - a-z
      - A-Z
      - . , @ ! -
  - OTP expires after 2 minutes of inactivity
- A valid password must satisfy the following:
  - Minimum 8 characters in length
  - Valid characters:
    - Blank space
    - a-z
    - A-Z
    - 0-9
    - . , @ ! -
- A unique username includes:
  - Minimum 8 characters in length
  - Valid Characters:
    - a-z
    - 0-9
    - . - @
- Users must send a cancellation request 48 hours prior to the start time of the booking. Otherwise, users can't cancel their booking.
- Rental History and Project Showcase can be viewed in interval of 10, 20, or 50 items
- Rental History can be sorted:
  - by booking date
  - by status
  - by owner of the listing
- Filter metrics for Rental History:
  - by keyword
  - by booking number
  - by booking date
  - by username of renter
  - by owner of the listing
- Project Showcase can be sorted:
  - by listing

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<sup>6</sup> Core Components Requirements email: User Administration, Vong, 2022

- by category
- by username of project showcase
- by most recently viewed
- Filter metrics for Project Showcase:
  - by keyword
  - by date viewed

## Requirements:

Account Creation (Registration)	
Precondition	<b>All of the following conditions must be fulfilled:</b> User must be on Registration/Login view User is not logged in User selected "Create an Account"
Acceptance	All users
Requirement input	<b>All of the following conditions must be fulfilled:</b> Confirmation via user input: <ol style="list-style-type: none"> <li>1. A unique username</li> <li>2. First name</li> <li>3. Last name</li> <li>4. A valid email</li> <li>5. A valid password</li> <li>6. A valid OTP verification</li> </ol>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>● A new user account is created</li> <li>● User data is stored in database</li> <li>● Verification email is sent to the user's email</li> </ul>
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>● New account isn't created</li> <li>● New account does not have identical login credentials to provided username and password</li> <li>● Verification email is not sent to the user's email</li> <li>● User's email is already registered in another account</li> <li>● Passphrase does not meet minimum requirements</li> </ul>
Failure response	Prompt the user to refresh the view
Non-functional requirement	<ul style="list-style-type: none"> <li>● Update database in less than 5 seconds</li> <li>● Error rate of users' creating an account must not exceed 5%</li> <li>● User must confirm account creation from options of yes or no               <ul style="list-style-type: none"> <li>○ Selection of no returns the user to their previous view</li> </ul> </li> </ul>
Priority	Critical



Account Deletion	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must have a valid account</li> <li>• User must be Logged in</li> <li>• User must be on Account Settings</li> </ul>
Acceptance	Authenticated Users
Requirement input	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Selection of Delete Account Prompt</li> <li>• Confirmation of Action</li> <li>• Confirmation of Permanent Deletion</li> <li>• Confirmation of user input</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• All stored information of account is erased</li> <li>• User is prompted an account deletion message</li> <li>• User is redirected to login menu</li> <li>• Default settings are shown</li> </ul>
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Account and associated Data is not deleted in Database</li> <li>• User is still within their account</li> <li>• User is not redirected to the main login menu</li> <li>• User's settings which differ from default settings are shown</li> </ul>
Failure response	Prompt the user to refresh the view
Non-functional requirement	<ul style="list-style-type: none"> <li>• Update database in less than 3 seconds</li> <li>• Error rate of users' deleting accounts must not exceed 10%</li> <li>• User must select account deletion from options of yes or no               <ul style="list-style-type: none"> <li>◦ Selection of no returns the user to their previous view</li> </ul> </li> <li>• User must confirm their selection of account deletion</li> <li>• User must acknowledge deletion has occurred</li> </ul>
Priority	Critical

Account Recovery	
Precondition	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must not be logged on</li> <li>• User must have a valid account in system</li> <li>• User must be restricted of access to their account</li> <li>• User must be on login screen</li> </ul>
Acceptance	Verified Users

Requirement input	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Request for Account Recovery</li> <li>Input of user's ID or email</li> </ul>
Success criteria	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User is sent an OTP to connected email</li> <li>User enters OTP to access account</li> </ul>
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>OTP is never sent</li> <li>OTP sent is invalid after entering into system</li> <li>OTP entered successfully but does not allow User access to account</li> <li>Account recovery does not redirect to Home Menu</li> </ul>
Failure response	Prompt the user to refresh page to retry
Non-functional requirement	OTP email be sent within 5 seconds of request Error rate of users' recovering their accounts must not exceed 5%
Priority	Critical

<b>Log in (Authentication)</b>	
Precondition	<b>One of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must not be logged in and on Registration/Login view</li> <li>User is logged in and attempting to access a restricted view</li> <li>User must have a verified account</li> </ul>
Acceptance	All users
Requirement input	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>A username or email</li> <li>A corresponding pre-registered password associated with the username/email</li> <li>OTP verification</li> </ul>
Success criteria	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Username, email and password match stored data</li> <li>User inputs correct OTP</li> <li>User can view and access their account view</li> <li>User successfully logs in within 3 attempts</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>User can't log in at the moment</li> <li>User successfully logged in but can't view their account view</li> <li>User's email has not yet been verified</li> <li>User fails login after 3 attempts within 24 hours of first failed attempt</li> <li>User inputs incorrect username and/or password</li> </ul>

	<ul style="list-style-type: none"> <li>• User inputs incorrect OTP</li> <li>• User inputs OTP correctly but shows as incorrect</li> <li>• User inputs correct criteria but account is disabled</li> <li>• Failure attempts are incorrectly logged</li> </ul>
Failure response	<ul style="list-style-type: none"> <li>- If email needs verifying, lead user to Email Verification</li> <li>- If user can't attempt log in at the moment, prompt the user to refresh the view</li> <li>- If user fails to login after 3 attempts within 24 hours               <ol style="list-style-type: none"> <li>1. Their account is disabled</li> <li>2. User is displayed a message that their account is disabled</li> <li>3. User is prompted to perform account recovery</li> </ol> </li> <li>- On failed attempts, system will indicate to user which of their credentials failed to match stored values</li> <li>- If a failure attempt is not correctly logged, the system will attempt to log that the failure attempt was incomplete</li> </ul>
Non-functional requirement	Database query results within 5 seconds
Priority	Critical

<b>Log out</b>	
Precondition	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be logged in</li> <li>• User is on Account view</li> </ul>
Acceptance	Authenticated users
Requirement input	User input confirming logout
Success criteria	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User can no longer view and access their account view</li> <li>• If user was on Account view when logging out, user will be led back to Home view which will indicate a successful logout</li> </ul>
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• User is still logged in</li> <li>• User can view and access unauthorized views</li> <li>• System Message does not appear after successful logout</li> </ul>
Failure response	<b>Any of the following conditions may occur:</b> <ul style="list-style-type: none"> <li>• Prompt the user to refresh the view</li> <li>• System message displays "Logout Operation Error"</li> </ul>
Non-functional requirement	User's activities will no longer be logged Logout succeeds within 5 seconds User must confirm log out from options of yes or no <ul style="list-style-type: none"> <li>• Selection of no returns the user to their previous view</li> </ul>

Priority	High
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<b>Reset Password</b>	
Precondition	User completed Email Verification
Acceptance	Authenticated users
Requirement input	A new valid password can be set
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User can log in with the newly set password</li> <li>• User data is updated in the database</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Password can't be reset at the moment</li> <li>• User can log in with previous passwords</li> <li>• Password stored is not identical to input password</li> </ul>
Failure response	Prompt the user to refresh the view
Non-functional requirement	Database query results within 5 seconds
Priority	High

<b>Settings (Account Modification)</b>	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Account view</li> <li>• User selects "Settings"</li> </ul>
Acceptance	Authenticated users
Requirement input	User input confirming action <b>Any one of the following conditions must be fulfilled:</b> User can change/update their credential/contact information such as: <ul style="list-style-type: none"> <li>- First Name</li> <li>- Last Name</li> <li>- Email (new email will need to be verified again using OTP)</li> <li>- Password</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Account view reflects the change(s)</li> <li>• User data is updated in database</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Account can't be updated at the moment</li> </ul>

	<ul style="list-style-type: none"> <li>Account does not reflect the change(s)</li> </ul>
Failure response	Prompt the user to refresh the view
Non-functional requirement	<ul style="list-style-type: none"> <li>Database query results within 5 seconds</li> <li>User must confirm new settings from options of yes or no               <ul style="list-style-type: none"> <li>Selection of no returns the user to their previous view</li> </ul> </li> <li>A change in password must be confirmed with the correct input of the old password</li> </ul>
Priority	Medium

Notification Settings	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must be on Account view</li> <li>User must choose "Notification settings"</li> </ul>
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	User will be led to Notification Settings Page
Failure criteria	N/A
Failure response	Prompt the user to refresh the view
Non-functional requirement	System responses within 2 seconds
Priority	Medium

Rental History View	
Precondition	User must be on Account view
Acceptance	Authenticated users
Requirement input	User selects "View History"
Success criteria	<ul style="list-style-type: none"> <li>If user has no booking, view is empty</li> <li>Otherwise, rental history is shown in chronicle order of bookings</li> </ul>
Failure criteria	User has a rental history but can't see any of them
Failure response	Prompt the user to refresh the view and try again
Non-functional requirement	Database query results within 5 seconds

Priority	High
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Search in Rental History	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Account view</li> <li>• User must select "View History"</li> </ul>
Acceptance	Authenticated users
Requirement input	User input confirming action on Rental History view to search - User can sort the results - User can filter the results
Success criteria	The related booking will be displayed
Failure criteria	Matching booking is not displayed
Failure response	Display error message asking user to refresh view
Non-functional requirement	Database query results within 5 seconds
Priority	Low

Rental Cancellation	
Precondition	User must be on Rental history view
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User choose to cancel a booking</li> <li>• User input confirming action for cancelation</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• There is a confirmation box of cancellation the selected booking</li> <li>• There is communication to the host of the cancellation</li> <li>• A confirmation email is sent to the user with cancellation information including date, location, and time frame</li> <li>• Booking is updated in database</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Confirmation of booking cancellation is not sent to user</li> <li>• Confirmation of booking cancellation is not sent to host</li> <li>• Removal of booking in database is incomplete</li> <li>• Message on application view does not indicate cancellation</li> </ul>
Failure response	Determine whether a booking cancellation was sent to the database

	<ul style="list-style-type: none"> <li>- If confirmed, notify user confirming booking cancellation</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that booking cancellation was not confirmed</li> </ul>
Non-functional requirement	<ul style="list-style-type: none"> <li>• Update database in less than 5 seconds</li> <li>• User must confirm rental cancellation from options of yes or no</li> <li>• Selection of no returns the user to their previous view</li> </ul>
Priority	Critical

Project Showcase View	
Precondition	User must be on Account view
Acceptance	Authenticated users
Requirement input	User input confirming action on Account view to view project showcase
Success criteria	<ul style="list-style-type: none"> <li>- If user has no project history, view is empty</li> <li>- Otherwise, project showcase is shown in chronological order of date created</li> </ul>
Failure criteria	User can't see their published project showcase
Failure response	Display error message asking user to refresh view
Non-functional requirement	Database query results within 5 seconds
Priority	Medium

Search in Project Showcase View	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Account view</li> <li>• User must choose to view Project Showcase</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input confirming action on Project Showcase View to search</li> <li>• User can search an existing booking by sorting: by listing, by category</li> <li>• User can search an existing booking by filter: by keyword</li> </ul>
Success criteria	The related project showcase will be displayed
Failure criteria	Matching project is not displayed
Failure response	Display error message asking user to refresh view

Non-functional requirement	Database query results within 5 seconds
Priority	Low

Edit Project Showcase	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Account view</li> <li>• User must choose to view Project Showcase</li> </ul>
Acceptance	Authenticated users
Requirement input	User input confirming action on Project Showcase View to update
Success criteria	User will be directed to Project Showcase System to make change
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase can't be updated</li> <li>• Project Showcase view isn't displayed</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Response to user interaction results within 1 second
Priority	Medium



## Administration<sup>7</sup>

### Business Rules:

- Admin Accounts have exclusive access to these systems:
  - Access to view and modify all accounts
  - Access to modify associated data attached to user profile
  - Access to Account Operation:
    - Create Account
    - Modify Account
    - Delete Account
    - Disable Account
    - Enable Account
- Admin Accounts must be able to affect all users, including other Admin Accounts
- Admin Accounts do not have access to view or alter sensitive material of User Accounts such as name, address, password, etc.
- Admin Accounts can only be created by other Admin Accounts
- An Admin Account cannot be deleted if it's the last Admin Account registered with the system
- Admin Accounts have exclusive access to Usage Analysis Dashboard
  - User Analysis Dashboard contains all relevant data retrieved from database
  - Key Performance Indicators (KPIs) will be displayed automatically on dashboard
    - KPIs include:
      - Number of logins (latest 3 months)
      - Number of registrations (latest 3 months)
      - Number of bookings (latest 3 months)
      - Number of new listings (latest 3 months)
    - KPIs must automatically refresh every 60 seconds

Admin Create Account	
Precondition	<b>All of the following conditions must be fulfilled:</b> User must be on User Management view User must be logged in
Acceptance	System administrator user
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ol style="list-style-type: none"> <li>1. A unique username</li> <li>2. First name</li> <li>3. Last name</li> <li>4. A valid email</li> <li>5. A valid password</li> <li>6. Account type</li> </ol>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>● A new user account is created</li> <li>● User data is stored in database</li> <li>● Account is verified</li> </ul>

<sup>7</sup> Core Components Requirements email: User Administration, Vong, 2022

Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• New account isn't created</li> <li>• New account does not have identical login credentials to provided username and password</li> <li>• User's email is already registered in another account</li> <li>• Passphrase does not meet minimum requirements</li> </ul>
Failure response	<ul style="list-style-type: none"> <li>• Prompt the user to refresh the view</li> <li>• If security credential requirements are not met, prompt user to re-enter valid credentials</li> </ul>
Non-functional requirement	Change in selected user's account status completes within 5 seconds
Priority	Medium

<b>Admin Update Account</b>	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on User Management view</li> <li>• User must be logged in</li> </ul>
Acceptance	System administrator user
Requirement input	A user account must be selected <b>Any one of the following conditions must be fulfilled:</b> User can change/update the selected user's profile information such as: <ul style="list-style-type: none"> <li>- First Name</li> <li>- Last Name</li> <li>- Other account data</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Account view reflects the change(s)</li> <li>• Selected user's data is updated in database</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Account can't be updated at the moment</li> <li>• Account does not reflect the change(s)</li> </ul>
Failure response	Prompt the admin user to refresh the view
Non-functional requirement	Change in selected user's account status completes within 5 seconds
Priority	Medium

<b>Admin Delete Account</b>
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Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on User Management view</li> <li>• User must be logged in</li> </ul>
Acceptance	System administrator user
Requirement input	<b>All the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• A user account must be selected</li> <li>• Selection of Delete Account Prompt</li> <li>• Confirmation of Action</li> <li>• Confirmation of Permanent Deletion</li> <li>• Confirmation of User Input</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• All stored information of account is erased</li> <li>• User is prompted with an account deletion message</li> </ul>
Failure criteria	<b>Any of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Account and associated data is not deleted in database</li> <li>• A system message is not displayed confirming the selected account has been deleted</li> </ul>
Failure response	Prompt the admin user to refresh the view
Non-functional requirement	<ul style="list-style-type: none"> <li>• Change in selected user's account status completes within 5 seconds</li> </ul> <p>User must select account deletion from options of yes or no</p> <ul style="list-style-type: none"> <li>◦ Selection of no returns the user to their previous view</li> <li>• User must confirm their selection of account deletion</li> <li>• User must acknowledge deletion has occurred</li> </ul>
Priority	Medium

Admin Disable Account	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on User Management view</li> <li>• User must be logged in</li> <li>• Selected user account must be enabled</li> </ul>
Acceptance	System administrator user
Requirement input	A user account must be selected
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Selected account is disabled</li> <li>• Any active authenticated session is immediately deactivated and the owner of the selected account is securely logged off</li> </ul>

Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Owner of selected account can still log in and access account features</li> <li>Owner of selected account is able to remain logged in after being disabled</li> </ul>
Failure response	Notify system administrator that account is still enabled or active
Non-functional requirement	Change in selected user's account status completes within 5 seconds
Priority	Medium

### Admin Enable Account

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must be on User Management view</li> <li>User must be logged in</li> <li>Selected user account must be disabled</li> </ul>
Acceptance	System administrator user
Requirement input	A user account must be selected
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Selected account is enabled</li> <li>Owner of selected account is able to log in and access account features</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Owner of selected account cannot log in and access account features</li> <li>Owner of selected account is unable to remain logged in after being enabled</li> </ul>
Failure response	Notify system administrator that account is still disabled or inactive
Non-functional requirement	Change in selected user's account status completes within 5 seconds
Priority	Medium

### Admin View Account

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must be on User Management view</li> <li>User must be logged in</li> </ul>
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Acceptance	System administrator user
Requirement input	A user account must be selected
Success criteria	Selected account details are displayed, including all listings, bookings, and project showcases.
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Selected account details are hidden from view</li> <li>Selected account details displayed are not identical to actual selected account details</li> </ul>
Failure response	Notify system administrator that not all account details could be properly displayed and prompt administrator to refresh view
Non-functional requirement	Change in selected user's account status completes within 5 seconds
Priority	Medium

Usage Analysis Dashboard	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must be on User Management view</li> <li>User must be logged in</li> </ul>
Acceptance	System administrator user
Requirement input	User input confirming action to view Usage Analysis Dashboard
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User can view KPIs through interface</li> <li>Relevant Data is retrieved from Database</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Unable to retrieve relevant data</li> <li>KPIs do not refresh in intervals of 60 seconds</li> <li>KPIs do not refresh entirely</li> <li>KPIs do not retrieve data from database</li> <li>View does not load within 15 seconds</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	<ul style="list-style-type: none"> <li>KPIs refresh in intervals of 60 seconds</li> <li>View loads within 15 seconds</li> <li>Data access within 5 seconds</li> </ul>
Priority	Medium

## Scheduling System

### Business Rules:

- It is illegal to enter an end date which precedes a start date or a start date which precedes the current date, doing so will prompt the user to enter a legal time frame
  - Dates will be determined using PST
- A user will only view the calendar on a month-to-month basis, starting with the last week of the previous month and extending to the first week of the next month.
  - Changing the currently viewed month is limited to the current month and 6 months in advance.
- Each week of a month will start with Sunday and always list every day of the week even if there is no time frame available for booking on that day.
- Cancellation of a booking must be requested 48 hours before the start date and time of the booking.
  - In the event that a cancellation is requested within this time frame, the user will be asked to contact the host directly.

### Requirements:

Change Monthly Calendar View	
Precondition	User must be on calendar view
Acceptance	All users
Requirement input	User decision of next month or previous month
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Month in calendar view is the user's intended month, determined by user input</li> <li>• New month in calendar view is populated by available time frames for potential booking</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Month does not change to chosen month</li> <li>• Calendar view does not reflect real-life calendar month</li> <li>• Calendar format shifts or changes calendar display</li> <li>• Selected time frames are shown on incorrect months</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	<ul style="list-style-type: none"> <li>• Changes month within 2 seconds</li> <li>• Bookings on a listing's calendar view must load within 10 seconds of monthly display</li> <li>• Users cannot send more than 5 requests to change monthly view within 10 seconds</li> </ul>
Priority	Low

Filter Calendar View	
Precondition	User must be on calendar view
Acceptance	All users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Start date</li> <li>• End date</li> </ul> <b>The following conditions are not required:</b> <ul style="list-style-type: none"> <li>• Static start time for all days</li> <li>• Static end time for all days</li> <li>• Start time for each specific day</li> <li>• End time for each specific day</li> <li>• Type of workspace</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Filtered time frames are highlighted</li> <li>• Time frame is exactly as indicated by user input</li> <li>• Only available unbooked time frames are listed</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Time frames for bookings which are unavailable are shown</li> <li>• Time frames outside of the filtered interval are shown</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Filter calendar within 3 seconds
Priority	Low

Unfilter Calendar View	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on calendar view</li> <li>• Calendar must be filtered</li> </ul>
Acceptance	All users
Requirement input	Confirmation via user input
Success criteria	No time frames are highlighted
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• All available listings are not shown</li> <li>• Calendar view is not restored to default view</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Filter calendar within 1 second

Priority	Low
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Select Listing Time Frame	
Precondition	User must be on calendar view
Acceptance	All users
Requirement input	<p><b>All of the following conditions must be fulfilled:</b></p> <ul style="list-style-type: none"> <li>• User input confirming chosen day</li> <li>• Indicate single day or multi-day booking</li> <li>• Input start time</li> <li>• Input end time</li> </ul> <p><b>The following conditions are not required:</b></p> <ul style="list-style-type: none"> <li>• Input each individual day's specific start time</li> <li>• Input each individual day's specific end time</li> </ul>
Success criteria	<p><b>All of the following conditions must be fulfilled:</b></p> <ul style="list-style-type: none"> <li>• Selected time frames are highlighted in calendar view</li> <li>• Window in sidebar appears showing selected dates with start and end times</li> <li>• Price for selected time frames are shown</li> </ul>
Failure criteria	<p><b>Any one of the following conditions occurring constitutes failure:</b></p> <ul style="list-style-type: none"> <li>• Selected time frames are not highlighted</li> <li>• Highlighted sections do not reflect selected time frame exactly</li> <li>• Calendar view shifts to a different month outside of selected time frame</li> <li>• Highlighted sections do not persist while remaining on view</li> <li>• Price is not accurate as based on Host's price per hour</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Selection of a time frame must be confirmed within 2 seconds
Priority	High

Alter Selected Time Frame	
Precondition	<p><b>All of the following conditions must be fulfilled:</b></p> <ul style="list-style-type: none"> <li>• User must be on calendar view</li> <li>• User must have selected time frame</li> </ul>
Acceptance	All users
Requirement input	<p><b>All of the following conditions must be fulfilled:</b></p> <ul style="list-style-type: none"> <li>• There exists a selected time frame in calendar</li> <li>• Indicate single day or multi-day booking</li> </ul>



	<ul style="list-style-type: none"> <li>• Input start time</li> <li>• Input end time</li> </ul> <b>The following conditions are not required:</b> <ul style="list-style-type: none"> <li>• Input each individual day's specific start time</li> <li>• Input each individual day's specific end time</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Selected time frames are highlighted in calendar view</li> <li>• Window in sidebar appears showing selected dates with start and end times</li> <li>• Previous time frames which are no longer selected are no longer highlighted</li> <li>• Price for newly selected time frames are shown</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Any part of the calendar is still selected</li> <li>• Any part of the calendar is still highlighted</li> <li>• Calendar view changes to a different month</li> <li>• Price is not accurate as based on Host's price per hour</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Selection of a time frame must be confirmed within 2 seconds
Priority	High

Deselect Selected Time Frame	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on calendar view</li> <li>• User must have selected time frame</li> </ul>
Acceptance	All users
Requirement input	Confirmation via user input
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Calendar has returned to a completely unhighlighted view</li> <li>• There is no longer a sidebar window indicating selected time frames</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Default calendar view is not shown</li> <li>• Any portion of the calendar is still highlighted</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Deselection of a time frame must be confirmed within 2 seconds. User must select the deselect time frame option on view to confirm action

Priority	Medium
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Booking of Listing Time Frame	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on calendar view</li> <li>• User must have selected time frame</li> <li>• User must not be owner of listing</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Selected time frame for a listing</li> <li>• User confirmation input</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• There is a confirmation view of booking the selected time frame</li> <li>• Notify user and host of the selection with listing information including date, location, price, and time frame</li> <li>• The listing's availability during the selected time frame is indicated as unavailable</li> <li>• Booking information is stored in database</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Confirmation of booking is not sent to user</li> <li>• Confirmation of booking is not sent to host</li> <li>• Confirmation box of booking is not displayed</li> </ul>
Failure Response	Determine whether a booking request was sent to the database - If confirmed, notify user confirming booking - If unconfirmed, retry once. On repeated failure, notify user that booking was not confirmed
Non-functional requirement	<ul style="list-style-type: none"> <li>• Confirmation of a time frame must be confirmed within 5 seconds</li> <li>• User must confirm action from options of yes or no <ul style="list-style-type: none"> <li>◦ Selection of no returns the user to their previous view</li> </ul> </li> <li>• Error rate of users' booking must not exceed 5%</li> </ul>
Priority	Critical

Cancellation of Booked Time Frame	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on calendar view</li> <li>• User must have a booking</li> </ul> User must be logged in

Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Selection of the booked time frame which is being canceled</li> <li>• Reason for cancellation</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• There is a confirmation box of cancellation the selected time frame</li> <li>• There is communication to the host of the cancellation</li> <li>• The listing's availability during the selected time frame is indicated as available</li> <li>• A confirmation email is sent to the user with cancellation information including date, location, and time frame</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Confirmation of booking cancellation is not sent to user</li> <li>• Confirmation of booking cancellation is not sent to host</li> <li>• Removal of booking in database is incomplete</li> <li>• Message on application view does not indicate cancellation</li> </ul>
Failure Response	Determine whether a booking cancellation was sent to the database - If confirmed, notify user confirming booking cancellation - If unconfirmed, retry once. On repeated failure, notify user that booking cancellation was not confirmed
Non-functional requirement	<ul style="list-style-type: none"> <li>• Cancellation of a time frame must be confirmed within 5 seconds</li> <li>• User must confirm action of cancellation from options of yes or no <ul style="list-style-type: none"> <li>◦ Selection of no returns the user to their previous view</li> </ul> </li> <li>• Error rate of users' booking cancellations must not exceed 10%</li> </ul>
Priority	Critical

## Discovery System

### Business Rules:

- A list of multiple random listings or projects curated for the user will be initially be displayed on arrival to the discovery system view, default of 50 results are displayed
- Illegal input characters that are not alphanumeric will be filtered out upon searching using the search bar
- The search bar will have a limit to the number of characters that can be used for a search query, default is 200 characters
- Certain amount of results will be displayed at a time, default is 50 results
- Filtering search query can be sorted by
  - Workspaces
    - Location
    - Availability
  - Project Showcases
    - Reputation
    - Location

### Requirements:

Search Bar Input	
Precondition	User must be on Discovery view
Acceptance	All users
Requirement input	A string of text of the user's search query
Success criteria	A list of suggested results appear under the search bar if any
Failure criteria	N/A
Failure Response	N/A
Non-functional requirement	Database query with results within 5 seconds
Priority	High

Search	
Precondition	User must be on Discovery view
Acceptance	All users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input confirming action</li> <li>• A valid search entry</li> </ul>

Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• A list of results appear</li> <li>• Results that are related to the search query are returned</li> <li>• If no results, display a message</li> </ul>
Failure criteria	Failed to fetch database data
Failure Response	<ul style="list-style-type: none"> <li>- If response is successful, proceed to display and list /the number of results</li> <li>- If response is unsuccessful, retry multiple times then display error message regarding search failure</li> </ul>
Non-functional requirement	Database query with results within 5 seconds
Priority	High

Filter Results	
Precondition	User must be on Discovery view
Acceptance	All users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Selected filter options</li> <li>• Valid search entry</li> </ul>
Success criteria	<ul style="list-style-type: none"> <li>- A list of filtered results appear</li> <li>- If no results, display a message</li> </ul>
Failure criteria	Failed to fetch database data
Failure Response	<ul style="list-style-type: none"> <li>- If response is successful, proceed to display and list /the number of results</li> <li>- If response is unsuccessful, retry multiple times then display error message regarding search failure</li> </ul>
Non-functional requirement	Database query with results within 5 seconds
Priority	Low

Unfilter Results	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Discovery view</li> <li>• A list of filters are applied to the resulting search query</li> </ul>

Acceptance	All users
Requirement input	User input confirming action
Success criteria	- A list of results of the original search query is returned without any filters - If no results, display a message
Failure criteria	Failed to fetch database data
Failure Response	- If response is successful, proceed to display and list /the number of results - If response is unsuccessful, retry multiple times then display error message regarding search failure
Non-functional requirement	Database query with results within 5 seconds
Priority	Low

Open Result	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Discovery view</li> <li>• A list of results from a users (filtered) search query</li> </ul>
Acceptance	All users
Requirement input	Selection of a singular result
Success criteria	Redirect a user to a new view relating to the selected result
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Failed to fetch database data</li> <li>• View is no longer accessible</li> </ul>
Failure Response	- If response is successful, proceed to display and list /the number of results - If response is unsuccessful, retry multiple times then display error message regarding search failure - If view request is blocked display error message of view unavailability
Non-functional requirement	<ul style="list-style-type: none"> <li>• Database query with results within 5 seconds</li> <li>• New view opens within 3 seconds</li> </ul>
Priority	High

## Notification System

### Business Rules:

- Authenticated users can enable notifications based on selected preferences.
  - Default setting will have only on site and email notifications
  - Additional selections include text notifications
  - Options to select all, some, or none are available
- A notification will be sent anytime a user changes their Account settings
  - Changes to password will specifically state password has been changed
- Notification on the website will be displayed via a popup banner and will fade away over a short period of 8 seconds.
- A List Menu for notifications will hold 50 notifications before deleting the oldest ones.
- Notifications are queued for 1 minute. Any following notifications during that interval will be compiled into a group notification before being sent out.
- Group Notifications can be expanded on in List Menu to view each individual notification packaged in.
- Authenticated users will be able to filter through Notification Types in List Menu.
  - Notification Types: Scheduling, Workspace, Project Showcase, Other

### Requirements:

Display On-Site Notification	
Precondition	User must be logged in
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Notification Banner pops up and slowly fades away after a duration.</li> <li>• Notification gets sent to Notification Menu.</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Notification Banner doesn't disappear after appearing on Notification Menu</li> <li>• Notification repeats after being dismissed</li> </ul>
Failure Response	N/A
Non-functional requirement	Appear within 2 seconds
Priority	High

Select Notification Content Type	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User has navigated to Notification Settings on Account view</li> </ul>

	<ul style="list-style-type: none"> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Toggle setting per notification type</li> <li>Confirmation of changed settings</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Saved changes remain after loading another view</li> <li>Notification based on type chosen appear</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Changed settings reset or retain previous form after loading new view</li> <li>Notification based on type not chosen appear</li> <li>Notification based on type chosen do not appear</li> </ul>
Failure Response	None
Non-functional requirement	<ul style="list-style-type: none"> <li>Saved changes take into effect after 2 seconds</li> <li>User must confirm change in notification type from options of yes or no               <ul style="list-style-type: none"> <li>Selection of no returns the user to their previous view</li> </ul> </li> </ul>
Priority	Medium

Select Notification Delivery Method Type	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User has navigated to Notification Settings on Account view</li> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Toggle setting per notification method</li> <li>If Text Message toggle active, enter phone number</li> </ul>
Success criteria	Notifications sent and received at selected destinations
Failure condition	Notifications are not received at selected destinations
Failure Response	None
Non-functional requirement	Notifications to external destinations sent and received within 5-10 seconds.
Priority	Low



## Sending Account Change Notification

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User has changed setting on their Profile</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	Users receive email after changes in profile have been saved. <ul style="list-style-type: none"> <li>- Changes specifically to password will state as such</li> </ul>
Failure condition	No email is sent after saving changes
Failure Response	N/A
Non-functional requirement	Email sent within 2 minutes of changes
Priority	Low

## Displaying Notification Banner

Precondition	User must be logged in
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	Notification Banner pops up and disappears after a set duration.
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Notification Banner does not disappear after set duration</li> <li>• Notification Banner does not appear at all</li> </ul>
Failure Response	N/A
Non-functional requirement	Notification Banner disappears after 8 seconds of being displayed
Priority	Medium

## Expand Notification List

Precondition	User must be logged in
Acceptance	Authenticated users
Requirement input	User input to Expand Notification Menu

Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Notification Menu opens</li> <li>• Loads categories and notifications</li> <li>• Notifications are in order from most recent to oldest</li> <li>• Can scroll through list</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Notification Menu does not load</li> <li>• No Notifications load</li> </ul>
Failure Response	Error message prescribing to reload view
Non-functional requirement	<ul style="list-style-type: none"> <li>• Be able to load all features and notifications within 3 seconds</li> <li>• User must select the expand notification option on view to confirm action</li> </ul>
Priority	High

### Display Group Notifications

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• A notification has arrive within 1 minute of initial notification starting queue</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Group Notification successfully displays how many notifications are contained</li> <li>• Group Notification reduces amount of notifications pinged</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Group Notification pings but still displays each individual one</li> <li>• Several individual notifications ping</li> </ul>
Failure Response	N/A
Non-functional requirement	Notification be displayed within 3 seconds
Priority	Low

### Expand Group Notifications

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User is on Notification Menu</li> </ul>
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	<ul style="list-style-type: none"> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	User input on a Group Notification
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Notification clearly identifies how many notifications are contained within</li> <li>Clicking grouped notification expands into a list of each individual notification</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Group Notification does not show up on Notification Menu</li> <li>Notifications are not grouped as they should be</li> <li>Group Notification does not expand</li> </ul>
Failure Response	N/A
Non-functional requirement	Expansion in 3 seconds
Priority	Low

### Auto Deletion at Capacity

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User is in Notification Menu</li> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	At a max capacity of 50 notifications, new notifications will enter while the oldest will be replaced
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Notification amount exceed capacity</li> <li>Auto Deletion occurs pre-maturely</li> </ul>
Failure Response	N/A
Non-functional requirement	Auto Deletion occurs 3 seconds after new notification comes in
Priority	Low

### Clear All Notifications

Precondition	<b>All of the following conditions must be fulfilled:</b>
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	<ul style="list-style-type: none"> <li>• User is on Notification Menu</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	User input for Clear All
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Popup occurs to confirm clearing all notifications</li> <li>• Clearing all notification completely erases all notifications in the Notification Menu</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Fail to completely dismiss all notifications</li> <li>• After reloading view, notifications persist</li> </ul>
Failure Response	N/A
Non-functional requirement	Dismissal of all notifications within 4 seconds
Priority	Medium

### Dismissal of Individual Notification

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User is on Notification Menu</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	User input on Notification Banner
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Option to clear appears after hovering notification</li> <li>• Clicking “clear” dismisses individual notification</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Notification does not clear</li> <li>• Notification persist after reloading view</li> </ul>
Failure Response	N/A
Non-functional requirement	Dismissed within 2 seconds
Priority	High

### Filtering Notifications in List Menu

Precondition	<b>All of the following conditions must be fulfilled:</b>
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	<ul style="list-style-type: none"><li>• User must be on Notification Menu</li><li>• User must be logged in</li></ul>
Acceptance	Authenticated users
Requirement input	User prompt on Filter
Success criteria	User selects Filter Prompt and Notifications are filtered by that category - Multiple categories can be selected at once - Deselecting all categories returns menu to its original state
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"><li>• Selecting Filter does not filter notifications</li><li>• Deselecting Filters do not return List Menu to original state</li></ul>
Failure Response	N/A
Non-functional requirement	Filter Notifications within 3 seconds
Priority	Medium

## Listing Profile System

### Business Rules:

- Ratings must be of integer values 1, 2, 3, 4, or 5.
- All user input text is to be plain text, without formatting.
- Listing indicates when it was last edited by the Host by date
- Comments and ratings display their star rating, the date created/edited, and the name of the user
  - The user can elect to appear anonymous
  - Comments are limited to a certain amount of characters, default is 250

### Requirements:

Listing Initialization (Does not have an account)	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User is on the home view.</li> <li>• User must be logged out</li> </ul>
Acceptance	Unauthenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input confirming creation of listing</li> <li>• User is prompted to login</li> </ul>
Success criteria	Page switches to the Login view
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Page is unable to load</li> <li>• Issue with login</li> </ul>
Failure Response	Display error message and prompt user to try again
Non-functional requirement	System responses within 3 seconds
Priority	Critical

Listing Initialization (Has an account)	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User is on the home view or Listings view</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input confirming creation of listing</li> </ul>

	<ul style="list-style-type: none"> <li>User title input</li> </ul>
Success criteria	Page switches to the Listing/Listing Draft Editing view
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Page is unable to load</li> <li>Issue with creating a new Listing</li> </ul>
Failure Response	Display error message and prompt user to try again
Non-functional requirement	System responses within 3 seconds
Priority	Critical

<b>"My Listings" view</b>	
Precondition	User must be logged in
Acceptance	Authenticated users
Requirement input	User interaction
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>If user has no listing, view is empty</li> <li>Otherwise, a list of published and listing drafts will be displayed</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Page is unable to load</li> <li>Listings are unable to be fetched</li> </ul>
Failure Response	-Prompt the user to try again later
Non-functional requirement	System responses within 3 seconds
Priority	High

<b>Edit a Listing/Listing Draft</b>	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User is on home view or "My Listings" view with at least one draft or listing</li> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> User input confirming action to edit If listing is already published, required sections are: <ol style="list-style-type: none"> <li>Listing Title</li> </ol>

	<ol style="list-style-type: none"> <li>2. Description</li> <li>3. Address/Location</li> <li>4. Image and/or Video file(s)</li> <li>5. Price</li> <li>6. Availability</li> </ol>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Listing/Listing Draft is updated in database</li> <li>• Listing/Listing Draft is updated in User's "My Listings" view</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Listing/Listing Draft info unable to load</li> <li>• Listing/Lighting Draft does not display updated fields</li> </ul>
Failure Response	Display error message and prompt user to try again
Non-functional requirement	Database updates within 3 seconds
Priority	Critical

Create a Listing Draft	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User is on editing a Listing/Listing Draft</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input on editing</li> <li>• User input for confirmation of changes</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• A listing is successfully created</li> <li>• New listing is displayed on My Listings view</li> </ul>
Failure condition	Listing Draft unable to be saved
Failure Response	Prompt the user to try again later
Non-functional requirement	<ul style="list-style-type: none"> <li>• Database updates within 3 seconds</li> <li>• User must confirm action from options of yes or no <ul style="list-style-type: none"> <li>○ Selection of no returns the user to their previous view</li> </ul> </li> </ul>
Priority	Critical

Delete a Listing/Listing Draft	
Precondition	User is on "My Listings" view



Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input choosing specific listing or listing draft</li> <li>• User input confirming deletion</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Listing/Listing Draft is no longer shown to user</li> <li>• Listing/Listing Draft is removed from database</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Listing/Listing Draft removal message not received by server</li> <li>• Listing/Listing Draft removal unsuccessful from database</li> <li>• Listing/Listing Draft still displays on “My Listings” view</li> </ul>
Failure Response	Display error message and prompt user to try again later
Non-functional requirement	Database updates within 3 seconds
Priority	Critical

Publish a Listing/Listing Draft	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User is on “My Listings” view</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> User interaction to publish a listing draft Required user text input sections: <ol style="list-style-type: none"> <li>1. Listing Title</li> <li>1. Description</li> <li>2. Address/Location</li> <li>3. Image and/or Video file(s)</li> <li>4. Price</li> <li>5. Availability</li> </ol>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Listing Draft is published</li> <li>• Listing Draft is updated to database</li> <li>• Listing Draft is shown as Listing to user</li> <li>• New Listing is saved as such and is viewable by other users</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Listing/Listing Draft publish message not received by server</li> <li>• Listing/Listing Draft publish unsuccessful from database</li> </ul>

Failure Response	Display error message and prompt user to try again
Non-functional requirement	<ul style="list-style-type: none"> <li>• Database updates within 3 seconds</li> <li>• Error rate of users' publishing a listing must not exceed 10%</li> </ul>
Priority	Critical

### Listing Rating and Commenting

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User has had previous booking with Listing they are trying to rate and/or comment on</li> <li>• User has not left a review on Listing previously</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Star rating required <b>The following conditions are not required:</b> Commenting
Success criteria	Rating appears to all users
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Rating submitted without meeting requirements</li> <li>• Rating unsuccessfully sent</li> <li>• Rating not viewable to all users</li> </ul>
Failure Response	Display error message and prompt user to try again
Non-functional requirement	Database updates within 3 seconds
Priority	Low

### Edit Listing Review

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User has previously left a validated review on the Listing</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Star rating required <b>The following conditions are not required:</b> Commenting
Success criteria	Rating appears to all users

Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Rating submitted without meeting requirements</li> <li>• Rating unsuccessfully sent</li> <li>• Rating not viewable to all users</li> </ul>
Failure Response	Display error message and prompt user to try again
Non-functional requirement	Database updates within 3 seconds
Priority	Low

Delete Listing Review	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User has previously left a validated review on the Listing</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User interaction with specific listing</li> <li>• User input confirming deletion</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Review no longer shown to users</li> <li>• Review removed from database</li> <li>• Rating no longer counts towards average</li> </ul>
Failure condition	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Rating deletion unsuccessfully sent</li> <li>• Rating change not viewable to all users</li> </ul>
Failure Response	Display error message and prompt user to try again
Non-functional requirement	Database updates within 3 seconds
Priority	Low

## Project Showcase System

### Business Rules:

- Project showcase descriptions will support text markdown syntax
- A project showcase must include a 1 word title, 50 word description, and 1 file upload for minimal publishing requirements
- Comments will be viewable at intervals of 10, 20, 50

### Requirements:

View Project Showcase	
Precondition	User must be on Project Showcase view of a listing
Acceptance	All users
Requirement input	Selection of desired showcase to view
Success criteria	Showcase title, description, and attached files are viewable
Failure criteria	Showcase title, description, or attached files are unviewable
Failure response	<ul style="list-style-type: none"> <li>- If confirmed, forward user to project showcase view</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that view request was not confirmed</li> </ul>
Non-functional requirement	Project showcase must be shown within 5 seconds
Priority	High

Like Project Showcase	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a Project Showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via user input
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Project showcase like tally increases by one</li> <li>• User data stores liked project showcase</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Like is not reflected on project showcase</li> <li>• Like is not linked to user</li> </ul>

Failure response	<ul style="list-style-type: none"> <li>- If confirmed, notify user confirming like</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that like was not confirmed</li> </ul>
Non-functional requirement	<ul style="list-style-type: none"> <li>• Like of project showcase must be confirmed within 5 seconds</li> <li>• User must select the like project showcase option on view to confirm action</li> </ul>
Priority	Low

### Create Project Showcase Draft

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have used the workspace in the listing</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Title</li> <li>• Relevant project files</li> <li>• Description</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Project showcase draft created</li> <li>• Project showcase filled in with user input fields</li> <li>• Project showcase missing user input fields where empty</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase draft not created</li> <li>• Project showcase completely empty</li> <li>• Project showcase missing user input fields where user submitted parameters</li> </ul>
Failure response	<ul style="list-style-type: none"> <li>- If confirmed, notify user confirming creation</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that showcase was not created</li> </ul>
Non-functional requirement	Creation of project showcase draft must be confirmed within 5 seconds
Priority	High

### Edit Drafted Project Showcase

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have used the workspace in the listing</li> </ul>
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	<ul style="list-style-type: none"> <li>• User must have a drafted project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Title</li> <li>• Addition or removal of project files</li> <li>• Description</li> <li>• Confirmation via user input</li> </ul>
Success criteria	Project showcase draft reflects new user input
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase draft removes unedited fields</li> <li>• Project showcase draft is not identical to user edit</li> </ul>
Failure response	If unconfirmed, retry once. On repeated failure, notify user that their edit was not confirmed
Non-functional requirement	<ul style="list-style-type: none"> <li>• Edit of project showcase draft must be confirmed within 5 seconds</li> <li>• User must confirm action from options of yes or no</li> <li>• Selection of no returns the user to their previous view</li> </ul>
Priority	Medium

Remove Drafted Project Showcase	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have used the workspace in the listing</li> <li>• User must have a drafted project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via user input
Success criteria	Project showcase draft is removed from data
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase draft is viewable</li> <li>• Project showcase draft is published</li> <li>• Project showcase draft remains in database</li> </ul>
Failure response	<ul style="list-style-type: none"> <li>- If confirmed, notify user confirming removal</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that removal was not confirmed</li> </ul>
Non-functional requirement	<ul style="list-style-type: none"> <li>• Removal of drafted project showcase must be confirmed within 5</li> </ul>

	seconds <ul style="list-style-type: none"> <li>User must confirm action from options of yes or no             <ul style="list-style-type: none"> <li>Selection of no returns the user to their previous view</li> </ul> </li> </ul>
Priority	Low

### Preview Drafted Project Showcase

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must be on project showcase view of a listing</li> <li>User must have used the workspace in the listing</li> <li>User must have a drafted project showcase</li> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Title</li> <li>Project file(s)</li> <li>Description</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Project showcase is viewed as published view</li> <li>Project showcase is only viewable by owner of draft</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>Project showcase is published</li> <li>Project showcase is viewable by any user</li> </ul>
Failure response	Display error message asking user to refresh view
Non-functional requirement	Preview of project showcase must be confirmed within 3 seconds
Priority	Low

### Publish Drafted Project Showcase

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>User must be on Project Showcase view of a listing</li> <li>User must have used the workspace in the listing</li> <li>User must have a drafted project showcase</li> <li>User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>Confirmation via user input</li> <li>Title</li> </ul>

	<ul style="list-style-type: none"> <li>• Project file(s)</li> <li>• Description</li> </ul>
Success criteria	Project showcase is viewable by all users
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase is hidden from view</li> <li>• Project showcase is not identical to drafted showcase created by owner of draft</li> <li>• Project showcase does not display attached files</li> </ul>
Failure response	<ul style="list-style-type: none"> <li>- If confirmed, notify user confirming publication</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that publication was not confirmed</li> </ul>
Non-functional requirement	<ul style="list-style-type: none"> <li>• Publication of project showcase must be confirmed within 5 seconds</li> <li>• User must confirm publication of project showcase from options of yes or no <ul style="list-style-type: none"> <li>○ Selection of no returns the user to their previous view</li> </ul> </li> </ul>
Priority	High

Edit Published Project Showcase	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have used the workspace in the listing</li> <li>• User must have published project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via user input: <ul style="list-style-type: none"> <li>- Title</li> <li>- Addition or removal of project files</li> <li>- Description</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Project showcase is viewable by all users</li> <li>• Project showcase reflects edited fields</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase is hidden from public view</li> <li>• Project showcase draft removes unedited fields</li> <li>• Project showcase draft is not identical to user edit</li> <li>• Project showcase duplicate is created</li> </ul>
Failure response	If unconfirmed, retry once. On repeated failure, notify user that their edit was not confirmed



Non-functional requirement	Posting of new comment must be confirmed within 5 seconds
Priority	Medium

### Remove Published Project Showcase

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have used the workspace in the listing</li> <li>• User must have published project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via user input
Success criteria	Project showcase is hidden from public view
Failure criteria	Project showcase is viewable
Failure response	<ul style="list-style-type: none"> <li>- If confirmed, notify user confirming project showcase removal from public view</li> <li>- If unconfirmed, retry once. On repeated failure, notify user that removal was not confirmed</li> </ul>
Non-functional requirement	Removal of project showcase must be confirmed within 5 seconds
Priority	Medium

### Reorder Attached Files in Project Showcase

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have used the workspace in the listing</li> <li>• User must have a drafted or published project showcase</li> <li>• User must have multiple (2+) files attached to project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User input confirming selection of file reordering</li> <li>• User input selecting one file</li> <li>• User input confirming new placement of selected file in file list</li> </ul>
Success criteria	Project showcase reflects new order of files
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase removes a file</li> </ul>

	<ul style="list-style-type: none"> <li>• Project showcase duplicates a file</li> <li>• Project showcase does not reorder files</li> <li>• Project showcase order does not reflect user input</li> </ul>
Failure response	If unconfirmed, retry once. On repeated failure, notify user that their edit was not confirmed
Non-functional requirement	Reordering of project showcase files must be confirmed within 3 seconds
Priority	Low

### Share Project Showcase Link

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> </ul>
Acceptance	All users
Requirement input	Confirmation via user input
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Project showcase link is copied to clipboard</li> <li>• Message box displaying project showcase link</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase link is not copied to clipboard</li> <li>• Project showcase link copied is not identical to selected project showcase</li> </ul>
Failure Response	Prompt user to try again
Non-functional requirement	Share link is generated within 1 second
Priority	Medium

### Post Project Showcase Comment

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on project showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• Comment text to be published</li> </ul>

Success criteria	Comment is viewable to all
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Comment does not reflect user comment text input</li> <li>• Comment is not viewable</li> <li>• Comment does not have correct timestamp</li> </ul>
Failure response	- If confirmed, notify user and host confirming project showcase removal from public view - If unconfirmed, retry once. On repeated failure, notify user and host that removal was not confirmed
Non-functional requirement	Posting of project showcase comment must be confirmed within 5 seconds
Priority	Low

### Edit Project Showcase Comment

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must have posted a comment</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• Comment text to replace current comment</li> </ul>
Success criteria	Comment is viewable to all and reflect new comment text
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Comment has not changed</li> <li>• Comment timestamp has not changed</li> </ul>
Failure response	- If confirmed, notify user confirming project showcase comment edit - If unconfirmed, retry once. On repeated failure, notify user that comment editing was not confirmed
Non-functional requirement	Posting of new comment must be confirmed within 5 seconds
Priority	Low

### Remove Project Showcase Comment

Precondition	<b>All of the following conditions must be fulfilled:</b>
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	<ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must have posted a comment</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• Comment must be made by user</li> </ul>
Success criteria	Comment is hidden from view
Failure criteria	Comment is viewable
Failure response	<p>- If confirmed, notify user confirming project showcase comment removal - from public view</p> <p>If unconfirmed, retry once. On repeated failure, notify user that removal was not confirmed</p>
Non-functional requirement	Removal of project showcase comment must be confirmed within 5 seconds
Priority	Low

### Vote on Project Showcase Comment

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must have selected a comment</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• User selection of upvote or downvote</li> </ul>
Success criteria	Comment vote tally increases or decreases
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Vote request is not sent to the database</li> <li>• Vote confirmation is not sent to the user</li> </ul>
Failure response	<p>- If confirmed, notify user confirming project showcase vote tallied</p> <p>- If unconfirmed, retry once. On repeated failure, notify user that their vote was not confirmed</p>
Non-functional requirement	Vote of project showcase comment must be confirmed within 5 seconds

Priority	Low
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Report Project Showcase Comment	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must have selected a comment</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• Reason for report</li> </ul>
Success criteria	Report is sent to database
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Report request is not sent to the database</li> <li>• Report confirmation is not sent to the user</li> </ul>
Failure response	- If confirmed, notify user confirming project showcase report - If unconfirmed, retry once. On repeated failure, notify user that report was not confirmed
Non-functional requirement	Report of project showcase comment must be confirmed within 5 seconds
Priority	Low

Report Project Showcase	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• Reason for report</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Report request is sent to the database</li> <li>• Report confirmation is sent to the user</li> </ul>
Failure criteria	N/A

Failure response	If confirmed, notify user confirming project showcase comment report If unconfirmed, retry once. On repeated failure, notify user that report was not confirmed
Non-functional requirement	Report of project showcase must be confirmed within 5 seconds
Priority	Medium

Unlink Project From Project Showcase	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on Project Showcase view of a listing</li> <li>• User must have selected a project showcase</li> <li>• User must be logged in</li> </ul>
Acceptance	Host
Requirement input	Confirmation via user input
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Project showcase is removed from listing's project showcase view</li> <li>• Project showcase user is notified of removal</li> <li>• Listing owner is notified of removal</li> <li>• Project showcase is removed from public view and set to draft</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Project showcase is not removed from listing's project showcase view</li> <li>• Project showcase user is not notified of removal</li> <li>• Listing owner is not notified of removal</li> <li>• Project showcase is viewable by all users</li> </ul>
Failure Response	- If confirmed, notify user and host confirming project showcase removal from public view - If unconfirmed, retry once. On repeated failure, notify host that removal was not confirmed
Non-functional requirement	Unlinking from the project showcase must be confirmed within 5 seconds.
Priority	High

## Collaborative System

### Business Rules:

- The following input boxes must meet these requirements:
  - Name - 70 characters
  - Profile Picture (optional) - 1 image
  - Contact Information - maximum of 1000 characters
  - Expertise Tags (optional) - maximum of 20 tags, each tag having a maximum of 100 characters
  - Description - maximum of 10000 characters
  - Uploaded Files - , minimum of 1 image, maximum of 10 images
  - Availability (optional) - maximum of 1000 characters
- Collaborator contact information and description input boxes will support markdown text.

### Requirements:

View Collaborator Profile	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on collaborator view</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via input
Success criteria	<b>All of the following conditions must be fulfilled:</b> Can view public profiles which includes a collaborator's: <ol style="list-style-type: none"> <li>1. name</li> <li>2. Profile picture</li> <li>3. Contact information</li> <li>4. Expertise tags</li> <li>5. Description</li> <li>6. Uploaded files</li> <li>7. Availability.</li> </ol>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Contents of a public collaborator's profile are not viewable.</li> <li>• Requesting a user's profile data failed.</li> </ul>
Failure response	Display error message and prompt user to refresh view or try again later.
Non-functional requirement	Collaborator profile must be displayed within 5 seconds.
Priority	Low

### Edit Collaborator Profile

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on collaborator view</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> Confirmation via user input: <ol style="list-style-type: none"> <li>1. Name</li> <li>2. Contact information</li> <li>3. Description</li> <li>4. Uploaded files</li> </ol> <b>The following conditions are not required:</b> <ul style="list-style-type: none"> <li>• A profile picture</li> <li>• Expertise tags</li> <li>• Availability</li> </ul>
Success criteria	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Collaborator profile is viewable by all users</li> <li>• Collaborator profile reflects edited fields</li> </ul>
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Collaborator profile is hidden from public view</li> <li>• Collaborator profile is not identical to user edit</li> <li>• Collaborator profile duplicate is created</li> </ul>
Failure response	Display error message and prompt user to refresh view or try again later.
Non-functional requirement	Collaborator profile is created within 5 seconds
Priority	Low

<b>Remove Collaborator Profile</b>	
Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on collaborator view</li> <li>• User must have a published collaborator profile</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via input
Success criteria	All information of the requested user's collaborator profile is cleared and the profile is hidden from public view.
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Collaborator profile is still in public view.</li> <li>• Information on a collaborator's profile is not cleared.</li> <li>• Request to remove profile failed.</li> </ul>



Failure response	Display error message and prompt user to refresh view or try again later.
Non-functional requirement	Collaborator profile is removed within 5 seconds
Priority	Low

### Change Collaborator Profile Visibility

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on collaborator view</li> <li>• User must have a published collaborator profile</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• Confirmation via user input</li> <li>• User selection of public or private</li> </ul>
Success criteria	Collaborator profile visibility is changed to user selected visibility
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Collaborator profile visibility remains static</li> <li>• Collaborator profile visibility is visible despite indicating private</li> <li>• Collaborator profile visibility is hidden despite indicating public</li> </ul>
Failure response	Display error message and prompt user to refresh view or try again later.
Non-functional requirement	Collaborator profile visibility is changed within 5 seconds
Priority	Low

### Upvote Collaborator Profile

Precondition	<b>All of the following conditions must be fulfilled:</b> <ul style="list-style-type: none"> <li>• User must be on collaborator view</li> <li>• User must have selected a collaborator profile</li> <li>• The selected collaborator profile must not be the user's</li> <li>• User must be logged in</li> </ul>
Acceptance	Authenticated users
Requirement input	Confirmation via user input of upvote
Success criteria	Upvote increments upvote counter and is saved to the data store.
Failure criteria	<b>Any one of the following conditions occurring constitutes failure:</b> <ul style="list-style-type: none"> <li>• Collaborator profile vote fails to increment</li> <li>• Collaborator profile vote increments more than once</li> </ul>

	User's collaborator profile upvote is not saved
Failure response	Revoke the user's upvote in the data store and display an error message.
Non-functional requirement	Collaborator profile upvote is registered within 5 seconds
Priority	Low

## **Appendix**

### Priority

Priority	Description
Critical	The requirement is critical for the project. Without this requirement to be fulfilled, the project can't proceed.
High	The requirement is a high priority in the project's success. Other features would rely on this requirement. The project could still be implemented in a minimum viable version.
Medium	The requirement is a medium priority in the project's success as it provides more value. The project could still be implemented in a minimum viable version.
Low	The requirement is a low priority. It's nice to have. The project could be implemented without depending on it.

## **References**

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