BUSINESS REQUIREMENTS DOCUMENT¹

Hubba

Version 2.3

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Class: CECS 491-04 Date: October 05, 2022

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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

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.
User	Anyone who is using the service.

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.

Functional Requirements

The complete application shall provide the following functionality.

The following syntax denotes changes in criteria conditions:

- 1. Numbered list, when all the conditions need to be met
- Hyphenated list, when any one of the conditions need to be met

Logging System (Project Wide System)

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

Database Logging	
Precondition	N/A
Acceptance	All users, System
Requirement input	All database access events
Success criteria	Log displays database access request event Log displays data was successfully stored in the database
Failure criteria	- Event was never logged - Event was incorrectly logged
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
Success criteria	Log displays user action event
Failure criteria	- Log doesn't display user action event - Log displays incorrect user action event
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	- Log doesn't display logged event - Log displays incorrect event
Failure response	N/A
Non-functional requirement	Logged events complete within 3 seconds
Priority	Medium

Error Handling (Project Wide System)

- 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.

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

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	- File type is invalid - File size is invalid
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

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: - Listing and booking preview - Project showcase
Failure criteria	 Uploaded files do not display Files displayed are not identical to files uploaded Files were not uploaded in their entirety
Failure response	Determine whether any files were sent to the database: - If so, delete all files associated with the upload, display an appropriate message, and prompt user to refresh page - If not, retry upload once. On repeated failure, display an appropriate message and prompt user to refresh page
Non-functional requirement	Individual files are stored in database within 20 seconds of upload from user
Priority	High

Cancel a File Upload	
Precondition	File(s) upload in process
Acceptance	Authenticated users
Requirement input	User input confirming cancellation

Success criteria	File upload is canceled Any currently uploaded files are deleted from the database
Failure criteria	- Files remain in the database - User files continue upload
Failure response	Determine whether any files were sent to the database: - If so, delete all files associated with the upload, display an appropriate message, and prompt user to refresh page
Non-functional requirement	- File cancellation request must be confirmed within 5 seconds - Files must be deleted from database within 20 seconds of request confirmation
Priority	Medium

Account System

- A valid email is in format username@domain
- Email verification process expires after 24 hours.
- A valid password must satisfy: minimum 8 characters in length; include characters, numbers, and legal special characters.
- A unique username includes characters and numbers, no special characters allowed, maximum 10 characters in length.
- 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:
 - o by booking date
 - by status
 - by owner of the listing
- Filter metrics for Rental History:
 - by keyword
 - by booking number
 - o by booking date
 - o by username of renter
 - by owner of the listing
- Project Showcase can be sorted:
 - by listing
 - by category
 - o by username of project showcase
 - o by most recently viewed

- Filter metrics for Project Showcase:
 - o by keyword
 - o by date viewed

Registration (Account Creation)	
Precondition	User must be on Registration/Login page User is not logged in User selected "Create an Account"
Acceptance	All users
Requirement input	 A unique username First name Last name A valid email A valid password User input confirming action
Success criteria	 A new user account is created User data is stored in database Verification email is sent to the user's email
Failure criteria	- New account isn't created - New account does not have identical login credentials to provided username and password - Verification email is not sent to the user's email
Failure response	Prompt the user to refresh the page
Non-functional requirement	Update database in less than 3 seconds
Priority	Critical

Email Verification for a New Account	
Precondition	User completed Registration
Acceptance	Authenticated users
Requirement input	A valid email User responses to verification email
Success criteria	User can login with username/email and password

Failure criteria	- User doesn't receive a verification email - User can't login - User successfully logged in but can't view their account page
Failure response	Prompt the user to refresh the page
Non-functional requirement	Database query results within 2 seconds
Priority	Critical

Email Verification for an Existing Account	
Precondition	- User sent a Reset password request - User chooses to update email in Account page
Acceptance	Authenticated users
Requirement input	User responses to a verification email.
Success criteria	- If updating new email, new email is accepted and displayed on Account page - if resetting password, user will be led to Reset password page
Failure criteria	User doesn't receive a verification email
Failure response	Prompt the user to refresh the page
Non-functional requirement	Database query results within 2 seconds
Priority	Critical

Log in	
Precondition	User must be on Registration/Login page
Acceptance	All users
Requirement input	A username or email A corresponding pre-registered password associated with the username/email User input confirming action
Success criteria	Username, email and password match stored data User can view and access their account page
Failure criteria	- User can't log in at the moment - User successfully logged in but can't view their account page - User's email has not yet been verified

Failure response	- If email needs verifying, lead user to Email Verification - Prompt the user to refresh the page
Non-functional requirement	Database query results within 2 seconds
Priority	Critical

Log out	
Precondition	N/A
Acceptance	Authenticated users
Requirement input	User input confirming logout
Success criteria	User can no longer view and access their account page If user was on Account page when logging out, user will be led back to Home page
Failure criteria	- User is still logged in - User can view and access unauthorized pages
Failure response	Prompt the user to refresh the page
Non-functional requirement	User's activities will no longer be logged
Priority	High

Reset Password	
Precondition	User completed Email Verification
Acceptance	Authenticated users
Requirement input	A new valid password can be set
Success criteria	User can log in with the newly set password User data is updated in the database
Failure criteria	- Password can't be reset at the moment - User can log in with previous passwords - Password stored is not identical to input password
Failure response	Prompt the user to refresh the page
Non-functional requirement	Database query results within 2 seconds
Priority	High

Settings (Account Modification)	
Precondition	User must be on Account page User selects "Settings"
Acceptance	Authenticated users
Requirement input	User can change/update their credential/contact information such as: First Name Last Name Email (new email will need to be verified again) Password (confirm by enter the old password) User input confirming action
Success criteria	Account page reflects the change(s) User data is updated in database
Failure criteria	- Account can't be updated at the moment - Account does not reflect the change(s)
Failure response	Prompt the user to refresh the page
Non-functional requirement	Database query results within 2 seconds
Priority	Medium

Notification Settings	
Precondition	User must be on Account page User must choose "Notification settings"
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 page
Non-functional requirement	System responses within 2 seconds
Priority	Medium

Rental History View	
Precondition	User must be on Account page
Acceptance	Authenticated users
Requirement input	User selects "View History"
Success criteria	If user has no booking, view is empty Otherwise, rental history is shown in chronicle order of bookings
Failure criteria	User has a rental history but can't see any of them
Failure response	Prompt the user to refresh the page and try again
Non-functional requirement	Database query results within 2 seconds
Priority	High

Search in Rental History	
Precondition	User must be on Account page User must select "View History"
Acceptance	Authenticated users
Requirement input	User input confirming action on Rental History page 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 page
Non-functional requirement	Database query results within 2 seconds
Priority	Low

Rental Cancellation	
Precondition	User must be on Rental history page
Acceptance	Authenticated users
Requirement input	User choose to cancel a booking User input confirming action for cancelation

Success criteria	 There is a confirmation box of cancellation the selected booking There is communication to the host of the cancellation A confirmation email is sent to the user with cancellation information including date, location, and time frame Booking is updated in database
Failure criteria	- Confirmation of booking cancellation is not sent to user - Confirmation of booking cancellation is not sent to host - Removal of booking in database is incomplete - Message on application page does not indicate cancellation
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	Update database in less than 3 seconds
Priority	Critical

Project Showcase View	
Precondition	User must be on Account page
Acceptance	Authenticated users
Requirement input	User input confirming action on Account page to view project showcase
Success criteria	If user has no project history, view is empty Otherwise, project showcase is shown in chronological order of date created
Failure criteria	User can't see their published project showcase
Failure response	Display error message asking user to refresh page
Non-functional requirement	Database query results within 2 seconds
Priority	Medium

Search in Project Showcase View	
Precondition	User must be on Account page User must choose to view Project Showcase
Acceptance	Authenticated users
Requirement input	User input confirming action on Project Showcase View to search User can search an existing booking by sorting: by listing, by category

	- User can search an existing booking by filter: by keyword
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 page
Non-functional requirement	Database query results within 2 seconds
Priority	Low

Edit Project Showcase	
Precondition	User must be on Account page User must choose to view Project Showcase
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	- Project showcase can't be updated - Project Showcase page isn't displayed
Failure response	Display error message asking user to refresh page
Non-functional requirement	Response to user interaction results within 1 second
Priority	Medium

Scheduling System

- 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.

Change Monthly Calendar View	
Precondition	User must be on calendar page
Acceptance	All users
Requirement input	Confirmation via user input User decision of next month or previous month
Success criteria	 Month in calendar view is the user's intended month, determined by user input New month in calendar view is populated by available time frames for potential booking
Failure criteria	- Month does not change to chosen month - Calendar view does not reflect real-life calendar month - Calendar format shifts or changes calendar display - Selected time frames are shown on incorrect months
Failure response	Display error message asking user to refresh page
Non-functional requirement	Changes month within 2 seconds
Priority	Low

Filter Calendar View	
Precondition	User must be on calendar page
Acceptance	All users
Requirement input	1. Start date 2. End date 3. Confirmation via user input - Optionally static start time - Optionally static end time - Optionally start time for each specific day - Optionally end time for each specific day - Optionally type of workspace
Success criteria	 Filtered time frames are highlighted Time frame is exactly as indicated by user input Only available time frames are listed
Failure criteria	- Time frames for bookings which are unavailable are shown - Time frames outside of the filtered interval are shown
Failure response	Display error message asking user to refresh page

Non-functional requirement	Filter calendar within 3 seconds
Priority	Low

Unfilter Calendar View	
Precondition	User must be on calendar page Calendar must be filtered
Acceptance	All users
Requirement input	User input confirming action
Success criteria	No time frames are highlighted
Failure condition	- All available listings are not shown - Calendar view is not restored to default view
Failure response	Display error message asking user to refresh page
Non-functional requirement	Filter calendar within 1 second
Priority	Low

Select Listing Time Frame	
Precondition	User must be on calendar page
Acceptance	All users
Requirement input	1. User input confirming chosen day 2. Indicate single day or multi-day booking 3. Input start time 4. Input end time - Optionally input each day's specific start time - Optionally input each day's specific end time
Success criteria	 Selected time frames are highlighted in calendar view Window in sidebar appears showing selected dates with start and end times Price for selected time frames are shown
Failure criteria	- Selected time frames are not highlighted - Highlighted sections do not reflect selected time frame exactly - Calendar view shifts to a different month outside of selected time frame - Highlighted sections do not persist while remaining on page - Price is not accurate as based on Host's price per hour
Failure response	Display error message asking user to refresh page

Non-functional requirement	Selection of a time frame must be confirmed within 2 seconds
Priority	High

Alter Selected Time Frame	
Precondition	User must be on calendar page User must have selected time frame
Acceptance	All users
Requirement input	1. There exists a selected time frame in calendar 2. Indicate single day or multi-day booking 3. Input start time 4. Input end time - Optionally input each day's specific start time - Optionally input each day's specific end time
Success criteria	 Selected time frames are highlighted in calendar view Window in sidebar appears showing selected dates with start and end times Previous time frames which are no longer selected are no longer highlighted Price for newly selected time frames are shown
Failure criteria	- Any part of the calendar is still selected - Any part of the calendar is still highlighted - Calendar view changes to a different month - Price is not accurate as based on Host's price per hour
Failure response	Display error message asking user to refresh page
Non-functional requirement	Selection of a time frame must be confirmed within 2 seconds
Priority	High

Deselect Selected Time Frame	
Precondition	User must be on calendar page User must have selected time frame
Acceptance	All users
Requirement input	User action confirming confirmation of deselection
Success criteria	Calendar has returned to a completely unhighlighted view There is no longer a sidebar window indicating selected time frames
Failure criteria	- Default calendar view is not shown

	- Any portion of the calendar is still highlighted
Failure response	Display error message asking user to refresh page
Non-functional requirement	Deselection of a time frame must be confirmed within 2 seconds.
Priority	Medium

Confirmation of Listing Time Frame	
Precondition	User must be on calendar page User must have selected time frame User must not be owner of listing
Acceptance	Authenticated users
Requirement input	Selected time frame for a listing User confirmation input
Success criteria	 There is a confirmation box of booking the selected time frame Notify host of the selection Notify user of the selection with listing information including date, location, price, and time frame The listing's availability during the selected time frame is indicated as unavailable Booking information is stored in database
Failure criteria	- Confirmation of booking is not sent to user - Confirmation of booking is not sent to host - Confirmation box of booking is not displayed
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	Confirmation of a time frame must be confirmed within 5 seconds
Priority	Critical

Cancellation of Booked Time Frame	
Precondition	User must be on calendar page User must have a booking
Acceptance	Authenticated users

Requirement input	Existing booking in user account Selection of the booked time frame Reason for cancellation
Success criteria	 There is a confirmation box of cancellation the selected time frame There is communication to the host of the cancellation The listing's availability during the selected time frame is indicated as available A confirmation email is sent to the user with cancellation information including date, location, and time frame
Failure criteria	- Confirmation of booking cancellation is not sent to user - Confirmation of booking cancellation is not sent to host - Removal of booking in database is incomplete - Message on application page does not indicate cancellation
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	Cancellation of a time frame must be confirmed within 5 seconds
Priority	Critical

Discovery System

- A list of multiple random listings or projects curated for the user will be initially be displayed on arrival to the discovery system page, 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

Search Bar Input	
Precondition	User must be on Discovery page
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 3 seconds
Priority	High

Search	
Precondition	User must be on Discovery page
Acceptance	All users
Requirement input	User input confirming action A valid search entry
Success criteria	- A list of results appear - Results that are related to the search query are returned - 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 3 seconds
Priority	High

Filter Results	
Precondition	User must be on Discovery page
Acceptance	All users
Requirement input	Selected filter options Valid search entry
Success criteria	- A list of filtered results appear - 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 3 seconds
Priority	Low

Unfilter Results	
Precondition	User must be on Discovery page A list of filters are applied to the resulting search query
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 3 seconds
Priority	Low

Open Result	
Precondition	User must be on Discovery page A list of results from a users (filtered) search query
Acceptance	All users
Requirement input	Selection of a singular result
Success criteria	Redirect a user to a new page relating to the selected result
Failure criteria	- Failed to fetch database data - Page is no longer accessible
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 page request is blocked: Display error message of page unavailability
Non-functional requirement	Database query with results within 3 seconds New page opens within 3 seconds
Priority	High

Notification System

- Authenticated users can enable notifications based on selected preferences.
 - Default setting will have only on site and email notifications
 - o Additional selections include text notifications
 - o 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.
 - o Notification Types: Scheduling, Workspace, Project Showcase, Other

Display On-Site Notification	
Precondition	N/A
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	 Notification pops up and slowly fades away after a duration. Notification gets sent to Notification Menu.
Failure condition	Notification Banner doesn't disappear after appearing on Notification List Menu Notification repeats
Failure Response	N/A
Non-functional requirement	Appear within 2 seconds
Priority	High

Select Notification Content Type	
Precondition	User has navigated to Notification Settings on Account page
Acceptance	Authenticated users
Requirement input	Toggle setting per notification type Confirmation of changed settings
Success criteria	Saved changes remain after loading another page Notification based on type chosen appear
Failure condition	- Changed settings reset or retain previous form after loading new page - Notification based on type not chosen appear - Notification based on type chosen do not appear
Failure Response	None
Non-functional requirement	Saved changes take into effect after 2 seconds
Priority	Medium

Select Notification Delivery Method Type	
Precondition	User has navigated to Notification Settings on Account page
Acceptance	Authenticated users
Requirement input	Toggle setting per notification method If Text Message toggle active, enter phone number
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	User has changed setting on their Profile
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	Users receive email after changes in profile have been saved Changes specifically to password will state as such
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	N/A
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	Notification Banner pops up and disappears after a set duration.

Failure condition	- Banner does not disappear after set duration - Banner does not appear at all
Failure Response	N/A
Non-functional requirement	Notification Banner disappears after 8 seconds of being displayed
Priority	Medium

Expand Notification List	
Precondition	N/A
Acceptance	Authenticated users
Requirement input	User input to Expand Menu
Success criteria	 Menu opens Loads categories and notifications Notifications are in order from most recent to oldest Can scroll through list
Failure condition	- List does not load - No Notifications Load
Failure Response	Error message prescribing to reload webpage
Non-functional requirement	Be able to load all features and notifications within 3 seconds
Priority	High

Display Group Notifications	
Precondition	A notification has arrive within 1 minute of initial notification starting queue
Acceptance	Authenticated users
Requirement input	N/A
Success criteria	Group notification successfully displays how many notifications are contained Group notification reduces amount of notifications pinged
Failure condition	- Group notification goes off but still displays each individual one - Several individual notifications go off
Failure Response	N/A

Non-functional requirement	Notification be displayed within 3 seconds
Priority	Low

Expand Group Notifications	
Precondition	User is on Notification Menu
Acceptance	Authenticated users
Requirement input	User input on a Group Notification
Success criteria	Notification clearly identifies how many notifications are contained within Clicking grouped notification expands into a list of each individual notification
Failure condition	- Group notification does not show up on Notification List - Notifications are not group as they should be - Group notification does not expand
Failure Response	N/A
Non-functional requirement	Expansion in 3 seconds
Priority	Low

Auto Deletion at Capacity	
Precondition	User is in Notification Menu
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	- Notification amount exceed capacity - Auto Deletion occurs pre-maturely
Failure Response	N/A
Non-functional requirement	Auto Deletion occurs 3 seconds after new notification comes in
Priority	Low

Clear All Notifications	
Precondition	User is on Notification Menu
Acceptance	Authenticated users
Requirement input	User input for Clear All
Success criteria	Popup occurs to confirm clearing all notifications Clearing all notification completely erases all notifications in the Notification Menu
Failure condition	- Fail to completely dismiss all notifications - After reloading page, notifications persist
Failure Response	N/A
Non-functional requirement	Dismissal of all notifications within 4 seconds
Priority	Medium

Dismissal of Individual Notification	
Precondition	User is on Notification Menu
Acceptance	Authenticated users
Requirement input	User input on Notification Banner
Success criteria	Option to clear appears after hovering notification Clicking "clear" dismisses individual notification
Failure condition	Notification does not clear Notification persist after reloading page
Failure Response	N/A
Non-functional requirement	Dismissed within 2 seconds
Priority	High

Filtering Notifications in List Menu	
Precondition	User must be on List Menu
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	- Selecting Filter does not filter notifications - Deselecting Filters do not return List Menu to original state
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
 - o Comments are limited to a certain amount of characters, default is 250

Listing Initialization (Does not have an account)	
Precondition	User is on the home page.
Acceptance	Unauthenticated users
Requirement input	User input confirming creation of listing User is prompted to login
Success criteria	Page switches to the Login page
Failure condition	- Page is unable to load - Issue with login
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	- User is on the home page or Listings page
Acceptance	Authenticated users
Requirement input	User input confirming creation of listing User title input
Success criteria	Page switches to the Listing/Listing Draft Editing page
Failure condition	- Page is unable to load - Issue with creating a new Listing
Failure Response	Display error message and prompt user to try again
Non-functional requirement	System responses within 3 seconds
Priority	Critical

"My Listings" page	
Precondition	N/A
Acceptance	Authenticated users
Requirement input	User interaction
Success criteria	If user has no listing, view is empty Otherwise, a list of published and listing drafts will be displayed
Failure condition	- Page is unable to load - Listings are unable to be fetched
Failure Response	-Prompt the user to try again later
Non-functional requirement	System responses within 3 seconds
Priority	High

Edit a Listing/Listing Draft	
Precondition	User is on home page or "My Listings" page with at least one draft or listing
Acceptance	Authenticated users
Requirement input	User input confirming action to edit If listing is already published, required sections are:

	1. Listing Title 2. Description 3. Address/Location 4. Image and/or Video file(s) 5. Price 6. Availability
Success criteria	Listing/Listing Draft is updated in database Listing/Listing Draft is updated in User's "My Listings" page
Failure condition	- Listing/Listing Draft info unable to load - Listing/Lighting Draft does not display updated fields
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	User is on editing a Listing/Listing Draft
Acceptance	Authenticated users
Requirement input	User input on editing User input for confirmation of changes
Success criteria	A listing is successfully created New listing is displayed on My Listings page
Failure condition	Listing Draft unable to be saved
Failure Response	Prompt the user to try again later
Non-functional requirement	Database updates within 3 seconds
Priority	Critical

Delete a Listing/Listing Draft	
Precondition	User is on "My Listings" page
Acceptance	Authenticated users
Requirement input	User input choosing specific listing or listing draft User input confirming deletion
Success criteria	Listing/Listing Draft is no longer shown to user

	Listing/Listing Draft is removed from database
Failure condition	- Listing/Listing Draft removal message not received by server - Listing/Listing Draft removal unsuccessful from database - Listing/Listing Draft still displays on "My Listings" page
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	User is on "My Listings" page
Acceptance	Authenticated users
Requirement input	1. User interaction to publish a listing draft 2. Required user text input sections: 1. Listing Title 2. Description 3. Address/Location 4. Image and/or Video file(s) 5. Price 6. Availability
Success criteria	 Listing Draft is published Listing Draft is updated to database Listing Draft is shown as Listing to user New Listing is saved as such and is viewable by other users
Failure condition	Listing/Listing Draft publish message not received by server Listing/Listing Draft publish unsuccessful from database
Failure Response	Display error message and prompt user to try again
Non-functional requirement	Database updates within 3 seconds
Priority	Critical

Listing Rating and Commenting	
Precondition	User has had previous booking with Listing they are trying to rate and/or comment on User has not left a review on Listing previously
Acceptance	Authenticated users
Requirement input	Star rating required - Commenting is optional
Success criteria	Rating appears to all users
Failure condition	- Rating submitted without meeting requirements - Rating unsuccessfully sent - Rating not viewable to all users
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	User has previously left a validated review on the Listing
Acceptance	Authenticated users
Requirement input	Star rating required - Commenting is optional
Success criteria	- Rating appears to all users
Failure condition	- Rating submitted without meeting requirements - Rating unsuccessfully sent - Rating not viewable to all users
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	User has previously left a validated review on the Listing
Acceptance	Authenticated users
Requirement input	User interaction with specific listing User input confirming deletion
Success criteria	- Review no longer shown to users - Review removed from database - Rating no longer counts towards average
Failure condition	- Rating deletion unsuccessfully sent - Rating change not viewable to all users
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

View Project Showcase	
Precondition	User must be on Project Showcase page of a listing
Acceptance	All users
Requirement input	Confirmation via user input
Success criteria	Showcase title, description, and attached files are viewable
Failure criteria	Showcase title, description, or attached files are unviewable
Failure response	- If confirmed, forward user to project showcase page - If unconfirmed, retry once. On repeated failure, notify user that view request was not confirmed
Non-functional requirement	Project showcase must be shown within 5 seconds

Priority High	
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Like Project Showcase	
Precondition	User must be on Project Showcase page of a listing User must have selected a Project Showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input
Success criteria	Project showcase like tally increases by one User data stores liked project showcase
Failure criteria	- Like is not reflected on project showcase - Like is not linked to user
Failure response	- If confirmed, notify user confirming like - If unconfirmed, retry once. On repeated failure, notify user that like was not confirmed
Non-functional requirement	Like of project showcase must be confirmed within 5 seconds
Priority	Low

Create Project Showcase Draft	
Precondition	User must be on Project Showcase page of a listing User must have used the workspace in the listing
Acceptance	Authenticated users
Requirement input	- Title - Relevant project files - Description
Success criteria	 Project showcase draft created Project showcase filled in with user input fields Project showcase missing user input fields where empty
Failure criteria	Project showcase draft not created Project showcase completely empty Project showcase missing user input fields where user submitted parameters
Failure response	If confirmed, notify user confirming creation If unconfirmed, retry once. On repeated failure, notify user that showcase was not created

Non-functional requirement	Creation of project showcase draft must be confirmed within 5 seconds
Priority	High

Edit Drafted Project Showcase	
Precondition	User must be on Project Showcase page of a listing User must have used the workspace in the listing User must have a drafted project showcase
Acceptance	Authenticated users
Requirement input	- Title - Addition or removal of project files - Description - Confirmation via user input
Success criteria	Project showcase draft reflects new user input
Failure criteria	- Project showcase draft removes unedited fields - Project showcase draft is not identical to user edit
Failure response	If unconfirmed, retry once. On repeated failure, notify user that their edit was not confirmed
Non-functional requirement	Edit of project showcase draft must be confirmed within 5 seconds
Priority	Medium

Remove Drafted Project Showcase	
Precondition	 User must be on Project Showcase page of a listing User must have used the workspace in the listing User must have a drafted project showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input
Success criteria	Project showcase draft is removed from data
Failure criteria	- Project showcase draft is viewable - Project showcase draft is published - Project showcase draft remains in database
Failure response	- If confirmed, notify user confirming removal - If unconfirmed, retry once. On repeated failure, notify user that removal was not confirmed

Non-functional requirement	Removal of drafted project showcase must be confirmed within 5 seconds
Priority	Low

Preview Drafted Project Showcase	
Precondition	User must be on project showcase page of a listing User must have used the workspace in the listing User must have a drafted project showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input - Title - Project file(s) - Description
Success criteria	Project showcase is viewed as published page Project showcase is only viewable by owner of draft
Failure criteria	- Project showcase is published - Project showcase is viewable by any user
Failure response	Display error message asking user to refresh page
Non-functional requirement	Preview of project showcase must be confirmed within 3 seconds
Priority	Low

Publish Drafted Project Showcase	
Precondition	User must be on Project Showcase page of a listing User must have used the workspace in the listing User must have a drafted project showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input Drafted project showcase which has all of the following fields: - Title - Project file(s) - Description
Success criteria	Project showcase is viewable by all users
Failure criteria	Project showcase is hidden from view Project showcase is not identical to drafted showcase created by owner of draft Project showcase does not display attached files

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

Edit Published Project Showcase	
Precondition	 User must be on Project Showcase page of a listing User must have used the workspace in the listing User must have published project showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input: - Title - Addition or removal of project files - Description
Success criteria	Project showcase is viewable by all users Project showcase reflects edited fields
Failure criteria	- Project showcase is hidden from public view - Project showcase draft removes unedited fields - Project showcase draft is not identical to user edit - Project showcase duplicate is created
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	 User must be on Project Showcase page of a listing User must have used the workspace in the listing User must have published project showcase
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	- If confirmed, notify user confirming project showcase removal from public view - If unconfirmed, retry once. On repeated failure, notify user that removal was not confirmed
Non-functional requirement	Removal of project showcase must be confirmed within 5 seconds
Priority	Medium

Reorder Attached Files in Project Showcase	
Precondition	 User must be on Project Showcase page of a listing User must have used the workspace in the listing User must have a drafted or published project showcase User must have multiple (2+) files attached to project showcase
Acceptance	Authenticated users
Requirement input	User input confirming selection of file reordering User input selecting one file User input confirming new placement of selected file in file list
Success criteria	Project showcase reflects new order of files
Failure criteria	 - Project showcase removes a file - Project showcase duplicates a file - Project showcase does not reorder files - Project showcase order does not reflect user input
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	User must be on Project Showcase page of a listing User must have selected a project showcase
Acceptance	All users
Requirement input	Confirmation via user input
Success criteria	Project showcase link is copied to clipboard Message box displaying project showcase link
Failure criteria	- Project showcase link is not copied to clipboard

	- Project showcase link copied is not identical to selected project showcase
Failure Response	Prompt user to try again
Non-functional requirement	Share link is generated within 1 second
Priority	Medium

Post Project Showcase Comment	
Precondition	User must be on project showcase page of a listing User must have selected a project showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input Comment text to be published
Success criteria	Comment is viewable to all
Failure criteria	- Comment does not reflect user comment text input - Comment is not viewable - Comment does not have correct timestamp
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	User must be on Project Showcase page of a listing User must have selected a project showcase User must have posted a comment
Acceptance	Authenticated users
Requirement input	Confirmation via user input Comment text to replace current comment
Success criteria	Comment is viewable to all and reflect new comment text
Failure criteria	- Comment has not changed

	- Comment timestamp has not changed
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	User must be on Project Showcase page of a listing User must have selected a project showcase User must have posted a comment
Acceptance	Authenticated users
Requirement input	Confirmation via user input Comment must be made by user
Success criteria	Comment is hidden from view
Failure criteria	Comment is viewable
Failure response	- If confirmed, notify user confirming project showcase comment removal - from public view If unconfirmed, retry once. On repeated failure, notify user that removal was not confirmed
Non-functional requirement	Removal of project showcase comment must be confirmed within 5 seconds
Priority	Low

Vote on Project Showcase Comment	
Precondition	 User must be on Project Showcase page of a listing User must have selected a project showcase User must have selected a comment
Acceptance	Authenticated users
Requirement input	Confirmation via user input User selection of upvote or downvote
Success criteria	Comment vote tally increases or decreases

Failure criteria	- Vote request is not sent to the database - Vote confirmation is not sent to the user
Failure response	- If confirmed, notify user confirming project showcase vote tallied - If unconfirmed, retry once. On repeated failure, notify user that their vote was not confirmed
Non-functional requirement	Vote of project showcase comment must be confirmed within 5 seconds
Priority	Low

Report Project Showcase Comment	
Precondition	User must be on Project Showcase page of a listing User must have selected a project showcase User must have selected a comment
Acceptance	Authenticated users
Requirement input	Confirmation via user input Reason for report
Success criteria	Report is sent to database
Failure criteria	- Report request is not sent to the database - Report confirmation is not sent to the user
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	User must be on Project Showcase page of a listing User must have selected a project showcase
Acceptance	Authenticated users
Requirement input	Confirmation via user input Reason for report
Success criteria	Report request is sent to the database Report confirmation is sent to the user

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	User must be on Project Showcase page of a listing User must have selected a project showcase
Acceptance	Host
Requirement input	Confirmation via user input
Success criteria	 Project showcase is removed from listing's project showcase page Project showcase user is notified of removal Listing owner is notified of removal Project showcase is removed from public view and set to draft
Failure criteria	- Project showcase is not removed from listing's project showcase page - Project showcase user is not notified of removal - Listing owner is not notified of removal - Project showcase is viewable by all users
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

Non-functional Requirements²

- The application can support 100 users per hour and must have response time under 5 seconds running on Chrome browser, including content loading such as text, images via LTE connection.
- The system should be scalable to support 200 users at the same time while maintaining an optimal performance.

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² AltexSoft, 2020

<u>Appendix</u>

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.

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Approved Request for Proposal Document, version 1.4 by professor Vong, 10/01/2022

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