CEBU INSTITUTE OF TECHNOLOGY - UNIVERSITY

COLLEGE OF ENGINEERING AND ARCHITECTURE

Software Requirements Specifications

for

BoardHub

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1. Introduction

1.1. Purpose

BoardHub is an all-in-one app designed to streamline the process of finding and managing boarding properties. With its intuitive interface and powerful features, users can effortlessly add and list their properties, bookmark favorite listings, engage in discussions through comments, and easily categorize and sort properties for efficient browsing. The app also offers an image editor for enhancing property visuals and a comprehensive profile editing option. Additionally, users can connect with potential tenants through chat, receive timely notifications, and provide feedback on comments through the like/report feature.

1.2. Document Conventions

Terminology:

- Boarding House: Refers to a property or residence available for rent on a short-term or long-term basis.
- Property: Refers to any real estate, including apartments, houses, or rooms available for rent.
- User: Denotes an individual who uses the mobile app to search, book, or manage boarding house or property listings.
- Owner: Refers to an individual who owns or manages a boarding house or property and uses the app to list and manage their properties.
- Admin: Denotes an administrator or moderator with privileged access to manage app settings, user accounts, and content moderation.

Formatting Guidelines:

- Headings and Subheadings: Headings are used to divide the document into sections and subsections, providing a clear structure and hierarchy.
- Numbering: Sequential numbering is used for sections, subsections, and requirements to aid reference and navigation.
- Bold and Italics: Important terms or emphasis are indicated using bold or italics for clarity.
- Bullet Points: Bullet points are used for lists or itemized information.

1.3. Intended Audience & Reading Suggestions

BoardHub is a versatile application that caters to the boarding house properties of various individuals. This documentation is intended for anyone who needs to understand the basic architecture and specifications of BoardHub. System administrators can utilize this document to set up instances of BoardHub, while developers can reference it during implementation and integration with the system. Testers can use the documentation to grasp the functionality of different features and test them based on requirements and provided diagrams. Consultants, staff, and documentation writers can also utilize this resource to critique features, provide feedback, and gain insights into how the system responds to user actions, enabling them to create relevant tutorials and help materials.

1.4. Project Scope

The intended audience for BoardHub includes students, boarding house enthusiasts, and individuals seeking boarding house accommodations in the Philippines. The app is designed to be user-friendly and accessible for everyday people, ensuring a seamless experience for both tenants and landlords in navigating the diverse range of available boarding house properties throughout the country.

1.5. References

- Wiegers, K. The Software Requirements Specifications. Enfocus Solutions
- IEEE Std 830-1998

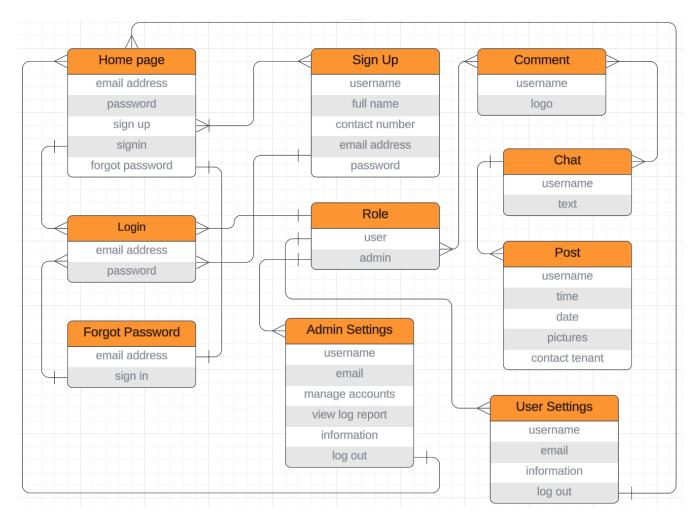
2. Overall Description

2.1. Product Perspective

The application is a mobile application and would be developed and deployed in an android operating system environment. The application to be developed is primarily for mobile users. The app could be installed on any mobile device running on the latest android operating system or later.

2.2. Product Features

- SIGNUP PAGE
- LOGIN PAGE
- FORGOT PASSWORD
- SIGN OUT
- NAVIGATION BAR
- DELETE ACCOUNT
- UPDATE PROFILE
- ADMIN CONTROL/ADMIN ACCOUNT
- MANAGE ACCOUNT
- BLOCKED USERS
- ADD BOARDING PROPERTY
- ADD PHOTOS
- PROPERTY DETAILS
- CHANGE LOCATION
- NOTIFICATIONS
- ADD TO FAVORITES
- BOOKMARK
- COMMENT SECTION
- SORTING / CATEGORIZE BOARDING PROPERTY
- IMAGE EDITOR
- ADD BOARDING HOUSE IMAGES
- VIEW MORE IMAGES
- ONBOARD PAGE
- MY POST PAGE
- CATEGORY
- SEE ALL
- DELETE POST
- EDIT POST
- COMMENT SECTION
- DELETE COMMENT
- LIKE COMMENT
- REPORT COMMENT
- COMMENT TIMESTAMP
- CHAT



Entity-Relationship Diagram

2.3. User Classes and Characteristics

The expected users of this system must have a general knowledge on the concept of boarding houses and its properties. The expected users are as follows:

Diverse User Base: BoardHub should cater to a diverse range of users, including students, boarding house enthusiasts, and individuals seeking accommodations, with varying levels of technological proficiency and familiarity with similar apps.

Everyday Users: BoardHub should be accessible and user-friendly for everyday people, ensuring that users with limited technical expertise can easily navigate the app, utilize its features, and interact with the boarding house properties and other users.

Tenant and Landlord Interactions: BoardHub should facilitate seamless interactions between tenants and landlords, allowing them to communicate, connect, and engage in activities such as adding properties, bookmarking, commenting, sorting, editing profiles, and engaging in chat-based

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communication.

Localized Audience: BoardHub should consider the user characteristics specific to the audience in the Philippines, including language preferences, cultural norms, and local market dynamics in the boarding house accommodations sector.

Mobile Users: BoardHub should cater to users who predominantly access the app on mobile devices, such as smartphones and tablets, ensuring a responsive and optimized user experience on these platforms.

2.4. Operating Environment

The BoardHub is designed to run on the following operating environment:

1. Operating System: Android (version 5.0 Lollipop or later)

2. Hardware Requirements:

Processor: ARM or x86 architecture

Memory: Minimum 2GB RAM

Storage: Sufficient free space for app installation and data storage

Display: Screen resolution compatible with Android devices

3. Software Requirements:

Flutter framework

Dart programming language

Flutter dependencies and plugins as specified in the project documentation

4. Network Environment:

Internet connection: The app requires a stable internet connection to access its features and retrieve real-time data.

5. Dependencies:

Firebase SDK: The app integrates with Firebase services for user authentication, real-time data synchronization, and push notifications.

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6. Constraints:

Android Compatibility: The app is compatible with Android devices running version 5.0 Lollipop or later.

Internet Connectivity: Users must have an active internet connection to access and use the app effectively.

2.5. Design & Implementation Constraints

1. Platform Compatibility:

• The app is developed for Android platforms, ensuring compatibility with the latest versions and supporting a wide range of devices.

2. Security:

• The app adheres to industry-standard security practices to protect user data, including secure authentication, encrypted communication, and secure storage of sensitive information.

3. Database Integration:

• The app integrates with a reliable and scalable database system to store and retrieve property listings, user information, and booking data efficiently.

4. Location Services:

• Utilize the device's location services to provide accurate search results based on the user's location.

5. User Interface:

• The app had an intuitive and user-friendly interface, following platform-specific design guidelines to ensure a seamless user experience.

6. Scalability:

• The app is designed to handle a large number of property listings and users, ensuring performance and responsiveness even with increasing data and user load.

7. Regulatory Compliance:

• It ensures compliance with applicable laws and regulations related to property renting, data privacy, and user protection.

8. Performance:

• The app is optimized for speed and responsiveness, minimizing loading times, and ensuring smooth navigation and interactions.

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2.6. User Documentation

User Guide for BoardHub Features:

1. Adding a Boarding Property:

- To add a boarding property, open the BoardHub app and navigate to the "Add Boarding Property" section.
- Fill in the required information, such as property details, location, amenities, and contact information.
- Upload relevant photos of the property to attract potential tenants.
- Submit the information, and your boarding property will be listed on BoardHub for others to view and inquire about.

2. Bookmarking:

- When you come across a boarding property that interests you, tap the "Bookmark" button to save it for future reference.
- To access your bookmarked properties, go to the "Bookmarks" section in the app.
- You can easily view and manage your bookmarked properties, making it convenient to revisit them later

3. Comment Section:

- Engage in discussions and provide feedback by utilizing the comment section.
- Find the comment section under each boarding property listing.
- Post your comments, ask questions, or share your experiences related to the property.
- Interact with other users by replying to their comments and fostering a vibrant community.

4. Sorting/Categorize Boarding Property:

- To sort or categorize boarding properties, go to the "Sorting/Categorization" option in the app's navigation menu.
- Choose from available sorting options like price, location, or type of boarding house property.
- Use filters and categories to narrow down your search based on specific criteria, such as property type or preferred location.

5. Image Editor:

- Enhance the visuals of your boarding property by utilizing the image editor feature.
- Open the image editor from the property listing or editing options.
- Edit and optimize property photos by adjusting brightness, cropping, applying filters, or adding captions.
- Save the edited images, and they will be updated in the property listing.

6. Like/Report Comment:

- Express your appreciation for helpful or informative comments by using the "Like" button.
- To report a comment that violates the community guidelines or contains inappropriate content, use the "Report" option.
- BoardHub's moderation team will review reported comments and take appropriate action.

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7. Edit Profile:

- Update your profile information by accessing the "Edit Profile" section.
- Modify personal details, such as name, profile picture, contact information, and description.
- Keep your profile up to date to present accurate information to potential landlords or tenants.

8. Chat/Connect Tenant:

- Utilize the chat feature to connect with potential tenants or landlords.
- Go to the "Chat" section to view your messages and start new conversations.
- Initiate a chat with another user by selecting their profile or property listing and tapping the "Chat" button.
- Engage in private conversations, discuss rental terms, negotiate, and finalize arrangements conveniently within the app.

9. Notifications:

- Stay informed about important updates, new messages, or activity related to your account through notifications.
- Access the notification center to view your notifications.
- Customize notification settings to receive alerts for specific events or activities according to your preferences.

Remember to explore the app and its various features to make the most out of your BoardHub experience.

2.5. Assumptions and Dependencies

It is assumed that users have access to a compatible Android mobile device with an internet connection to install and use the BoardHub app. The information provided for boarding house properties, including descriptions, images, and contact details, must be accurate and up to date. It is also assumed that users will comply with the terms and conditions, community guidelines, and acceptable use policies set by BoardHub to maintain a respectful and safe user environment.

3. System Features

3.1. Add Property

3.1.1. Description and Priority

Description: Allows users to post their boarding house property in BoardHub in which it displays the cost ,classification, and other details of the boarding house posts.

Priority: High

3.1.2. Stimulus / Response Sequences

Stimulus: How do I add property in the BoardHub?

Response: You can choose what kind of property you wish to add by selecting the "House with a plus sign" icon, which offers options such as House, Land, Apartment, Condo, Villa, and Castle.

Stimulus: What details must be provided when adding a property?

Response: Before adding a property, users should fill out the application's form with details such as the property's title, location, price, and any other relevant information.

Stimulus: Can I post pictures of the property online?

Response: Yes, users have the option to put the picture of their property for sale through the BoardHub application.

3.1.3. Functional Requirements

- 1. Photo Upload
 - Users need to have the option of uploading numerous pictures of the house to display its interior, outside, and various places.
 - For the purpose of reducing file size and ensuring quick loading times, the program should allow image compression and resizing.
- 2. Property Information Input
 - Users can submit more details about a property, such as its features and facilities, any recent improvements, and any other pertinent information.
 - Users can display information relevant to the property which includes prices, address of the property, and other significant information.

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3.2. Bookmark

3.2.1. Description and Priority

Description: Allows users to bookmark boarding house posts of interest. Can be viewed anytime in the Bookmark section / page of BoardHub.

Priority: Medium

3.2.2. Stimulus / Response Sequences

Stimulus: How do I bookmark a content?

Response: By clicking the heart icon on the content page, the user can bookmark the content, which takes them to the bookmark page where all the saved bookmarks are kept.

Stimulus: How do I access my bookmarks?

Response: To access the bookmarks, users can go to the bookmark page where it displays all the list of the bookmarks.

Stimulus: Can I remove bookmarks?

Response: Yes, the information is automatically removed from the bookmark page when you unlike it.

3.2.3. Functional Requirements

- 1. Bookmark Access
 - Users have a dedicated page to access all the saved bookmarks.
 - Saved bookmarks are sorted according to the most recent.
- 2. Bookmark Making
 - Users are free to bookmark any article they wish by giving it a like. The information is automatically saved by the system and stored on the bookmarks page.
 - Bookmark making is a simple process in which it is convenient to every user.
- 3. Bookmark tagging
 - By the time a user may add a bookmark, they can also take it away at any time by deleting it.
 - All the contents that were recognized by the users can be bookmarked with a tag.

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3.3. Comment Section

3.3.1. Description and Priority

Description: Allows users to comment with other BoardHub users on a boarding house property post. User's comment timestamp is also included in this feature.

Priority: Medium

3.3.2. Stimulus / Response Sequences

Stimulus: What is a comment section?

Response: A comment section is a feature in BoardHub where users can post their thoughts, opinion or feedback in a particular post.

Stimulus: How do comment sections work?

Response: Comment section allows users to express their significant thoughts in the application. Users have the chance to read and reply to comments, creating threaded conversation.

3.3.3. Functional Requirements

- 1. Comment Posting
 - Users must be able to post comments on both other people's content and their own.
 - Within a fair time span, users should have the option to edit or delete their own comments.
 - Basic text formatting choices like bold, italic, and hyperlinks should be supported in comments.
- 2. Comment Sorting and Filtering
 - The system automatically sorts comments based on the category like most recent or most relevant.
 - Displaying comments from a certain user, comments with attachments, or comments from verified users are just a few examples of filtering possibilities.
- 3. Comment display
 - The username, timestamp, and any other information like upvotes or likes should all be displayed in comments along with any additional relevant data.
 - In order to show threaded conversations, comments should be displayed in a way that is both understandable and clear

3.4. Sorting / Categorize Boarding House Property

3.4.1. Description and Priority

Description: Allows the user to sort and categorize the boarding house posts into various classifications (Condo, Apartment, etc.)

Priority: High

3.4.2. Stimulus / Response Sequences

Stimulus: Can I categorize my post to a specific name of property?

Response: The BoardHub application gives users a variety of alternatives to select from when deciding what exact property to post. whether it is House, Land, Condo, Apartment or any other properties to sale.

Stimulus: Can I sort all my posts?

Response: The application gives users options on how to sort all the posts whether it is ascending or descending based on prices.

3.4.3. Functional Requirements

- 1. Sorting Options
 - Various sorting options are available in the application, including those based on price, location, and other pertinent attributes.
 - Depending on the criteria they select, users should be able to sort properties both ascending and descending order.
- 2. Custom Sorting
 - Users should be able to design their own unique sorting or categorization criteria using the application in accordance with their preferences.

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3.5. Image Editor

3.5.1. Description and Priority

Description: Allows the user to change their preferred image and crop them to the desired ratio or adjustments.

Priority:Medium

3.5.2. Stimulus / Response Sequences

Stimulus: What editing choices are offered?

Response: A wide variety of editing tools are available in the BoardHub application, including cropping, resizing, and rotating.

Stimulus: How do I crop a picture?

Response: The application can give you the chance to crop before posting pictures, which enables you to specify a certain area to keep and eliminate the rest of the image. To get the right composition, you can change the crop's size and position.

Stimulus: How do I open a picture to edit?

Response: Typically, you can click the "Add images" button and pick "Open" to browse and select the image file from your computer or device in order to open an image for editing.

3.5.3. Functional Requirements

- 1. Basic tools for editing
 - Essential editing capabilities like cropping, resizing, rotating, and flipping are available in the image editor.
 - The image's aspect ratio, size, and orientation should all be modifiable by the user.
- 2. Import and export of images:
 - Users are able to import photos from a variety of areas, including local storage, cloud storage, and when taking the photos themselves.
 - The software has options for exporting altered photos in JPEG, PNG, or GIF file formats, among others.
- 3. Zoom and Pan
 - Users of the application can zoom in and out of the image for accurate editing.
 - When editing, users are able to pan or scroll the image to move between different locations.

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3.6. Like / Report Comment

3.6.1. Description and Priority

Description: Allows the user to like or report the comment made by other users of BoardHub in various boarding house property posts.

Priority: Medium

3.6.2. Stimulus / Response Sequences

Stimulus: Can I like a comment?

Response: Users must click the like button, which is an upward-pointing arrow, in order to approve a comment.

Stimulus: Can a comment be unliked?

Response: Yes, if you have already liked a comment, you can usually click again on the like button or icon to remove your like from the comment.

Stimulus: How can I report a comment?

Response: You may usually report a comment by clicking on the "Report" link or button that is provided next to the like button in the comment section. This enables you to draw attention to remarks that are offensive or inappropriate or that violate the terms of service or the community rules.

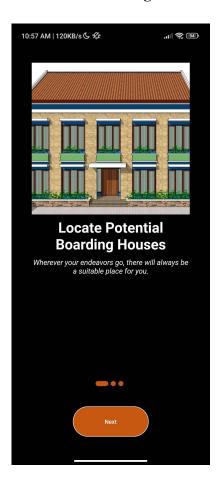
3.6.3. Functional Requirements

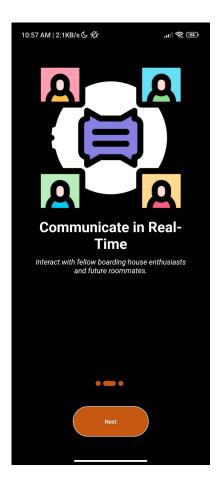
- 1. Like efficacy
 - Users ought to have the option to "like" remarks to show their admiration or agreement.
 - Each remark has a clear and simple "Like" button or icon provided by the application.
 - Users are able to quickly and easily like a comment.
- 2. Unlike mark
 - An earlier liked comment should be able to be unliked/disliked by users.
 - Users are able to quickly and easily unlike a comment.
- 3. Reporting Capabilities
 - Users can have the option to report remarks that are impolite, offensive, or that go against community standards.
 - Each comment has a clear and easy-to-use "Report" button or option.
 - A single click from users should be required to report a comment.

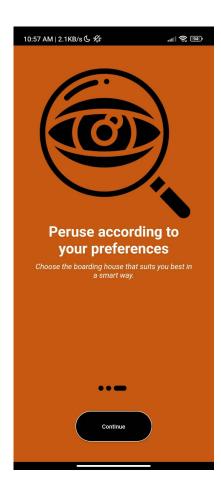
4. External Interface Requirements

4.1. User Interfaces

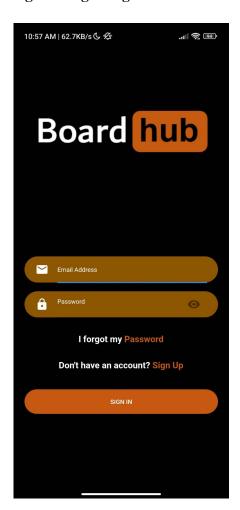
BoardHub Intro Page

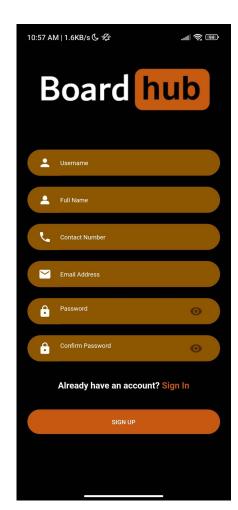




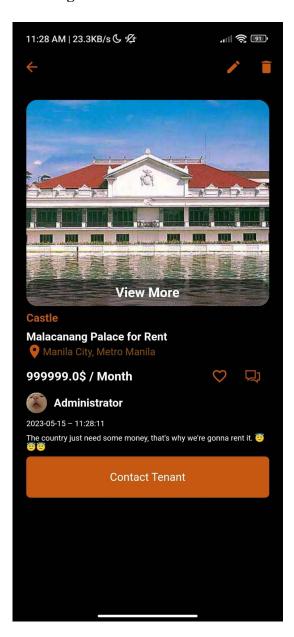


Sign in Page / Sign in Details

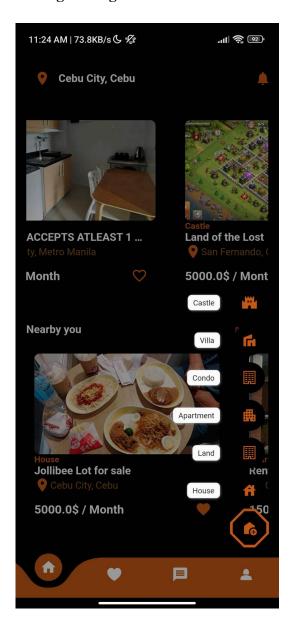


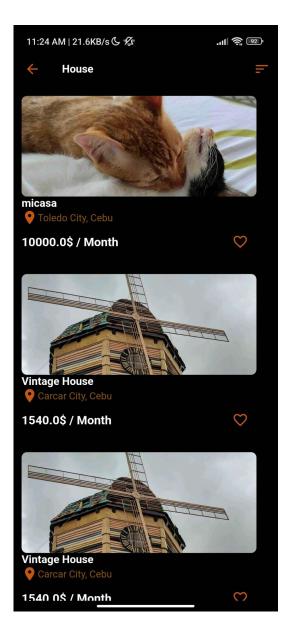


Boarding House Posts



Sorting / Categorize Posts

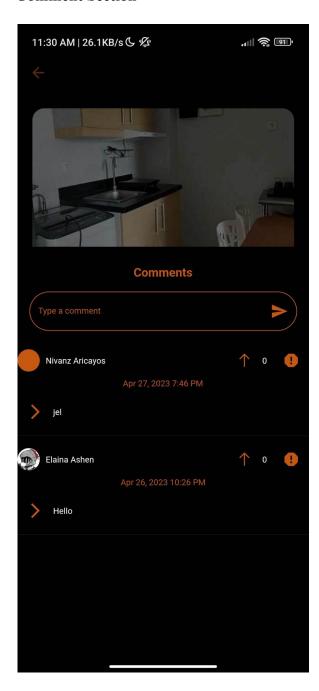




View More Images



Comment Section



Report Log



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4.2. Hardware Interfaces

A fully functional mobile phone with an Android Operating System is required for the software to be installed and operated by the user

4.3. Software Interfaces

The software uses the Android Operating System Environment as its platform for deployment.

4.4. Communication Interfaces

The application won't be communicating with other devices; thus a communication interface is not needed.

5. Other Nonfunctional Requirements

5.1. Performance Requirements

- Responsiveness: BoardHub should exhibit fast response times to user interactions, ensuring that
 actions such as property search, bookmarking, commenting, and profile editing are executed
 without noticeable delays.
- Loading Time: The app should have minimal loading times, especially when displaying property listings, images, and user-generated content to provide a smooth browsing experience.
- Search Efficiency: BoardHub should efficiently process search queries, delivering accurate and relevant results based on user preferences and criteria, such as location, price range, amenities, and property type.
- Scalability: The app should be designed to handle a growing number of users, boarding property listings, and user interactions without significant degradation in performance. This includes handling concurrent chats, notifications, and user activities seamlessly.
- Image Processing: The image editor feature should perform image processing tasks swiftly, allowing users to edit, crop, and enhance property images in real-time without experiencing lag or delays.
- Chat Responsiveness: The chat functionality should provide real-time messaging capabilities, ensuring that messages are delivered promptly and conversations occur in near real-time to facilitate efficient communication between tenants and landlords.
- Notification Delivery: BoardHub should deliver notifications promptly to users, ensuring that
 they are informed of relevant updates, new messages, or any other activity related to their
 account in a timely manner.

5.2. Safety Requirements

- Data Protection: BoardHub should have safety measures in place to protect user data and ensure that personal information, including profiles, communication data, and any sensitive data, is securely stored and transmitted.
- User Safety: BoardHub should prioritize user safety by implementing measures to prevent and address inappropriate or harmful content, ensuring that users can navigate the app without encountering malicious activities or harmful interactions.
- Privacy Settings: BoardHub should allow users to manage their privacy settings, granting them control over what information is visible to others, ensuring that users have the ability to protect their personal information according to their preferences.

• Reporting and Moderation: BoardHub should include a reporting system and moderation features to address and handle any abusive, offensive, or inappropriate content or behavior, fostering a safe and respectful community within the app.

5.3. Security Requirements

- User Authentication and Authorization: Implement a robust authentication mechanism to ensure that only authorized users can access and interact with the app's features. This may involve username/password authentication, social login integration, or other secure authentication methods
- Data Privacy and Protection: Safeguard user data by employing encryption techniques to protect sensitive information, such as user profiles and communication data. Comply with data protection regulations, including data storage and handling practices, to ensure user privacy.
- Secure Communication: Utilize secure communication protocols, such as HTTPS, to encrypt data transmitted between the app and the server. This helps prevent unauthorized interception or tampering of sensitive information during transit.
- Secure Storage: Implement secure storage mechanisms to protect user data stored within the app and on the server. This involves secure database configurations, encryption of stored data, and regular backups to prevent data loss.
- Access Control: Define appropriate access controls to restrict user permissions and ensure that
 users can only perform actions within their authorized scope. This includes role-based access
 control and granular permission settings for different user types (e.g., tenants, landlords,
 administrators).
- Vulnerability Management: Regularly update and patch the app's software components, frameworks, and libraries to address security vulnerabilities promptly. Perform regular security assessments, including penetration testing, to identify and mitigate potential risks.
- Secure File Handling: Apply secure file handling practices, including validation and sanitization of user-uploaded images for the image editor feature, to prevent security breaches or injection attacks.

5.4. Software Quality Attributes

- Usability: BoardHub should be designed with a user-friendly interface, allowing students, boarding house enthusiasts, and individuals seeking accommodations to easily navigate and utilize features such as adding properties, bookmarking, commenting, sorting/categorizing, image editing, editing profiles, chatting with tenants, and receiving notifications.
- Reliability: BoardHub should operate reliably, ensuring that users can access and manage boarding properties, receive notifications, and engage in interactions without unexpected failures or disruptions.
- Performance: BoardHub should demonstrate good performance in terms of speed and responsiveness, enabling swift loading, quick processing of user actions, and efficient handling of a large number of listings, comments, and user interactions.
- Security: BoardHub should implement robust security measures to protect user data, ensure secure communication channels, and prevent unauthorized access or breaches.
- Compatibility: BoardHub should be compatible with a wide range of mobile devices running the latest Android operating system or later, offering a consistent experience across different screen sizes, resolutions, and device capabilities.

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6. Other Requirements

1. Appendix A: Glossary

- BoardHub: The mobile application designed for students, boarding house enthusiasts, and individuals seeking boarding house accommodations in the Philippines.
- User-friendly: Refers to the design and functionality of BoardHub, ensuring that it is easy to use, intuitive, and accessible for everyday people.
- Tenants: Individuals who are seeking boarding house accommodations and will be using BoardHub to search, bookmark, comment, and connect with landlords.
- Landlords: Individuals who own or manage boarding house properties and will be using BoardHub to add property listings, categorize and sort them, receive comments, and connect with tenants.
- Add Boarding Property: The feature of BoardHub that allows landlords to add their boarding house properties to the app, providing details such as location, amenities, and pricing.
- Bookmark: The feature that enables users to save boarding house listings they are interested in for quick access and future reference.
- Comment Section: A dedicated area within BoardHub where users can leave comments, feedback, and reviews on specific boarding house listings.
- Sorting / Categorize Boarding Property: The functionality that allows users to organize and categorize boarding house listings based on different criteria such as location, price, amenities, and property type.
- Image Editor: The tool integrated into BoardHub that enables users to edit, crop, and enhance images associated with boarding house properties.
- Like / Report Comment: The options available for users to express their appreciation for a comment by liking it or report inappropriate or offensive comments to the app administrators.

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- Edit Profile: The feature that allows users to modify and update their personal information, preferences, and account details within BoardHub.
- Notification: The system within BoardHub that sends alerts and updates to users regarding activities related to their account, such as new messages, property updates, or important announcements.

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2. Appendix B: Analysis Models

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3. Appendix C: Issues List