



Global Distributed Software Development – AI5088 (WiSe24/25)

Master Team Project – Fall 2024

“Fulda Student Hub”

Milestone 1

November 07, 2024

Supervisor:

Prof. Dr. Todtenhöfer, Rainer

Team Members		
Member Name	Email	Role
Huzaifa Khatri	Huzaifa.khatri@informatik.hs-fulda.de	Team Lead & Backend Affinity
Shafi Shaik	Shafi.shaik@informatik.hs-fulda.de	Github Master
Muhammad Hassan	Muhammad.hassan@informatik.hs-fulda.de	Backend Lead
Divyansh Dahiya	Divyansh.dahiya@informatik.hs-fulda.de	Backend Affinity
Devansh Negi	Devansh.negi@informatik.hs-fulda.de	Frontend Affinity
Aniq Ahmed	Aniq.ahmed@informatik.hs-fulda.de	Frontend Lead

Revision History				
Member Name	Date Submitted	Date Revised	Remarks	Version
Huzaifa Khatri	07.11.2024	-	-	1.0
Huzaifa Khatri	13.11.2024	13.11.2024	<ul style="list-style-type: none"> - Updated use cases. - Added functional and non-functional requirements. - Added Competitive analysis 	1.1

Table of Contents

Executive Summary: Fulda Student Hub.....	1
Personas and Use Cases.....	2
Functional Requirements.....	12
Non-functional Requirements	16
Competitive Analysis.....	17
List of main data items and entities.....	18
High-level system architecture and technologies used	22
Team Members and roles	23
Checklist	23

Executive Summary: Fulda Student Hub

The **Fulda Student Hub** is an innovative platform designed to solve the growing accommodation challenges faced by students in Fulda. With an influx of new students expected, the platform exclusively focuses on student housing, streamlining the rental process and providing a secure, user-friendly experience. The **Fulda Student Hub** also provides helpful recommendations and tips, especially for international students unfamiliar with the local rental market.

This platform is designed to meet the unique needs of students by highlighting **active listings**, eliminating the frustration of encountering outdated properties. If a listing is inactive, students are provided with alternative suggestions based on their preferences, saving time and ensuring they always find relevant options.

Why Fund Fulda Student Hub?

Fulda Student Hub addresses the pressing need for dedicated student accommodation solutions, especially considering the upcoming surge in student admissions. It features a **live auction bidding system** that allows students to place competitive bids on urgent rental listings, offering flexibility and transparency. Additionally, all listings are verified by active moderators, ensuring the platform remains free from scams and fraud, making it an attractive solution for both landlords and students. This project represents a scalable opportunity in a growing market, and funding it will help provide a much-needed service to the Fulda student community.

The Team Behind the Project

The **Fulda Student Hub** is developed by a team of six students of MSc. **Global Software Development**. With expertise in **software engineering**, **web technologies**, and **project management**, we combine technical skills and managerial experience to deliver a high-quality solution. Our team has several years of industry experience, allowing us to build a secure, scalable, and user-friendly platform that addresses real-world challenges in student housing.

We are confident that **Fulda Student Hub** will become a vital resource for students in Fulda, transforming the rental experience and supporting students as they settle into their new academic lives.

Personas and Use Cases

Personas

Mia - The Renter (Student of Hochschule Fulda)

Background: Mia is a second-year student at Hochschule Fulda studying International Business. Originally from another city, she's on a budget and looking for a convenient, affordable, and safe place to stay close to campus.

Goals: Find affordable and furnished apartments within a short commute to campus. Easily filter and compare listings to quickly decide on the best options. Connect with landlords and arrange viewings that fit her study schedule.

Challenges: Limited budget and time to search due to her academic load. Needs clarity on rental terms, costs, and roommate arrangements if applicable.

Values: Transparent pricing, easy-to-navigate listings, and a reliable communication channel with landlords.

Mr. Schmidt - The Landlord/Seller

Background: Mr. Schmidt owns several rental properties near Hochschule Fulda. He's interested in renting to students who are generally reliable and respectful of rental terms.

Goals: Quickly post listings with all essential details to attract serious student renters. Find long-term renters who are responsible and respectful of property rules. Minimize time spent on repetitive inquiries by providing detailed listings.

Challenges: Handling multiple inquiries and managing rental arrangements while balancing his other commitments. Occasionally facing delays in rent payments from students.

Values: A platform that allows efficient ad posting, clear tenant communication, and tools to screen potential renters.

Sarah - The Admin/Moderator

Background: Sarah works as a digital administrator for Fulda Student Hub, ensuring smooth operations on the site and keeping content appropriate and relevant to students' needs.

Goals: Review and approve posts swiftly to keep the platform active and engaging. Ensure all listings meet the platform's guidelines and that the information provided is accurate. Assist with disputes, resolve complaints, and manage user feedback to improve the platform's reputation.

Challenges: Balancing prompt post approvals with quality control and accuracy. Managing disputes between landlords and renters while maintaining a neutral stance.

Values: Integrity of content, fair and transparent communication, and a secure, welcoming platform for users.

Anna - The Guest (Non-registered User)

Background: Anna is a potential renter who recently moved to Fulda and is considering enrolling at Hochschule Fulda. She's exploring rental options and wants a general idea of pricing and availability.

Goals: View available listings without needing to register, to gain an idea of rental costs and types of accommodation. Save time by being able to browse quickly and easily without commitment.

Challenges: Limited access to contact landlords or save listings as a guest user. Unable to filter options based on personal preferences without full access.

Values: Ease of access to browse options without registration, and a user-friendly interface for general research.

These personas address the primary types of users for Fulda Student Hub, each with unique needs and goals, ensuring the platform provides value to students, landlords, admins, and prospective renters alike.

Use Cases

1. Searching for a Property

Scenario: Mia, the renter, is looking for a property that meets her requirements.

Steps:

1. Mia logs into the platform using her username and password.
2. She clicks on the "Search Properties" option on the main menu.
3. She enters her preferred criteria, including location near Hochschule Fulda or another specified area, a monthly budget cap that fits her finances, and additional requirements like furnished rooms, WiFi, heating, and laundry access.
4. Mia can further filter options by property type (studio, shared apartment, etc.) or lease duration.
5. The platform displays a list of properties that meet Mia's criteria.
6. Mia can save specific listings to her "Favorites" for easier comparison.
7. If there are too few results, Mia can modify her criteria, such as expanding the location radius or adjusting her rent limit.
8. Mia logs out after completing her search or leaves the results open for further browsing.

2. Viewing Property Details and Photos

Scenario: Mia wants to know more about a property before scheduling a visit.

Steps:

1. Mia clicks on one of the saved or recent property listings from her search results.
2. The platform shows a gallery of high-quality photos, allowing her to view each room and property features like the kitchen, bathroom, and common areas.
3. Mia reads a comprehensive property description, which includes dimensions and layout information, a full list of amenities, such as furniture, internet, heating, and key details about the neighborhood, such as nearby stores or public transportation.
4. She reviews specific rental terms, including move-in availability, security deposit, and lease duration.
5. If previous renters have left reviews, Mia reads them to assess the landlord's reliability and the property condition.
6. Mia decides if she wants to proceed with contacting the landlord or saving the listing for later.

3. Contacting the Landlord for More Information or Scheduling a Viewing

Scenario: Mia is interested in a property and wants to ask the landlord questions or arrange a viewing.

Steps:

1. Mia clicks on the "Contact Landlord" button within the property listing.
2. She drafts a message, including a brief introduction about herself as a student, any questions about lease flexibility, included amenities, or move-in conditions, and a request to schedule an in-person or virtual viewing.
3. Mia sends the message through the platform.
4. Once the landlord responds, Mia receives a notification.
5. Mia reviews the landlord's answers and confirms a convenient viewing time.
6. She adds the viewing appointment to her calendar.
7. Mia waits for a reminder or any further details from the landlord closer to the viewing date.

4. Applying for Property

Scenario: After viewing the property, Mia decides to apply.

Steps:

1. Mia selects "Apply for this Property" from the listing page.
2. She provides details, including her name, student ID, contact information, and current address.
3. If required, Mia lists any rental history and references.
4. She uploads relevant documents, such as proof of student status, identification, and financial proof like bank statements or guarantor documents.
5. Mia reviews all information, ensuring accuracy, and submits her application.
6. The platform sends a confirmation that her application was successfully submitted.
7. Mia waits for a notification of acceptance, rejection, or a request for additional information from the landlord.

5. Signing the Lease Agreement Digitally

Scenario: Mia is approved for the property and needs to sign the lease agreement.

Steps:

1. Mia is notified that her application has been accepted, and a lease agreement is available.
2. She opens the digital lease agreement via a secure link provided by the platform.
3. Mia carefully reads through terms including rent, payment dates, duration, and property rules.
4. If she has questions, she uses the platform's messaging tool to contact the landlord for clarification.
5. Once satisfied, Mia digitally signs the lease using an integrated e-signature tool.
6. A digital copy of the signed lease is emailed to Mia for her records.
7. If there's a checklist to complete before move-in, Mia reviews it as a final step.

6. Leaving a Review for the Property

Scenario: After renting the property, Mia wants to share her experience.

Steps:

1. Mia logs in, navigates to her "Past Rentals," and selects the property to review.
2. She assigns a star rating based on overall satisfaction.
3. Mia writes a detailed review, covering topics such as landlord communication, property condition, neighborhood, and any issues she encountered.
4. She submits her review, which is visible to future prospective renters.
5. The platform sends Mia a confirmation, thanking her for her feedback.

7. Creating a Property Listing

Scenario: Mr. Schmidt, the landlord, wants to list a property for rent.

Steps:

1. Mr. Schmidt logs into his landlord account.
2. He clicks on "Create New Listing."
3. Mr. Schmidt fills out all required fields, including the exact location or approximate area, monthly rent and any additional costs, a detailed description highlighting property features, and a selection of available amenities like parking, internet, heating, and furniture.
4. He uploads high-quality photos showcasing the property's rooms and features.
5. Mr. Schmidt reviews all listing information for accuracy and submits it for publication.
6. The platform confirms that the listing is live, available for tenants to view.

8. Accessing and Editing Property Listings

Scenario: Mr. Schmidt wants to update an existing listing.

Steps:

1. Mr. Schmidt logs into his account.
2. He accesses the “My Listings” section to view his active properties.
3. Mr. Schmidt clicks on the specific property he wants to update.
4. He edits details such as rental price, availability, or updates new photos.
5. Once edits are complete, Mr. Schmidt saves the updated listing.
6. The platform confirms the listing is updated and live for tenant viewing.

9. Responding to Tenant Inquiries

Scenario: Mr. Schmidt receives an inquiry from a potential tenant.

Steps:

1. Mr. Schmidt receives a message notification from an interested tenant.
2. He reads the tenant’s message and considers their questions.
3. Mr. Schmidt drafts a response, answering questions and, if applicable, proposing viewing times.
4. He sends the message through the platform.
5. If the tenant is interested, Mr. Schmidt schedules a viewing and adds it to his calendar.
6. Both Mr. Schmidt and the tenant receive a reminder for the scheduled viewing.

Use Case 10. Filtering Applications to Find Suitable Tenants

Scenario: A property owner receives numerous applications for a rental property and needs to find the most suitable candidates.

Steps:

1. The owner logs into the platform and navigates to the “Applications Dashboard” for the listed property.
2. They apply filters such as “Student Status” and “Budget” to narrow down applications to those meeting their criteria.
3. The platform displays a refined list of applicants based on the chosen filters.
4. The owner reviews each applicant’s profile, documents, and rental history.
5. They use the messaging feature to contact selected applicants for additional details or to schedule a viewing.
6. After selecting suitable candidates, the owner proceeds with scheduling viewings for the top applicants.

Use Case 11. Reviewing and Approving Maintenance Requests

Scenario: A property owner receives a maintenance request from a tenant for a broken heater and needs to review and address it.

Steps:

1. The owner logs into their dashboard and navigates to the “Maintenance Requests” section.
2. They see a new request labeled “Broken Heater,” along with attached photos and a detailed description.
3. The owner reviews the request details and decides whether they can handle it themselves or if a professional is required.
4. They update the request’s status to “In Progress” and notify the tenant through the platform.
5. After scheduling and completing the repair, the owner updates the request status to “Resolved,” and both parties receive a record of the maintenance activity.

Use Case 12. Monitoring Listings for Inappropriate Content

Scenario: A moderator reviews new listings to ensure that all posted content is appropriate and accurate.

Steps:

1. The moderator logs into their account and goes to the “Listings Monitoring” page.
2. They review flagged listings, focusing on descriptions, images, and overall accuracy.
3. Upon finding a listing with low-quality images or potential inaccuracies, the moderator flags the listing for review.
4. The moderator contacts the listing owner to request specific changes to improve quality.
5. For any listing with inappropriate content, the moderator reports it to the admin team for further action.
6. After all flagged listings are reviewed, the moderator finalizes approvals for those meeting platform guidelines.

Use Case 13. Blocking Suspicious Users

Scenario: A moderator identifies a user exhibiting suspicious behavior, such as sending spam messages to multiple users.

Steps:

1. The moderator accesses the “Suspicious Activity” dashboard and reviews a list of flagged users.
2. They identify a user sending multiple unsolicited messages, which the system has flagged as potential spam.
3. The moderator reports the user to the admin team, detailing their activity.
4. The admin team reviews the report and decides to temporarily block the user until further investigation.
5. The moderator monitors the user’s account status to ensure platform compliance and minimize abuse.

Use Case 14. Generating Monthly Site Analytics Reports

Scenario: An admin generates monthly reports on platform usage to monitor growth and identify improvement areas.

Steps:

1. The admin logs into their dashboard and selects “Analytics Reports.”
2. They configure report parameters, selecting metrics like active users, new listings, and total applications submitted.
3. The time frame is set to the previous month, and the admin selects “Generate Report.”
4. Once generated, the admin reviews the report’s key performance indicators, noting user engagement trends.
5. The report is saved as a PDF and shared with the team for analysis and planning.
6. Based on insights from the report, the admin proposes possible updates or promotional efforts to enhance user engagement.

Use Case 15. Encouraging Registration with Full Access Prompts

Scenario: A non-registered user browsing properties receives prompts to register for full access to platform features.

Steps:

1. The guest opens the platform homepage and begins browsing available listings.
2. When they click on a listing, basic details like rent, location, and preview photos are visible.
3. On attempting to access additional details, a pop-up message encourages them to register for full access to messaging, favorites, and contact features.
4. Interested in the added features, the guest creates an account.
5. Once registered, they gain access to full listing details, messaging features, and the ability to save listings.

Use Case 16: Scheduling Platform Maintenance and Notifications

Scenario: An admin schedules regular platform maintenance and needs to notify users to minimize inconvenience.

Steps:

1. The admin opens the “Maintenance Schedule” tool on their dashboard.
2. They select a date and time for maintenance, aiming for low-traffic hours to reduce user impact.
3. The admin creates an in-app announcement to notify users of the upcoming maintenance, including expected downtime details.
4. They set the announcement to display prominently on the platform starting 24 hours before the scheduled maintenance.
5. After maintenance is completed, the admin removes the announcement and monitors the platform for any post-maintenance issues reported by users.

Use Case 17. Tracking Expired Listings for Removal

Scenario: A moderator tracks expired listings to ensure they are removed from the platform's public view.

Steps:

1. The moderator navigates to the “Expired Listings” section in their dashboard.
2. They see a list of listings that have reached their expiry date without updates from the owners.
3. The moderator reviews each expired listing and contacts the owner about renewing or updating the listing if needed.
4. If there’s no response from the owner, the moderator removes the listing from the active page to ensure the platform remains current.
5. The moderator documents any removed listings in case owners inquire about the status change later.

Functional Requirements

1. User Registration for Renters

Renters (students of Hochschule Fulda) can create an account using their university credentials for easy access to the platform. This simplifies the registration process and ensures secure user identification.

2. User Registration for Landlords

Landlords can register by submitting valid identification, enabling them to post property listings. This ensures that landlords are verified and can be trusted by renters.

3. Admin and Moderator Verification Access

Admins and moderators have the ability to verify user registrations and ensure that listings meet platform standards. This helps maintain the integrity of the platform by filtering unverified or inappropriate content.

4. Guest Access for Property Browsing

Non-registered users (guests) can browse available property listings without the need to create an account. This allows potential renters to explore options before committing to registration.

5. Property Listing Creation

Landlords can create detailed property listings by providing essential information, such as location, rent price, and availability. This function enables landlords to showcase their properties effectively.

6. Property Listing Editing and Deletion

Landlords can modify or remove their listings as needed. This gives landlords flexibility in managing their property details and ensuring that outdated information is promptly updated.

7. Property Photo and Detail Upload

Landlords can upload photos and detailed descriptions for each property, including room features, amenities, and neighborhood details. This enhances the attractiveness of the listing and provides a clear picture for potential renters.

8. Recommendation System for Listings

The platform uses a recommendation algorithm to suggest properties to renters based on their preferences, previous search history, and the freshness of listings. This helps renters discover suitable options more quickly.

9. Search Functionality for Property Listings

Renters can search properties based on various criteria such as location, rent, and availability. This streamlines the process of finding suitable listings for renters.

10. Filtering Options for Search Results

Renters can apply multiple filters to narrow down search results based on specific

preferences, such as pet-friendly, furnished, or proximity to public transportation. This helps renters find more personalized matches.

11. In-App Messaging System for Communication

Renters and landlords can securely message each other within the platform to ask questions, clarify details, and schedule property viewings. This ensures secure, documented communication.

12. Digital Application Submission

Renters can submit rental applications digitally through the platform, simplifying the process and reducing the need for paper documentation. Renters can also track the status of their application in real-time.

13. Digital Lease Signing

Renters can review and digitally sign lease agreements on the platform. This feature eliminates the need for physical signatures, speeding up the rental process and maintaining security.

14. Review and Rating Submission

Renters can leave reviews and ratings for landlords and properties, helping future renters make more informed decisions. This function promotes transparency and trust in the rental process.

15. Content Moderation by Admins

Admins can edit or remove inappropriate listings, comments, or user-generated content to ensure the platform remains respectful and professional. This helps maintain a positive environment for all users.

16. Dispute Resolution Tools for Admins

Admins have tools to handle disputes between landlords and renters, review complaints, and manage conflicts fairly. This ensures the platform runs smoothly and issues are addressed promptly.

17. Property Availability Tracking

Landlords can mark properties as "available" or "unavailable" and update their status in real-time. Renters are notified of any changes to availability, reducing the risk of wasted time on outdated listings.

18. Lease Renewal Notifications

Renters and landlords receive automatic notifications when a lease is approaching its renewal date. This feature ensures both parties are informed and can discuss terms well in advance.

19. Multi-Language Support

The platform supports multiple languages to accommodate international students and renters, improving accessibility and user experience. This expands the platform's usability to a wider audience.

20. Push Notifications for Important Updates

Renters and landlords receive push notifications for critical updates such as new messages, lease reminders, or application status changes. This keeps users informed in real-time.

21. Customizable Rental Preferences for Renters

Renters can set and save their preferred property filters and search criteria. This allows them to receive tailored results and notifications that match their specific needs.

22. Emergency Contact for Renters

Renters can provide emergency contact information in case of urgent issues related to the property, ensuring prompt communication between renters, landlords, and emergency services.

23. Document Upload for Rental Applications

Renters can upload required documents, such as identification or proof of income, directly through the platform. This streamlines the application process and ensures that landlords have all the necessary information.

24. Viewing History for Renters

Renters can access a history of previously viewed properties and compare them. This helps renters stay organized and decide on the best options.

25. Property Description Translation

Automatically translates property descriptions into the user's preferred language, ensuring clarity for non-native speakers. This feature is particularly useful for international students and renters.

26. Privacy Settings for Users

Renters and landlords can manage their privacy settings, including who can view their profiles and contact them. This allows for control over personal information and communication preferences.

27. Bulk Property Listing Management for Landlords

Landlord with multiple properties can manage all their listings in bulk, making it easier to update or remove several properties at once. This saves time and improves efficiency.

28. Notification System for Renters and Landlords

Both renters and landlords receive push notifications and email alerts about important events, such as new listings matching their criteria or when a lease is due for renewal.

29. User Activity Tracking for Admins

Admins can track user activity, including login history, messages, and listings viewed. This helps identify potential issues, monitor platform activity, and improve security.

30. Advanced Filtering for Renters

Renters can filter listings by specific features such as pet policies, type of heating system, or access to parking. This ensures renters find the property that best suits their needs.

31. Auction Listing Creation by Landlords

Landlords can create auction listings for properties they need to rent urgently. These auctions will allow students to bid on the property, setting a dynamic market-driven rental price.

32. Real-Time Bidding for Renters

Renters can place real-time bids on properties listed in the auction. This feature allows students to actively compete for properties that have urgent availability.

33. Live Auction Updates

Renters can view live updates on the current highest bid and the remaining time for the auction. This ensures transparency and allows students to adjust their bids accordingly.

34. Bidding Notifications for Renters

Renters receive push notifications if their bid is outbid or if the auction is nearing its end. This keeps students engaged and informed throughout the auction process.

Non-functional Requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class
2. CTO and as agreed in Milestone 0. Application delivery shall be from chosen cloud server
3. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers
4. All or selected application functions must render well on mobile devices
5. Data shall be stored in the database on the team's deployment cloud server.
6. Full resolution free media shall be downloadable directly, and full resolution media for selling shall be obtained after contacting the seller/owner
7. No more than 50 concurrent users shall be accessing the application at any time
8. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users.
9. The language used shall be English (no localization needed)
10. Application shall be very easy to use and intuitive
11. Application should follow established architecture patterns
12. Application code and its repository shall be easy to inspect and maintain
13. Google analytics shall be used (optional for Fulda teams)
14. No e-mail clients shall be allowed.
15. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.
16. Site security: basic best practices shall be applied (as covered in the class) for main data items
17. Application shall be media rich (images, video etc.). Media formats shall be standard as used in the market today
18. Modern SE processes and practices shall be used as specified in the class, including
19. collaborative and continuous SW development
20. For code development and management, as well as documentation like formal milestones
21. required in the class, each team shall use their own GitHub to be set-up by class instructors and started by each team during Milestone 0
22. The application UI (WWW and mobile) shall prominently display the following exact text on all pages "Fulda University of Applied Sciences Software Engineering Project, Fall 2024 For
23. Demonstration Only" at the top of the WWW page. (Important to not confuse this with a real application).

Competitive Analysis

	Fulda Student Hub (Our Application)	WG-Gesucht.de	Studenten-WG.de	ImmoScout24.de	HousingAnywhere.com
Student focused listings	✓	✗	✓	✗	✓
Direct communication with Landlords	✓	✓	✓	✓	✓
Lease agreement and management functionalities	✓	✗	✗	✓	✗
Verified Listings	✓	✗	✗	✓	✓
Region-Specific Support	✓	✗	✗	✗	✗

List of main data items and entities

Data Entities

S.No.	Entities	Description
1	Owner	The individual or entity managing the property, responsible for creating listings, approving tenants, and handling maintenance requests.
2	Applicant	A potential tenant who expresses interest in renting a property by submitting an application to the owner for consideration. As per our use case, they would be limited to students at Hochschule Fulda.
3	Property	A real estate asset available for rent, including details like address, rent, and amenities. Properties are listed by owners and can be viewed by potential tenants.
4	Listing	An online advertisement for a property, providing information and images to attract student renters. Listings showcase available properties and key details. Interested applicants can apply to a listing.
5	Accommodation Request	Applicants can create their own Requests for searching accommodation which the Owners would be able to view. The applicants can include information and pictures about themselves and their requirements.
6	Lease	A formal rental agreement between the property owner and the applicant, detailing rental terms such as rent, duration, and obligations. Our platform would facilitate the process with a feature to sign a lease digitally.
7	Maintenance Request	A tenant's request for repairs or maintenance to address issues in the rented property, submitted to the owner.
8	Dashboard	A personalized interface for users (owners, applicants, or administrators) displaying key information such as property listings, applications, leases, and requests.

10	Trust Score	A score assigned to owners based on a number of factors including response time to a query, handling of maintenance requests and being reported by other users.
11	Reported	A status indicating that a listing or owner has been flagged for review due to possible issues or violations, requiring further investigation by an administrator.
12	Bidding	A competitive process where potential tenants place offers on a property, with the highest or most favorable bid often winning the rental opportunity.
13	Chat	A messaging feature allowing direct communication between tenants and owners, facilitating questions, negotiations, and updates related to property rentals.
14	Portfolio	A collection of information and documents provided by a rental applicant, such as personal details, proof of financial means, and references, to demonstrate suitability for a property.
15	Verification	The process of validating an applicant's or property owner's information and credentials, ensuring authenticity and trustworthiness for secure rental transactions. Since applicants are limited to students their email addresses can be used for this.
16	Recommendation System	The algorithm to rank the order of the listings a user would see. It can be done on the basis of the following factors: trust score of the owner, overlapping between the user's searching criteria and the listing, and how old the listing is.
17	Admin	A high-level user with full control over the application, responsible for managing users, properties, reported content, and overall system settings to ensure smooth operation and compliance.
18	Moderator	A user with permissions to review and manage reported content, handle user disputes, and assist with maintaining community standards, but with limited access compared to an Admin.
19	Guest	An unregistered or limited-access user who can browse property listings but cannot interact fully with the system (e.g., no ability to apply for properties, chat, or submit requests).

Users and Privileges

S.No.	User Type	Privileges
1	Applicant	<ol style="list-style-type: none">1. Create a User profile and upload photos and documents2. Search and filter through the listings3. Submit rental applications4. Message the author of a listing5. Review and sign a lease agreements6. Submit and track a maintenance request7. Add Favorites for listings8. Create and manage Accommodation Requests
2	Owner	<ol style="list-style-type: none">1. Create, edit and delete their posted listings2. Search and filter applications3. Access a dashboard with details of all the properties they manage4. Message the interested applicants5. Track and sign a lease agreements6. Review a maintenance request
3	Admin	<ol style="list-style-type: none">1. Able to manage and block users2. Assist users with account recovery3. Edit and Remove listings4. Manage Moderators5. Schedule application maintenance6. Monitor site analytics and generate monthly/annual reports7. Configure system settings8. Manage in-app announcements and policy updates
4	Moderator	<ol style="list-style-type: none">1. Monitor listing description and images for inappropriate or inaccurate content

		<ul style="list-style-type: none"> 2. Able to report users and listings to the Admin 3. Verifying listings through preliminary checks for inaccurate images or data 4. Monitor expired listings 5. Track suspicious activity
5	Guest	<ul style="list-style-type: none"> 1. Browse available properties with basic details and photos. 2. Search and Filter Properties 3. Access detailed property information, amenities, and availability. 4. Receive prompts encouraging registration for full feature access.

High-level system architecture and technologies used

Hosting: Amazon Web Services

Back-end Framework: Node.Js

Back-end Language: Javascript

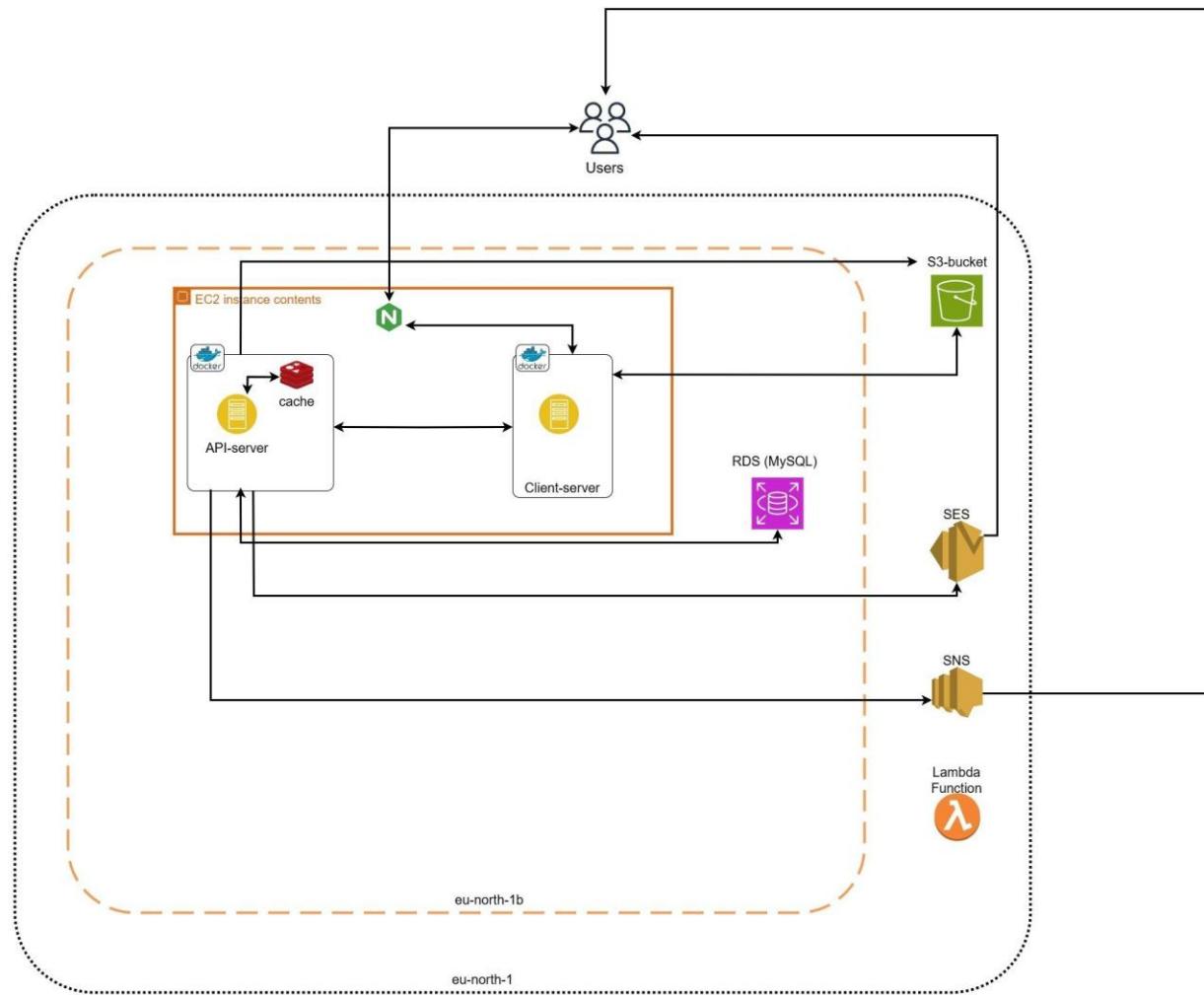
Front-end Library: React 18

Front-end Language: Javascript, HTML5, CSS3, Bootstrap

Code Editor: Visual Studio Code

Target Web browsers: Google Chrome, Mozilla Firefox,

Database: MySQL



Team Members and roles

Member Name	Email	Role
Huzaifa Khatri	Huzaifa.khatri@informatik.hs-fulda.de	Team Lead & Backend Affinity
Shafi Shaik	Shafi.shaik@informatik.hs-fulda.de	Github Master
Muhammad Hassan	Muhammad.hassan@informatik.hs-fulda.de	Backend Lead
Divyansh Dahiya	Divyansh.dahiya@informatik.hs-fulda.de	Backend Affinity
Devansh Negi	Devansh.negi@informatik.hs-fulda.de	Frontend Affinity
Aniq Ahmed	Aniq.ahmed@informatik.hs-fulda.de	Frontend Lead

Checklist

Tasks	Status (Done / On Track / Issue)
Team found a time slot to meet outside of the class	Done
GitHub master chosen	Done
Team decided and agreed together on using the listed SW tools and deployment server	Done
Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing	Done
Team lead ensured that all team members read the final M1 and agree/understand it before submission	Done
GitHub organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)	Done



Global Distributed Software Development – AI5088 (WiSe24/25)

Master Team Project – Fall 2024

“Fulda Student Hub”

Milestone 2

November 21, 2024

Supervisor:

Prof. Dr. Todtenhöfer, Rainer

Team Members		
Member Name	Email	Role
Huzaifa Khatri	Huzaifa.khatri@informatik.hs-fulda.de	Team Lead & Backend Affinity
Shafi Shaik	Shafi.shaik@informatik.hs-fulda.de	Github Master
Muhammad Hassan	Muhammad.hassan@informatik.hs-fulda.de	Backend Lead
Divyansh Dahiya	Divyansh.dahiya@informatik.hs-fulda.de	Backend Affinity
Devansh Negi	Devansh.negi@informatik.hs-fulda.de	Frontend Affinity
Aniq Ahmed	Aniq.ahmed@informatik.hs-fulda.de	Frontend Lead

Revision History				
Member Name	Date Submitted	Date Revised	Remarks	Version
Huzaifa Khatri	21.11.2024	-	-	1.0
Huzaifa Khatri	28.11.2024	27.11.2024	Added missing components and updated some previous ones	2.0

Contents

1. Functional Requirements with Priority (1 – must have, 2 – desire, 3 – opportunistic)	1
1.1 List of Use Cases	4
1.2 List of Main Use Cases	5
2. List of main data items and entities	9
3. NEW: UI Mockups and Storyboards (high level only)	13
3.1 Use Case 1.....	13
3.2 Use Case 2.....	14
3.3 Use Case 3.....	15
3.4 Accessing and Updating listing as Landlord	16
4. NEW High-level Architecture and technologies used	18
4.1 Technology Stack and High Level Architecture Diagram.....	18
4.2 Database Organization	19
4.3 API Endpoints	23
5. High Level UML Diagrams	25
5.1 Class Diagram.....	25
5.2 Deployment Diagram	26
6. Key Risks	27
7. Project Management	28

1. Functional Requirements with Priority

(1 – must have, 2 – desire, 3 – opportunistic)

1. (1) User Registration for Renters

Renters (students of Hochschule Fulda) can create an account using their university credentials for easy access to the platform. This simplifies the registration process and ensures secure user identification.

2. (1) User Registration for Landlords

Landlords can register by submitting valid identification, enabling them to post property listings. This ensures that landlords are verified and can be trusted by renters.

3. (3) Admin and Moderator Verification Access

Admins and moderators have the ability to verify user registrations and ensure that listings meet platform standards. This helps maintain the integrity of the platform by filtering unverified or inappropriate content.

4. (1) Guest Access for Property Browsing

Non-registered users (guests) can browse available property listings without the need to create an account. This allows potential renters to explore options before committing to registration.

5. (1) Property Listing Creation

Landlords can create detailed property listings by providing essential information, such as location, rent price, and availability. This function enables landlords to showcase their properties effectively.

6. (1) Property Listing Editing and Deletion

Landlords can modify or remove their listings as needed. This gives landlords flexibility in managing their property details and ensuring that outdated information is promptly updated.

7. (1) Property Photo and Detail Upload

Landlords can upload photos and detailed descriptions for each property, including room features, amenities, and neighborhood details. This enhances the attractiveness of the listing and provides a clear picture for potential renters.

8. (2) Recommendation System for Listings

The platform uses a recommendation algorithm to suggest properties to renters based on their preferences, previous search history, and the freshness of listings. This helps renters discover suitable options more quickly.

9. (1) Search Functionality for Property Listings

Renters can search properties based on various criteria such as location, rent, and availability. This streamlines the process of finding suitable listings for renters.

10. (1) Filtering Options for Search Results

Renters can apply multiple filters to narrow down search results based on specific preferences, such as pet-friendly, furnished, or proximity to public transportation. This helps renters find more personalized matches.

11. (1) In-App Messaging System for Communication

Renters and landlords can securely message each other within the platform to ask questions, clarify details, and schedule property viewings. This ensures secure, documented communication.

12. (3) Digital Application Submission

Renters can submit rental applications digitally through the platform, simplifying the process and reducing the need for paper documentation. Renters can also track the status of their application in real-time.

13. (3) Digital Lease Signing

Renters can review and digitally sign lease agreements on the platform. This feature eliminates the need for physical signatures, speeding up the rental process and maintaining security.

14. (2) Review and Rating Submission

Renters can leave reviews and ratings for landlords and properties, helping future renters make more informed decisions. This function promotes transparency and trust in the rental process.

15. (1) Content Moderation by Admins

Admins can edit or remove inappropriate listings, comments, or user-generated content to ensure the platform remains respectful and professional. This helps maintain a positive environment for all users.

16. (2) Dispute Resolution Tools for Admins

Admins have tools to handle disputes between landlords and renters, review complaints, and manage conflicts fairly. This ensures the platform runs smoothly and issues are addressed promptly.

17. (1) Property Availability Tracking

Landlords can mark properties as "available" or "unavailable" and update their status in real-time. Renters are notified of any changes to availability, reducing the risk of wasted time on outdated listings.

18. (3) Lease Renewal Notifications

Renters and landlords receive automatic notifications when a lease is approaching its renewal date. This feature ensures both parties are informed and can discuss terms well in advance.

19. (3) Multi-Language Support

The platform supports multiple languages to accommodate international students and

renters, improving accessibility and user experience. This expands the platform's usability to a wider audience.

20. (3) Push Notifications for Important Updates

Renters and landlords receive push notifications for critical updates such as new messages, lease reminders, or application status changes. This keeps users informed in real-time.

21. (1) Customizable Rental Preferences for Renters

Renters can set and save their preferred property filters and search criteria. This allows them to receive tailored results and notifications that match their specific needs.

22. (1) Emergency Contact for Renters

Renters can provide emergency contact information in case of urgent issues related to the property, ensuring prompt communication between renters, landlords, and emergency services.

23. (1) Document Upload for Rental Applications

Renters can upload required documents, such as identification or proof of income, directly through the platform. This streamlines the application process and ensures that landlords have all the necessary information.

24. (1) Viewing History for Renters

Renters can access a history of previously viewed properties and compare them. This helps renters stay organized and decide on the best options.

25. (1) Property Description Translation

Automatically translates property descriptions into the user's preferred language, ensuring clarity for non-native speakers. This feature is particularly useful for international students and renters.

26. (1) Privacy Settings for Users

Renters and landlords can manage their privacy settings, including who can view their profiles and contact them. This allows for control over personal information and communication preferences.

27. (3) Bulk Property Listing Management for Landlords

Landlord with multiple properties can manage all their listings in bulk, making it easier to update or remove several properties at once. This saves time and improves efficiency.

28. (2) Notification System for Renters and Landlords

Both renters and landlords receive push notifications and email alerts about important events, such as new listings matching their criteria or when a lease is due for renewal.

29. (2) User Activity Tracking for Admins

Admins can track user activity, including login history, messages, and listings viewed. This helps identify potential issues, monitor platform activity, and improve security.

30. (1) Advanced Filtering for Renters

Renters can filter listings by specific features such as pet policies, type of heating system, or access to parking. This ensures renters find the property that best suits their needs.

31. (2) Auction Listing Creation by Landlords

Landlords can create auction listings for properties they need to rent urgently. These auctions will allow students to bid on the property, setting a dynamic market-driven rental price.

32. (2) Real-Time Bidding for Renters

Renters can place real-time bids on properties listed in the auction. This feature allows students to actively compete for properties that have urgent availability.

33. (2) Live Auction Updates

Renters can view live updates on the current highest bid and the remaining time for the auction. This ensures transparency and allows students to adjust their bids accordingly.

34. (2) Bidding Notifications for Renters

Renters receive push notifications if their bid is outbid or if the auction is nearing its end. This keeps students engaged and informed throughout the auction process.

1.1 List of Use Cases

1. Searching for a Property
2. Viewing Property Details and Photos
3. Contacting the Landlord for More Information or Scheduling a Viewing
4. Applying for Property
5. Signing the Lease Agreement Digitally
6. Leaving a Review for the Property
7. Creating a Property Listing
8. Accessing and Editing Property Listings
9. Responding to Tenant Inquiries
10. Filtering Applications to Find Suitable Tenants
11. Reviewing and Approving Maintenance Requests
12. Monitoring Listings for Inappropriate Content
13. Blocking Suspicious Users
14. Generating Monthly Site Analytics Reports
15. Encouraging Registration with Full Access Prompts
16. Scheduling Platform Maintenance and Notifications
17. Tracking Expired Listings for Removal

1.2 List of Main Use Cases

1. Searching for a Property

Scenario: Mia, the renter, is looking for a property that meets her requirements.

Steps:

1. Mia logs into the platform using her username and password.
2. She clicks on the "Search Properties" option on the main menu.
3. She enters her preferred criteria, including location near Hochschule Fulda or another specified area, a monthly budget cap that fits her finances, and additional requirements like furnished rooms, WiFi, heating, and laundry access.
4. Mia can further filter options by property type (studio, shared apartment, etc.) or lease duration.
5. The platform displays a list of properties that meet Mia's criteria.
6. Mia can save specific listings to her "Favorites" for easier comparison.
7. If there are too few results, Mia can modify her criteria, such as expanding the location radius or adjusting her rent limit.
8. Mia logs out after completing her search or leaves the results open for further browsing.

2. Viewing Property Details and Photos

Scenario: Mia wants to know more about a property before scheduling a visit.

Steps:

1. Mia clicks on one of the saved or recent property listings from her search results.
2. The platform shows a gallery of high-quality photos, allowing her to view each room and property features like the kitchen, bathroom, and common areas.
3. Mia reads a comprehensive property description, which includes dimensions and layout information, a full list of amenities, such as furniture, internet, heating, and key details about the neighborhood, such as nearby stores or public transportation.
4. She reviews specific rental terms, including move-in availability, security deposit, and lease duration.
5. If previous renters have left reviews, Mia reads them to assess the landlord's reliability and the property condition.
6. Mia decides if she wants to proceed with contacting the landlord or saving the listing for later.

3. Applying for Property

Scenario: After viewing the property, Mia decides to apply.

Steps:

1. Mia selects "Apply for this Property" from the listing page.
2. She provides details, including her name, student ID, contact information, and current address.
3. If required, Mia lists any rental history and references.
4. She uploads relevant documents, such as proof of student status, identification, and financial proof like bank statements or guarantor documents.
5. Mia reviews all information, ensuring accuracy, and submits her application.
6. The platform sends a confirmation that her application was successfully submitted.
7. Mia waits for a notification of acceptance, rejection, or a request for additional information from the landlord.

4. Leaving a Review for the Property

Scenario: After renting the property, Mia wants to share her experience.

Steps:

1. Mia logs in, navigates to her "Past Rentals," and selects the property to review.
2. She assigns a star rating based on overall satisfaction.
3. Mia writes a detailed review, covering topics such as landlord communication, property condition, neighborhood, and any issues she encountered.
4. She submits her review, which is visible to future prospective renters.
5. The platform sends Mia a confirmation, thanking her for her feedback.

5. Creating a Property Listing

Scenario: Mr. Schmidt, the landlord, wants to list a property for rent.

Steps:

1. Mr. Schmidt logs into his landlord account.
2. He clicks on "Create New Listing."
3. Mr. Schmidt fills out all required fields, including the exact location or approximate area, monthly rent and any additional costs, a detailed description highlighting property features, and a selection of available amenities like parking, internet, heating, and furniture.
4. He uploads high-quality photos showcasing the property's rooms and features.
5. Mr. Schmidt reviews all listing information for accuracy and submits it for publication.
6. The platform confirms that the listing is live, available for tenants to view.

6. Accessing and Editing Property Listings

Scenario: Mr. Schmidt wants to update an existing listing.

Steps:

1. Mr. Schmidt logs into his account.
2. He accesses the “My Listings” section to view his active properties.
3. Mr. Schmidt clicks on the specific property he wants to update.
4. He edits details such as rental price, availability, or updates new photos.
5. Once edits are complete, Mr. Schmidt saves the updated listing.
6. The platform confirms the listing is updated and live for tenant viewing.

7. Responding to Tenant Inquiries

Scenario: Mr. Schmidt receives an inquiry from a potential tenant.

Steps:

1. Mr. Schmidt receives a message notification from an interested tenant.
2. He reads the tenant’s message and considers their questions.
3. Mr. Schmidt drafts a response, answering questions and, if applicable, proposing viewing times.
4. He sends the message through the platform.
5. If the tenant is interested, Mr. Schmidt schedules a viewing and adds it to his calendar.
6. Both Mr. Schmidt and the tenant receive a reminder for the scheduled viewing.

8. Filtering Applications to Find Suitable Tenants

Scenario: A property owner receives numerous applications for a rental property and needs to find the most suitable candidates.

Steps:

1. The owner logs into the platform and navigates to the “Applications Dashboard” for the listed property.
2. They apply filters such as “Student Status” and “Budget” to narrow down applications to those meeting their criteria.
3. The platform displays a refined list of applicants based on the chosen filters.
4. The owner reviews each applicant’s profile, documents, and rental history.
5. They use the messaging feature to contact selected applicants for additional details or to schedule a viewing.
6. After selecting suitable candidates, the owner proceeds with scheduling viewings for the top applicants

9. Encouraging Registration with Full Access Prompts

Scenario: A non-registered user browsing properties receives prompts to register for full access to platform features.

Steps:

1. The guest opens the platform homepage and begins browsing available listings.
2. When they click on a listing, basic details like rent, location, and preview photos are visible.
3. On attempting to access additional details, a pop-up message encourages them to register for full access to messaging, favorites, and contact features.
4. Interested in the added features, the guest creates an account.
5. Once registered, they gain access to full listing details, messaging features, and the ability to save listings.

2. List of main data items and entities

Data Entities

S.No.	Entities	Description
1	Owner	The individual or entity managing the property, responsible for creating listings, approving tenants, and handling maintenance requests.
2	Applicant	A potential tenant who expresses interest in renting a property by submitting an application to the owner for consideration. As per our use case, they would be limited to students at Hochschule Fulda.
3	Property	A real estate asset available for rent, including details like address, rent, and amenities. Properties are listed by owners and can be viewed by potential tenants.
4	Listing	An online advertisement for a property, providing information and images to attract student renters. Listings showcase available properties and key details. Interested applicants can apply to a listing.
5	Accommodation Request	Applicants can create their own Requests for searching accommodation which the Owners would be able to view. The applicants can include information and pictures about themselves and their requirements.
6	Lease	A formal rental agreement between the property owner and the applicant, detailing rental terms such as rent, duration, and obligations. Our platform would facilitate the process with a feature to sign a lease digitally.
7	Maintenance Request	A tenant's request for repairs or maintenance to address issues in the rented property, submitted to the owner.
8	Dashboard	A personalized interface for users (owners, applicants, or administrators) displaying key information such as property listings, applications, leases, and requests.

10	Trust Score	A score assigned to owners based on a number of factors including response time to a query, handling of maintenance requests and being reported by other users.
11	Reported	A status indicating that a listing or owner has been flagged for review due to possible issues or violations, requiring further investigation by an administrator.
12	Bidding	A competitive process where potential tenants place offers on a property, with the highest or most favorable bid often winning the rental opportunity.
13	Chat	A messaging feature allowing direct communication between tenants and owners, facilitating questions, negotiations, and updates related to property rentals.
14	Portfolio	A collection of information and documents provided by a rental applicant, such as personal details, proof of financial means, and references, to demonstrate suitability for a property.
15	Verification	The process of validating an applicant's or property owner's information and credentials, ensuring authenticity and trustworthiness for secure rental transactions. Since applicants are limited to students their email addresses can be used for this.
16	Recommendation System	The algorithm to rank the order of the listings a user would see. It can be done on the basis of the following factors: trust score of the owner, overlapping between the user's searching criteria and the listing, and how old the listing is.
17	Admin	A high-level user with full control over the application, responsible for managing users, properties, reported content, and overall system settings to ensure smooth operation and compliance.
18	Moderator	A user with permissions to review and manage reported content, handle user disputes, and assist with maintaining community standards, but with limited access compared to an Admin.
19	Guest	An unregistered or limited-access user who can browse property listings but cannot interact fully with the system (e.g., no ability to apply for properties, chat, or submit requests).

Users and Privileges

S.No.	User Type	Privileges
1	Applicant	<ul style="list-style-type: none"> 1. Create a User profile and upload photos and documents 2. Search and filter through the listings 3. Submit rental applications 4. Message the author of a listing 5. Review and sign a lease agreements 6. Submit and track a maintenance request 7. Add Favorites for listings 8. Create and manage Accommodation Requests
2	Owner	<ul style="list-style-type: none"> 1. Create, edit and delete their posted listings 2. Search and filter applications 3. Access a dashboard with details of all the properties they manage 4. Message the interested applicants 5. Track and sign a lease agreements 6. Review a maintenance request
3	Admin	<ul style="list-style-type: none"> 1. Able to manage and block users 2. Assist users with account recovery 3. Edit and Remove listings 4. Manage Moderators 5. Schedule application maintenance 6. Monitor site analytics and generate monthly/annual reports 7. Configure system settings 8. Manage in-app announcements and policy updates
4	Moderator	<ul style="list-style-type: none"> 1. Monitor listing description and images for inappropriate or inaccurate content

		<ol style="list-style-type: none"> 2. Able to report users and listings to the Admin 3. Verifying listings through preliminary checks for inaccurate images or data 4. Monitor expired listings 5. Track suspicious activity
5	Guest	<ol style="list-style-type: none"> 1. Browse available properties with basic details and photos. 2. Search and Filter Properties 3. Access detailed property information, amenities, and availability. 4. Receive prompts encouraging registration for full feature access.

3. NEW: UI Mockups and Storyboards (high level only)

3.1 Use Case 1

Welcome to Fulda Student Hub

Login Page

Username Or Email:

Password:

Login

Welcome to Fulda Student Hub [Home](#) [Message](#) [Favorite](#) [Profile](#) [Logout](#)

Location or Postal Code Room Type Price Range Advanced Search

Search

Price Range
Min: _____ Max: _____

Room Type
 Single Apartment
 Shared Apartment
 Private Room

Advanced Search
 Shower Heater
 Kitchen Balcony

News & Announcements

Why join Fulda Student Hub.

Register & get access to premium features.

Welcome to Fulda Student Hub [Home] [Message] [Favorite] [Profile] [Logout]

Search for rooms... 

One room in a Shared apartment with private balcony. 

Rent: 450 Euro Area: 22 sq mtr

Posted by: Mr. Schidmt

One room in a Shared apartment with private bathroom. 

Rent: 300 Euro Area: 16 sq mtr

Posted by: Mrs. Anna

Private room in a studio apartment. 

Rent: 700 Euro Area: 30 sq mtr

Posted by: Mr. Roger

One room in a Shared apartment. 

Rent: 450 Euro Area: 12 sq mtr

Posted by: Mr. Caeser

< 1 2 3 4 5 >

3.2 Use Case 2

Welcome to Fulda Student Hub [Home] [Message] [Favorite] [Profile] [Logout]

Beautiful room in a shared apartment, private balcony.

Reviews

Roald Dahl posted...  ****
Mr. Schidmt is good person.
Room is fantastic [...more](#)

Required Document

1. Enrollment Certificate
2. Residence Permit

Mr. Schidmt

Contact Save
Apply for Property

Size: 20m² Total Rent: 450 €

Cost

Rent	400 €
Extra Charges	20 €
Warm Rent	30 €
Transfer Agreement	N.A.

Address Leipziger strasse
30A 36039 Fulda
[Open maps](#)

Available from 05.12.2024

Reviews from tenants
Required Documents

About

3.3 Use Case 3

Welcome to Fulda Student Hub [Home](#) [Message](#) [Favorite](#) [Profile](#) [Logout](#)

Mr. Schmidt Verified **Beautiful room in a shared apartment, private balcony.**

Application Form [Go Back](#)

Mr. Schidmt

[Contact](#) [Save](#)

[Apply for Property](#)

Size: 20m² Total Rent: 450 €

Cost

Rent	400 €
Extra Charges	20 €
Warm Rent	30 €
Transfer Agreement	N.A.

Address Leipziger strasse 30A 36039 Fulda [Open maps](#)

Available from 05.12.2024

Please fill in your details.

Full Name:

Student ID:

Contact Number:

Current Address:

Please upload your documents.

Enrollment Certificate: (Required)

Government ID: (Required)

Financial Proof: (Required)

Other Documents:

I agree that the details provided are authentic. If fail to certify the necessary actions are to be taken.

I agree with the Act 41 & 43 German resident law for residence for tenant.

Apply Now

Welcome to Fulda Student Hub [Home](#) [Message](#) [Favorite](#) [Profile](#) [Logout](#)

You have successfully applied for the property.

[Go Back to Searching](#)

3.4 Accessing and Updating listing as Landlord

Welcome to Fulda Student Hub

Login Page

Username Or Email:

Password:

Login

Welcome to Fulda Student Hub [Home](#) [Message](#) [My Ads](#) [Profile](#) [Logout](#)

Welcome Mr Schmidt. What would you like to do today.

[Create New Listing](#)

[My Listings](#)[Raise an Issue](#)[Register for Bidding](#)[New Requests](#)[View Tenants](#)[Documents](#)[View Past Tenants](#)[See Your Properties](#)

Welcome to Fulda Student Hub

[Home](#) [Message](#) [My Ads](#) [Profile](#) [Logout](#)

My Listings

Private Room near ZOB Fulda with balcony.

Active

Welcome to my apartment. This is a room for 1 person who prefers privacy. The room is 24 square meters and comes with a balcony. There is strictly no pet policy. In case of emotional support pets like dinosaurs, a legal permit is required.

34A,
Stadtscloss,
36037 Fulda

[Update](#)

[Delete](#)

Posted 1 month ago

Sharing Apartment near Hochschule Fulda.

Active

Welcome to my apartment. This is a room for 1 person who prefers privacy. The room is 24 square meters and comes with a balcony. There is strictly no pet policy. In case of emotional support pets like dinosaurs, a legal permit is required.

35A,
Hochschule
Fulda, 36037
Fulda

[Update](#)

[Delete](#)

Posted 2 month ago

[Go Back](#)

[Try our Bidding System](#)

Welcome to Fulda Student Hub

[Home](#) [Message](#) [My Ads](#) [Profile](#) [Logout](#)

**Thank You.
Your Ad will be live shortly.**

[Go Back to Listing](#)

4. NEW High-level Architecture and technologies used

4.1 Technology Stack and High Level Architecture Diagram

Hosting: Amazon Web Services

Back-end Framework: Node.Js

Back-end Language: Javascript

Front-end Library: React 18

Front-end Language: Javascript, HTML5, CSS3, Bootstrap

Code Editor: Visual Studio Code

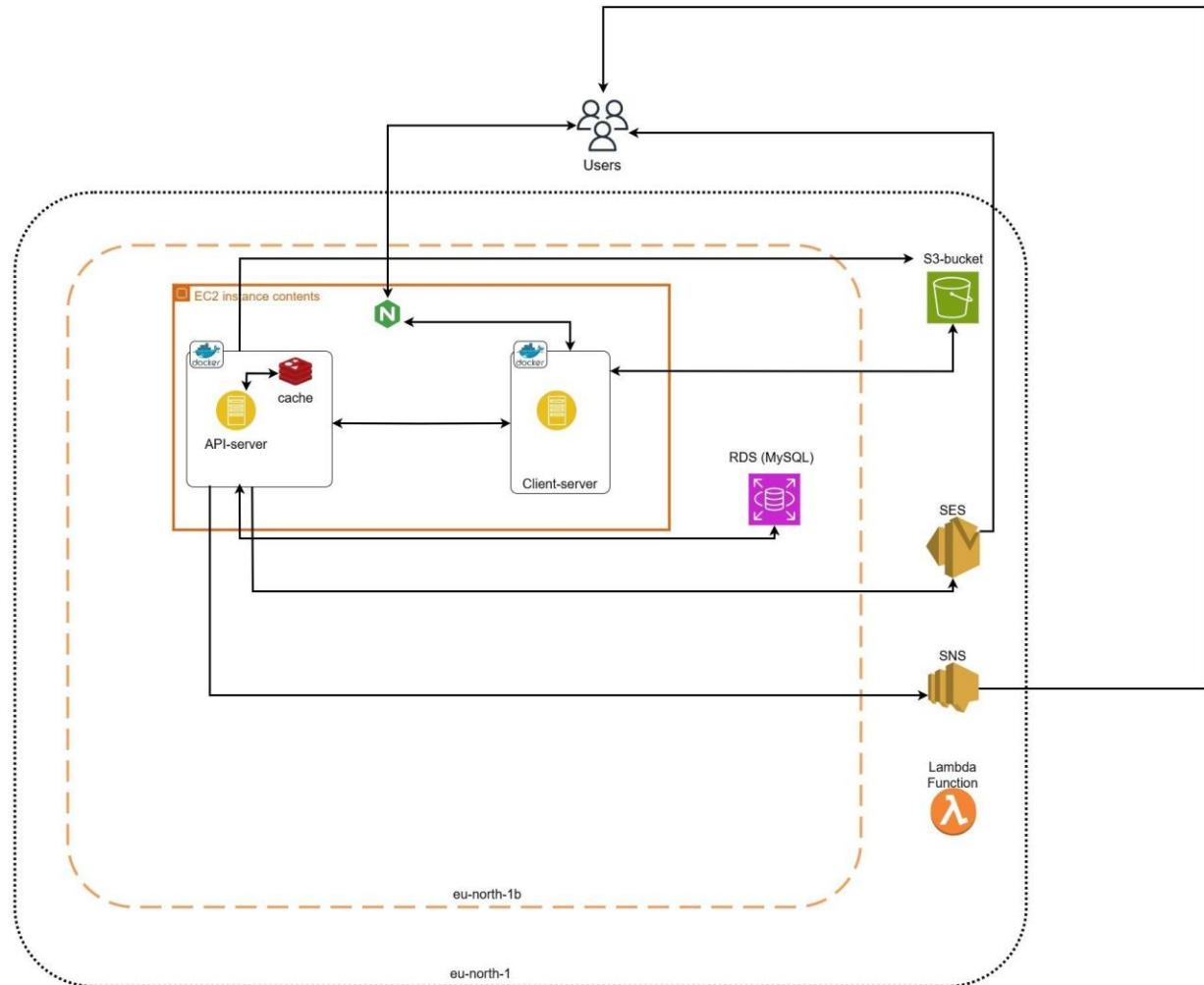
Target Web browsers: Google Chrome, Mozilla Firefox,

Database: MySQL

Socket Framework: Socket.io

FaaS: AWS Lambda

Deployment Support: Docker



4.2 Database Organization

(PK = Primary Key, FK = Foreign Key)

1. User

- **PK:** user_id
- Email
- Password
- user_type
- created_at
- updated_at

2. Landlord

- **PK:** landlord_id
- name
- phone_number
- address
- trust_score
- profile_picture
- created_at
- updated_at

3. Student

- **PK:** student_id
- first_name
- last_name
- student_id_number
- profile_picture
- university
- created_at
- updated_at

4. Property

- **PK:** property_id
- **FK:** landlord_id [Landlord.landlord_id]
- address
- rent
- amenities
- created_at
- updated_at

5. Listing

- **PK:** listing_id
- **FK:** property_id [Property.property_id]
- title
- description
- images
- status
- created_at
- updated_at

6. Application

- **PK:** application_id
- **FK:** listing_id [Listing.listing_id]
- **FK:** student_id [Student.student_id]
- status
- message
- created_at
- updated_at

7. Accommodation_Request

- **PK:** request_id
- **FK:** student_id [Student.student_id]
- details
- images
- created_at
- updated_at

8. Lease

- **PK:** lease_id
- **FK:** student_id [Student.student_id]
- **FK:** property_id [Property.property_id]
- start_date
- end_date
- rent_amount
- status
- created_at
- updated_at

9. Maintenance_Request

- **PK:** request_id
- **FK:** lease_id [Lease.lease_id]
- description
- status
- created_at
- updated_at

10. Report

- **PK:** report_id
- **FK:** reported_by [User.user_id]
- **FK:** target_id [User.user_id]
- reason
- status
- created_at
- updated_at

11. Conversation

- **PK:** conversation_id
- **FK:** landlord_id [Landlord.landlord_id]
- **FK:** student_id [Student.student_id]
- created_at
- updated_at

12. Message

- **PK:** message_id
- **FK:** conversation_id [Conversation.conversation_id]
- **FK:** sender_id [User.user_id]
- content
- created_at

13. Portfolio

- **PK:** portfolio_id
- **FK:** student_id [Student.student_id]
- document_url
- created_at
- updated_at

14. Bidding

- **PK:** bid_id
- **FK:** listing_id [Listing.listing_id]
- **FK:** student_id [Student.student_id]
- bid_amount
- status
- created_at
- updated_at

15. Verification

- **PK:** verification_id
- **FK:** user_id [User.user_id]
- status
- created_at
- updated_at

4.3 API Endpoints

1. Authentication and Authorization

- POST `/auth/login`
 - i. Logs in a user by verifying their credentials (e.g., email and password) and returns an access token for further authenticated requests.
- POST `/auth/register`
 - i. Allows a new user to create an account by submitting necessary details such as name, email, and password.
- POST `/auth/logout`
 - i. Logs out the current user by invalidating their session or token.
- POST `/auth/refresh-token`
 - i. Generates a new access token using a valid refresh token, ensuring continued authentication without requiring login

2. Resources: All the below resources can have GET, POST, PATCH, PUT and DELETE endpoints, based on the requirements.

- `/users`: Retrieves all types of users. Can be used to query for a particular id.
 - i. `/users/profile`: Retrieves the profile of the currently authenticated user.
 - ii. `/users/roles`: Retrieves a list of roles available for users (e.g., admin, applicant, owner, moderator).
- `/properties`: Retrieves a list of all properties, with options for filtering (e.g., location, price, type)
- `/listings`: Retrieves a list of all property listings, including their availability status.
 - i. `/listings/recommended`: Returns a list of recommended property listings based on user preferences or past behavior.
 - ii. `/listings/status`: Retrieves all available statuses for listings (e.g., available, sold, under contract)
- `/bookings`: Retrieves all scheduled property viewings or appointments for both owners and applicants.
 - i. `/bookings/properties/:id`: Retrieves bookings related to a specific property.
- `/favorites`: Retrieves a list of all properties marked as "favorites" by the current user.
- `/applications`: Retrieves all the applications submitted by the current user.
- `/accommodation-requests`: Retrieves all the accommodation requests posted by the current user.
- `/documents`: Retrieves a list of documents uploaded by the current user.

3. Search

- `/search/properties`: Searches for properties based on user-specified filters.
- `/search/users`: Searches for users by name or role (e.g., landlords, tenants)

4. System and Configuration

- `/settings`: Retrieves system-wide or user-specific settings. For the Admin, it would also show app-wide settings.
- `/health`: Checks the health status of the API to ensure the system is operational.

5. Miscellaneous

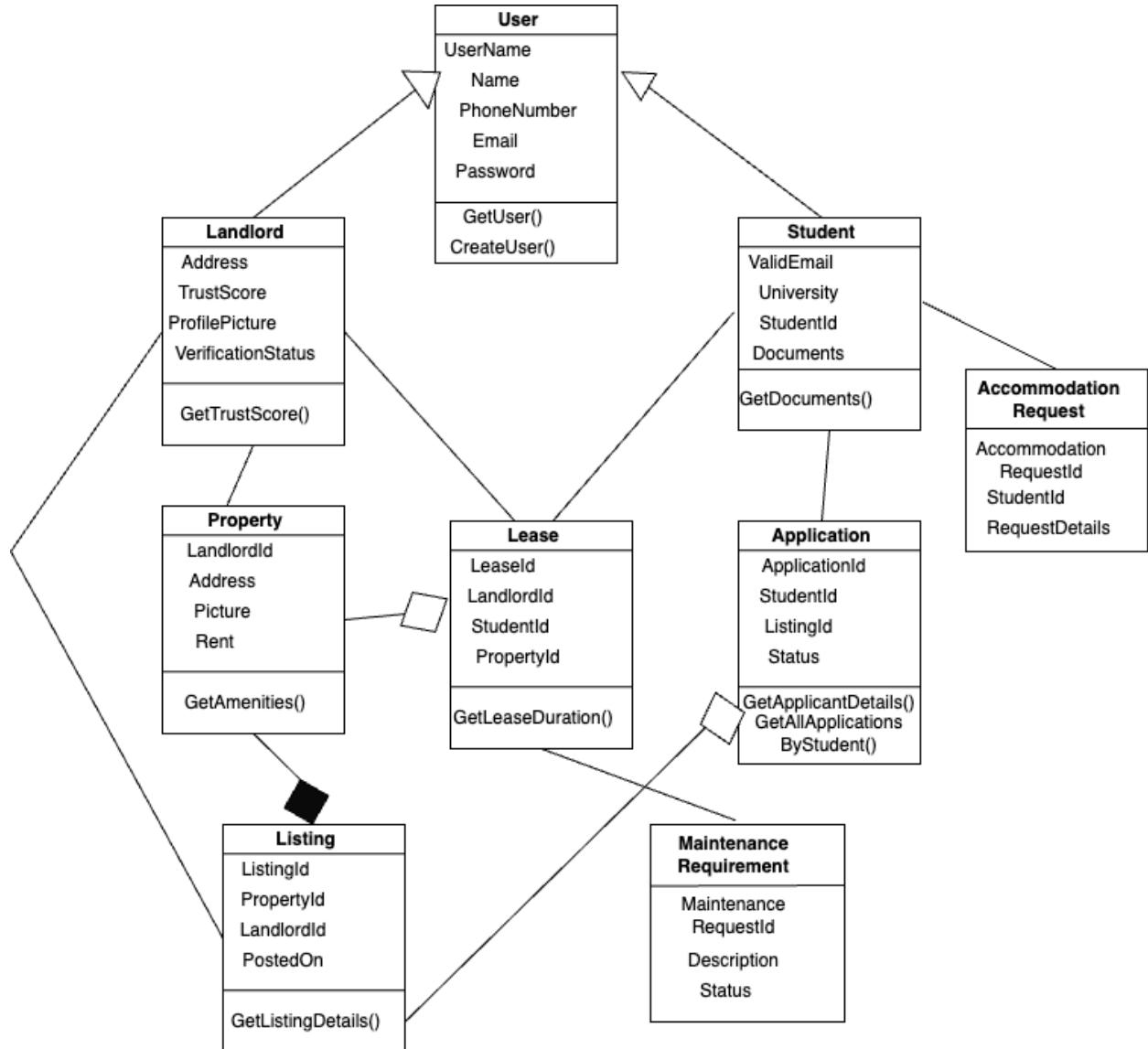
- `/analytics/properties`: Retrieves analytics for properties, such as views, inquiries, or sales trends.
- `/analytics/applications`: Retrieves analytics for the applications applied and response received by a student
- `/messages`: Retrieves a list of all messages of the current user
- `/notifications`: Retrieves all notifications for the current user (e.g., appointment reminders, offers).

Guidelines for the above endpoints

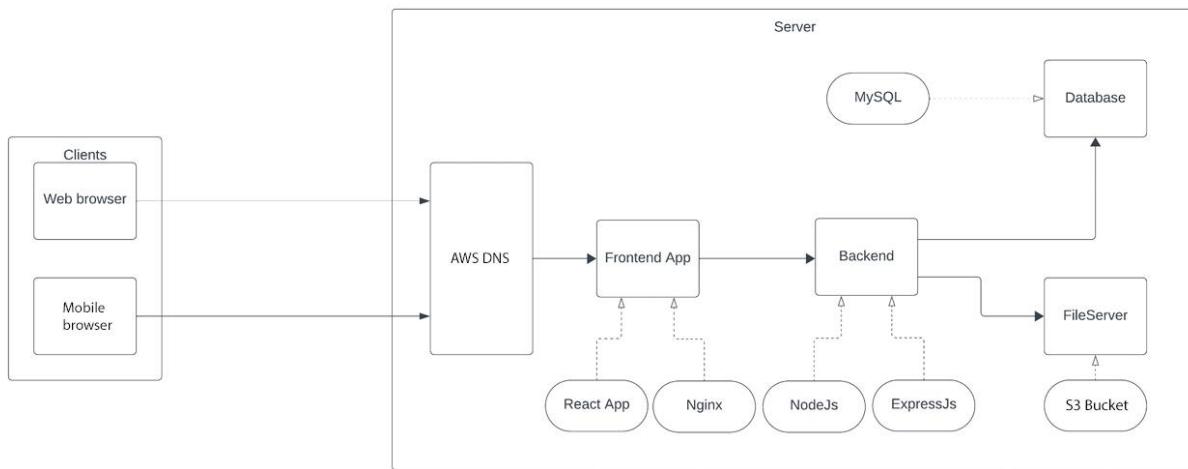
- Pagination will be included for endpoints returning large datasets (e.g., GET `/users?page=1&limit=10`).
- JWT Authentication would be added for sensitive endpoints to improve security.

5. High Level UML Diagrams

5.1 Class Diagram



5.2 Deployment Diagram



6. Key Risks

1. Skills Risks:

While team members have prior experience in software development through academic projects and internships, there is a risk that our collective expertise may not fully cover all aspects of the chosen solution. To mitigate this, team members will actively acquire the required skills, including programming languages and frameworks, through online resources and knowledge sharing within the group.

2. Schedule Risks:

Improper estimation of tasks and deadlines can result in schedule risks, potentially leading to project delays or failure. These risks arise from inaccurate deadline predictions and insufficient resource tracking. To manage this, the team will rely on detailed planning documents, including specifications and project plans, breaking them into smaller components. Regular task analysis will help identify critical paths and dependencies for better schedule management.

3. Technical Risks:

The use of outdated or poorly maintained frameworks, plugins, or dependencies may affect the project's functionality and performance. To mitigate these risks, the team will use modern, well-maintained frameworks, tools, and plugins while adhering to official documentation to ensure consistency and reduce maintenance challenges.

4. Teamwork Risks:

Shared responsibilities among team members may lead to some individuals taking on extra work to compensate for those who underperform, potentially creating friction within the group. To prevent this, task responsibilities and individual accountability will be clearly defined to ensure equal contributions and maintain team cohesion.

5. Legal/Content Risks:

Incorporating advanced technologies requires proper acknowledgment of authors and developers of APIs, plugins, or software snippets to avoid copyright issues. To address this, the team will engage with open-source communities whenever possible and provide proper credits and acknowledgments as required.

7. Project Management

This document has been compiled and completed as a result of our daily meetings and contributions. We are using WhatsApp and Slack for our daily conversations; Google meet for our team meetings and Google documents for contributions. GitHub will be used as our project management tool and tasks will be divided as per the previous knowledge and experience of our team members. A deadline will be assigned to each task, and it will be easier to track which tasks are currently in progress, which of them have been completed and which are pending. This will help us achieve the entire project work with ease.



Global Distributed Software Development – AI5088 (WiSe24/25)

Master Team Project – Fall 2024

“Fulda Student Hub”

Milestone 3
“Part 1 Review Summary”

March 07, 2025

Supervisor:

Prof. Dr. Todtenhöfer, Rainer

Team # 2

Team Members		
Member Name	Email	Role
Huzaifa Khatri	Huzaifa.khatri@informatik.hs-fulda.de	Team Lead & Backend Affinity
Shafi Shaik	Shafi.shaik@informatik.hs-fulda.de	Github Master
Muhammad Hassan	Muhammad.hassan@informatik.hs-fulda.de	Backend Lead
Divyansh Dahiya	Divyansh.dahiya@informatik.hs-fulda.de	Backend Affinity
Devansh Negi	Devansh.negi@informatik.hs-fulda.de	Frontend Affinity
Aniq Ahmed	Aniq.ahmed@informatik.hs-fulda.de	Frontend Lead

Summary of feedback and tasks to do

The feedback we received stated an overall good progress and only one functionality was missing, the admin dashboard which was rectified and implemented with highest priority by the subsequent week. Further on, we started focusing on additional P1 functions that were unique functionality and addition to our project. First, we streamlined the Tenant Application Process, allowing tenants to easily apply for properties with a simplified and user-friendly interface. We also implemented Multiple Listings for a Single Property, enabling landlords to post different units of the same property, improving visibility and options for prospective tenants. The Real-Time Bidding Feature was integrated to facilitate a dynamic bidding environment for available properties, allowing tenants to place bids and landlords to review offers instantly.

Next, we developed a Digital Lease Agreement, allowing tenants and landlords to sign contracts electronically, improving convenience and efficiency. To further enhance scheduling, we introduced an Appointment Scheduling and Custom Calendar feature, providing tenants and landlords with a smooth and flexible way to arrange property viewings and meetings. Additionally, we implemented a Landlord Trust Score system, where tenants can evaluate landlords based on various criteria, ensuring transparency and trust in the platform.

The Student Review Feature was created, allowing students to review their experiences, helping future tenants make informed decisions. Finally, we added a Nearest Utilities Feature (Map), which displays essential utilities such as schools, shops, and transport hubs, helping tenants assess the convenience of a property's location. These features collectively improved the user experience, made the platform more interactive, and enhanced the overall reliability of the rental process.

List of tasks the team chose to focus on and implement for final delivery

- Signup / Signin
- Search (Including search field validation)
- Filtering
- Search Details
- Messaging / Contact
- Data Upload
- Dashboards (User, Admin)
- Content Moderation and Approval
- Tenant Application Process
- Multiple Listing for Single Property
- Real-Time Bidding
- Digital Lease Agreement
- Appointment Scheduling and Custom Calendar
- Landlord Trust Score
- Student Review
- Nearest Utilities
- Map Implementation
- Blockchain Payment Implementation (Mock payment setup)

List of final product P1 functions agreed at the meeting:

- Tenant Application Process
- Multiple Listing for Single Property
- Real-Time Bidding Feature
- Digital Lease Agreement
- Appointment Scheduling and Custom Calendar
- Landlord Trust Score
- Student Review Feature
- Nearest Utilities Feature (Map)



Global Distributed Software Development – AI5088 (WiSe24/25)

Master Team Project – Fall 2024

“Fulda Student Hub”

Milestone 4

January 23, 2025

Supervisor:

Prof. Dr. Todtenhöfer, Rainer

Team Members		
Member Name	Email	Role
Huzaifa Khatri	Huzaifa.khatri@informatik.hs-fulda.de	Team Lead & Backend Affinity
Shafi Shaik	Shafi.shaik@informatik.hs-fulda.de	Github Master
Muhammad Hassan	Muhammad.hassan@informatik.hs-fulda.de	Backend Lead
Divyansh Dahiya	Divyansh.dahiya@informatik.hs-fulda.de	Backend Affinity
Devansh Negi	Devansh.negi@informatik.hs-fulda.de	Frontend Affinity
Aniq Ahmed	Aniq.ahmed@informatik.hs-fulda.de	Frontend Lead

Revision History				
Member Name	Date Submitted	Date Revised	Remarks	Version
Huzaifa Khatri	23.01.2025	-	-	1.0

Contents

1. Product Summary.....	4
1.1 All Product Functions:	4
1.2 Unique Selling Propositions (USPs).....	5
1.3 Marketing Channels	6
2. Usability Test Plan.....	7
2.1 Test Objectives.....	7
2.3 Usability Task Description	8
2.4 Plan	10

1. Product Summary

Fulda Student Hub is the ultimate solution for Fulda students in need of fast, secure, and reliable housing. As the student population grows, our platform focuses exclusively on student accommodation, streamlining the rental process for a user-friendly experience. With our **Bidding Functionality**, landlords can quickly select tenants with real-time bids, making urgent tenant searches simple and efficient. **Lease Agreements** are provided digitally, offering proof of contract for peace of mind. Our **Trust Score** feature uses a customized rating system to evaluate landlords, ensuring prospective tenants always make informed choices.

Stay connected with ease through the **Group Chat**, allowing multiple people to communicate at once. Organize your schedule effortlessly with the **Calendar View for Appointments**, providing a clear, intuitive interface to manage all your housing-related appointments. Plus, discover nearby **Nearest Utilities** like supermarkets, hospitals, and bus stops, making life in Fulda even more convenient. Verified by active moderators and designed to eliminate outdated listings, Fulda Student Hub ensures safe and efficient housing experience for students, especially those new to the local market. With a scalable, growing platform, we're building a stronger community for students, landlords, and everyone in between.

1.1 All Product Functions:

- **Homepage:** Displays key information and navigation links for quick access to features.
- **Search (Including Search Field Validation):** Enables users to search for properties with input validation.
- **Search Results:** Shows property listings based on search criteria with essential details.
- **Filtering:** Refines search results by price, location, property type, and amenities.
- **Search Details and Maps (If Applicable):** Displays detailed property info and a map (if applicable).
- **Messaging/Contact Agent/User (If Applicable):** Allows communication between users and agents/landlords for inquiries or scheduling.
- **Data Upload:** Enables landlords to upload property listings with necessary details, images, and documents.
- **Dashboards (User, Admin):** Displays saved properties, messages, and appointments. Allows management of listings, and platform activity.
- **Bidding Functionality:** Landlords can access a real-time bidding feature for accommodations, allowing quick and urgent tenant selection when needed.
- **Lease Agreement:** A digital copy of the lease agreement, serving as proof of contract between the parties.
- **Trust Score:** A customized rating system that evaluates landlords to provide better choices for prospective tenants
- **Group Chat:** Allows messaging between more than two people, enabling group conversations.

- **Calendar View for Appointments:** An intuitive user interface that provides a better view of all scheduled appointments for users.
- **Nearest Utilities:** Users can view nearby utilities, such as supermarkets, fuel stations, hospitals, schools, bus stops, etc.

Product URL: [Fulda Student Hub](#)

Target Audience

Our primary target audience consists of Hochschule Fulda students as well as landlords within the Fulda area. By focusing on this community, **Fulda Student Hub** aims to become the ultimate platform for students seeking reliable and secure housing. Our platform offers students a streamlined rental process, ensuring access to updated listings, secure contracts, and tools for better decision-making. For landlords, it offers a simplified way to find reliable tenants, access real-time bidding, and ensure transparency in the rental process. Together, we foster a secure and efficient housing experience for all.

1.2 Unique Selling Propositions (USPs)

1. Exclusive Hochschule Fulda Integration

Fulda Student Hub is designed specifically for Hochschule Fulda students ensuring a secure and trusted environment within the university community. This exclusivity guarantees that the platform is used by the right audience, enabling focused collaboration and engagement between students and landlords.

2. Bidding Functionality

Landlords can access a real-time bidding feature, allowing for quick tenant selection when urgent housing needs arise. This feature ensures a seamless and efficient rental process for both parties.

3. Trust Score

Our customized rating system evaluates landlords, providing students with valuable insights to make informed housing decisions.

4. Lease Agreement

A digital copy of the lease agreement is provided for each contract, ensuring both students and landlords have clear proof of their rental arrangements.

5. Group Chat

Enabling seamless communication, the group chat feature allows multiple users to discuss, negotiate, and share information, fostering better collaboration and transparency.

6. Calendar View for Appointments

An intuitive interface lets users manage and view all their housing appointments with ease, ensuring no meeting is missed.

7. Nearest Utilities

Students can quickly identify nearby utilities such as supermarkets, fuel stations, hospitals, schools, bus stops, and more, making it easier to settle into their new homes.

1.3 Marketing Channels

1. Campus Outreach and Awareness Campaigns

We will engage in on-campus marketing initiatives to raise awareness and generate interest among our target audience. These efforts include distributing flyers, hosting information sessions, and partnering with student organizations to promote **Fulda Student Hub** as the go-to platform for student housing.

2. Social Media Campaigns

Utilizing platforms such as Instagram, Facebook, and Twitter, we will share updates, testimonials, and success stories to increase visibility. Social media will be used to showcase platform features, engage with users, and encourage them to explore the site.

With **Fulda Student Hub**, we're building a stronger, more connected community that simplifies the search for student housing, making it safer and more efficient for everyone involved.

2. Usability Test Plan

2.1 Test Objectives

The primary objective of this usability test is to evaluate the “**Upload Student Application**” feature within the Fulda Student Hub web application. Specifically, the test aims to assess the ease of use, clarity of instructions, and overall user satisfaction when students upload their application documents. By identifying any usability issues or pain points in the upload process, the goal is to enhance the user experience, streamline the application process, and ensure that students can efficiently submit all required documentation without frustration or error. This evaluation will help in refining the interface and functionality to better serve the target user base—university students seeking apartment rentals.

2.2 Test Background and Setup

System Setup: The usability test will be conducted on the Fulda Student Hub web application, accessible via the URL: <https://fulda-student-hub.publicvm.com/app>. Testing will be performed using the latest versions of **Google Chrome** and **Mozilla Firefox** browsers on desktop and laptop environments to ensure compatibility and performance across commonly used platforms.

Starting Point: Participants will begin the test by logging into their student accounts on the Fulda Student Hub. Upon successful login, they will select any available Listing and navigate to where they can choose to either **Contact the Landlord** or **Apply for a Listing**. For this test, participants will focus on the **Apply Now** option, which directs them to the **Application Form**.

Intended Users: The target participants for this usability test are university students who are actively seeking to rent apartments through the Fulda Student Hub. These users are expected to have varying levels of technical proficiency, ranging from novice to intermediate users who are comfortable navigating web applications but may have different experiences with document upload functionalities.

URL of the System: The specific URL to be tested is: <https://fulda-student-hub.publicvm.com/app/home>

What is to be Measured: This test will focus on **user satisfaction** related to the upload feature. User satisfaction will be evaluated using a **Likert-scale questionnaire** administered after the completion of the upload task. The questionnaire will measure perceptions of ease of use, clarity of instructions, and overall satisfaction with the upload process.

2.3 Usability Task Description

Instructions to the Tester:

1. Preparation:

- Ensure you have access to a stable internet connection and are using either Google Chrome or Mozilla Firefox on a desktop or laptop.
- Log into your student account on the Fulda Student Hub using your credentials.

2. Task Execution:

- Select any available Listing after logging in.
- Select the **Apply Now** option.
- Fill out the required details, including your name, address, and other necessary information.
- Upload the following documents:
 - **Government ID** (JPEG, JPG, PNG, GIF, AVIF, or PDF; required, 1 attachment)
 - **Financial Proof** (JPEG, JPG, PNG, GIF, AVIF, or PDF; required, 1 attachment)
 - **Enrollment Certificate** (JPEG, JPG, PNG, GIF, AVIF, or PDF; required, 1 attachment)
 - **Other Documents** (optional; multiple attachments allowed)
- Agree to the terms and conditions check.
- Submit the completed application form.
- Upon successful submission, you should see an **Application Successful** confirmation message.

3. Post-Task Assessment:

- After completing the upload process, please fill out the following Likert-scale questionnaire based on your experience.

Measuring Effectiveness: Effectiveness will be measured by the number of participants who successfully upload all required documents without encountering errors or requiring assistance during the process.

Measuring Efficiency: Efficiency will be assessed by recording the time taken to complete the upload process and the number of steps or clicks required to successfully submit the application.

Likert Scale Questions: Please indicate your level of agreement with the following statements regarding your experience with the application upload feature:

1. Clarity of Instructions:

- “*The instructions for uploading the application were clear and easy to follow.*”

- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Neutral
- 4 - Agree
- 5 - Strongly Agree

2. Ease of Use:

- “*I found the upload process efficient and straightforward.*”

- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Neutral
- 4 - Agree
- 5 - Strongly Agree

3. Overall Satisfaction:

- “*Overall, I am satisfied with the application upload feature.*”

- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Neutral
- 4 - Agree
- 5 - Strongly Agree

Additional Notes:

- **Test Moderation:** The test will be moderated to observe participants in real-time, allowing for immediate feedback and clarification of any issues encountered during the upload process.
- **Recording:** Sessions will be recorded with participants' consent to facilitate detailed analysis of user interactions and behaviors.
- **Participant Diversity:** Efforts will be made to include participants with diverse technical backgrounds to ensure comprehensive usability insights.

By conducting this usability test, we aim to identify and address any barriers that students may face while uploading their applications, thereby enhancing the overall functionality and user experience of the Fulda Student Hub.

2.4 Plan

Test Objective

The goal of this QA test is to test one feature on the website **Fulda Student Hub**, which is a web project done by six of the master students for the course “Global Distributed Software Development”. Fulda Student Hub is an online platform exclusive to students at Fulda University of Applied Sciences. Users can register and login, browse and search for available accommodations while other residents of Fulda city can play the role of being landlords if they would like to rent out their property(s). The feature which will be looked upon in this test is searching for suitable accommodation as a student and submitting rental application. The reason for this being that it is one of the main functions of the website which is very likely to be used by every user or at least the vast majority.

Hardware and software setup

Tested software:

- **Fulda Student Hub** website – URL: <https://fulda-student-hub.publicvm.com/app> - running on a remote EC2 instance on AWS.

Hardware used for testing:

- Mozilla Firefox browser 64 bit for Windows and Mac
- Google Chrome browser 64 bit for Windows and Mac
- Mozilla Firefox browser Android and iOS
- Google Chrome browser for Android and iOS



Global Distributed Software Development – AI5088 (WiSe24/25)

Master Team Project – Fall 2024

“Fulda Student Hub”

**Final Application View
(Screenshots)**

March 08, 2025

Supervisor:

Prof. Dr. Todtenhöfer, Rainer

Team # 2

Tenant Dashboard



Fulda Student Hub

[Home](#) [Applications](#) [Bids](#) [Messages](#) [Profile](#) [Logout](#)

Upcoming Meetings

Meeting with **Huzaifa Is Landlord**

Mar 07, 2025, 10:00 AM

SCHEDULED

Meeting with **John Player**

Mar 09, 2025, 10:15 AM

SCHEDULED

Find Your Perfect Accommodation

Location or Postal Code

Room Type

€0 - €2000

Advanced Search

Let's Go

Featured Listings

Featured Listings



Single Beautiful Apartment
Rent: 400 €

Active Biddings

No Active Biddings



Single apartment for rent in f...
Rent: 470 €

Login



Fulda Student Hub

Login

Welcome back! Please log in to continue.

Username

Password

[Login](#)

[Don't have an account? Register](#)

Registration



Fulda Student Hub

Register

Create an account to start using Fulda Student Hub

Username

Enter your username

Email Address

Enter your email

Password

Enter your password

Confirm Password

Re-enter your password

User Type

Student

Register

[Already have an account? Log in](#)

Landlord Dashboard



Fulda Student Hub

Home

Messages

Profile

Logout

Welcome, John Player

What would you like to do today?



Create New Properties



View Properties



My Listings



Select Requests



My Biddings

Schedule & Manage Meetings

Student

Select a student

Date

dd/mm/yyyy

Time

--:-- --

Schedule Meeting

Messages



Fulda Student Hub

[Home](#)[Messages](#)[Profile](#)[Logout](#)

Conversations

Huzaifa Khatri

We will get back to you s...

John Cena

Ich bin gut. Und du?

Big Show

I'm also good. thanks for ...

Mark Henry

Congratulations! 🎉 You h...

Student Tester

Oh and what are the ameni...

Huzaifa Khatri

Hello, I want more information regarding your single apartment property

Hello. Thankyou for contacting us.

Can you provide me more details please

We will get back to you shortly

User Profile

**Huzaifa Khatri**

Email: Student.Fulda@hs-fulda.de

Phone: 014627182339

Send

Custom Search with Filters



Fulda Student Hub

[Home](#)[Applications](#)[Bids](#)[Messages](#)[Profile](#)[Logout](#)

Search Results

Applied Filters:

Room Type: Studio Apartment

Price Range: €0 - €545

Parking



Single apartment for rent in f...
€470 €



Single Student Apartment Fully...
€350 €

< 1 >

Admin Dashboard



Fulda Student Hub

[Home](#)

[Profile](#)

[Logout](#)

Welcome, Administrator FSD

What would you like to do today?



[View All Properties](#)



[View All Listings](#)