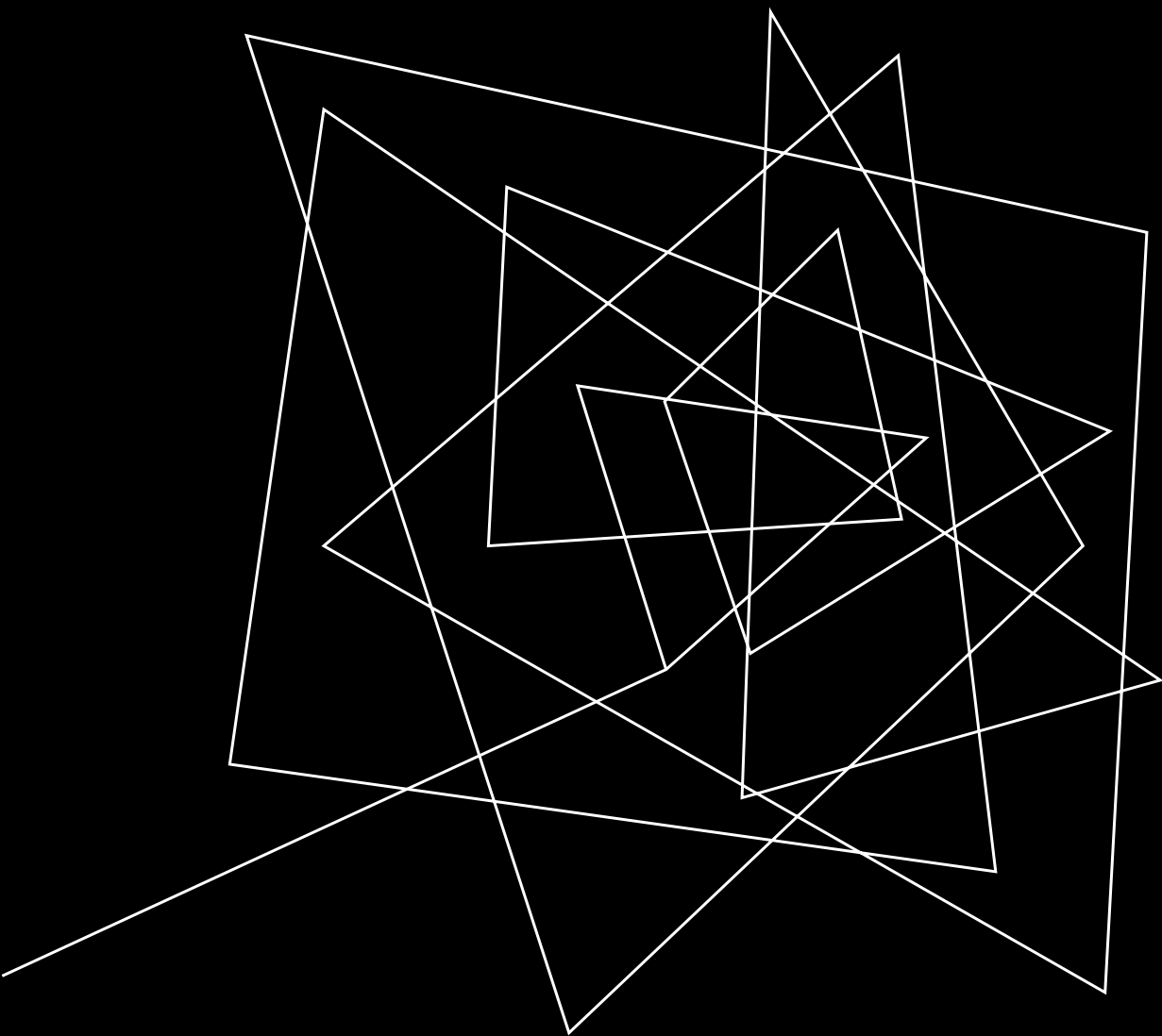# STUDENT HIVE

CS 691 – Computer Science Capstone Project

AGENDA

AGENDA

- Review progress towards project deadlines and milestones and discuss any delays or challenges encountered and identify solutions.

- Ensure alignment on the development progress and tasks completed and address any roadblocks hindering development and strategize solutions.

- Mark important submission dates and deadlines for the project deliverables on the shared excel sheet with everyone's schedules.

- Review presentation topics to ensure they align with project goals and discuss iterative updates to the presentation and delegate tasks accordingly.

- Brainstorm and study through personas to understand client requirements thoroughly and Identify and prioritize the necessary features and functionalities from the client's perspective.

- Discuss potential risks associated with the project and their impact and Strategize mitigation plans to address identified risks effectively.

- Emphasize the importance of interaction, attendance, cooperation, teamwork and discuss the significance of individual contributions and attention to detail for project success.

- Sync on the next steps for development, including task assignments, deadlines and Outline action items and responsibilities for each team member.

- Recap key discussion points and action items also confirm the date and time for the next meeting, if necessary and ensure open communication and collaboration among team members.

TEAM MEMBERS & ROLES

MEET OUR TEAM

SMIT

FRONT END
DEVELOPER

SUJAN SIDDARTH

TESTER

KIRAN KUMAR

FULL STACK
DEVELOPER

YASHKUMAR

DATABASE
ADMINSTRATOR

PARTH

PROJECT MANAGER

SIDDHARTHKUMAR

DATA ANALYST

RAJ KOUSHIK

FULL STACK
DEVELOPER

IMPROVEMENTS

PROFESSOR FEEDBACK

- In the slide titled 'Improvements Made from Professor Feedback', add bullet points detailing the feedback received and the implemented improvements.

- In the 'Architecture Diagram' slide, specify which Architecture Diagram is being presented.

- Ensure that the 'Algorithms', 'Completed/Committed Ratio', and 'Team's Historical Velocity (Average)' slides are included in the presentation as per the checklist.

- Ensure that you are utilizing the user stories syntax by including 'so that' after the functionality. For example, 'As a [user], I want [functionality], so that [benefit from it]'.

- Ensure that your test cases include User Story IDs to link them with the corresponding stories, indicating which stories the tests belong to.

- Note that user stories in Jira are created using 'Issue Type,' and tasks are created using the 'Task' type.

- Ensure that the 'Team Velocity Chart', 'Sprint Burndown Chart', 'Completed/Committed Ratio', and 'Team's Historical Velocity (Average)' slides are included in the presentation as per the checklist.

- Make sure to work on the Retrospective and ensure that all team members are present during the Retrospective meeting.

- Ensure that you follow the order from the slide checklist present in your checklist workbook.

IMPROVEMENTS MADE FROM PROFESSOR FEEDBACK

- Specified the Architecture Diagram being presented (e.g. System Architecture, Deployment Architecture, etc.)

- Included slides for 'Algorithms', 'Completed/Committed Ratio', and 'Team's Historical Velocity (Average)' as per the checklist

- Utilized the user stories syntax by including 'so that' after the functionality (e.g. 'As a [user], I want [functionality], so that [benefit]')

- Linked test cases with corresponding User Story IDs to indicate which stories the tests belong to

- Included 'Team Velocity Chart', 'Sprint Burndown Chart', 'Completed/Committed Ratio', and 'Team's Historical Velocity (Average)' slides as per the checklist

- Ensured all team members were present during the Retrospective meeting

- Followed the order from the slide checklist present in the checklist workbook

PROBLEM STATEMENT

PROBLEM STATEMENT

In the current landscape of student housing, there exists a lack of secure and convenient platforms tailored specifically to the needs of students seeking shared living arrangements. Many students struggle to find reliable and trustworthy accommodation options that align with their preferences, leading to frustration and uncertainty in their housing search. Additionally, the absence of comprehensive resources such as transportation information and nearby amenities further complicates the process, leaving students feeling overwhelmed and disconnected from their potential living environments. As a result, there is a pressing need for a solution that addresses these challenges and provides students with a seamless and empowering experience in finding suitable accommodation.
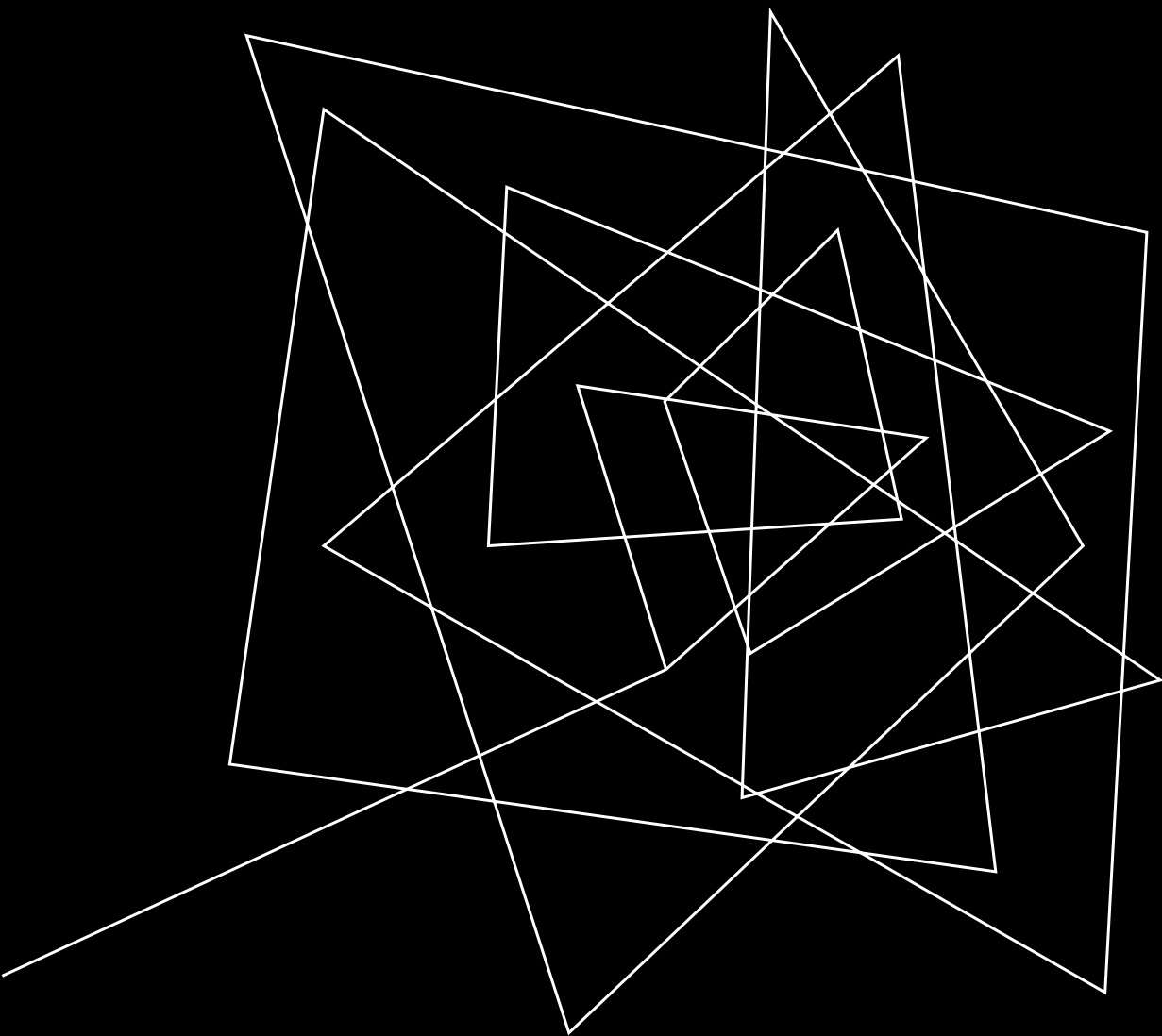
PROJECT DESCRIPTION

PROJECT DESCRIPTION

"Student Hive" is a secure and convenient platform designed for students seeking shared living arrangements. By registering with their school email, users gain access to comprehensive listings tailored to their accommodation preferences and budgeting needs. Advanced search options and communication tools facilitate connections with potential roommates or landlords, while additional resources such as transportation information and nearby amenities enhance the overall living experience. With support and community engagement features available, "Student Hive" empowers students to confidently navigate their search and find the perfect accommodation suited to their needs.

PERSONAS

PERSONA 1: EMILY, BUDGET-CONSCIOUS STUDENT

Name: Emily
Age: 25
Location: Pacific Northwest, USA
Salary: $20,000 per year
Job: Graduate Student Research Assistant
Family: Single, no children

Profile: Emily is a dedicated graduate student who balances her studies with a part-time job, all while living a sustainable lifestyle.
Interests: Environmental science, outdoor activities, sustainable living practices.
Frustrations: Difficulty in finding affordable, eco-friendly housing near campus and compatible roommates.
Goals: To live in an affordable, sustainable home close to campus with roommates who share her eco-conscious values.

PERSONA 2: ALEX, INTERN/CO-OP SEEKER

Name: Alex
Age: 22
Location: NY , USA
Salary: $8,000 (Summer Internship Stipend)
Job: Undergraduate Computer Science Student/Intern
Family: Single, no children

Profile: Alex is a focused computer science student and intern, seeking convenient housing to support her summer internship and interests.
Interests: Coding, gaming, tech meetups.
Frustrations: Challenges in finding short-term, furnished, affordable housing close to her internship.
Goals: To find flexible housing that enables her to concentrate on his internship and personal tech projects.

PERSONA 3: JORDAN, GRADUATE STUDENT/YOUNG PROFESSIONAL

Name: Jordan
Age: 27
Location: Austin, Texas, or similar vibrant city
Salary: $50,000 per year
Job: Marketing Professional/Graduate Student
Family: Single, no children

Profile: Jordan is an ambitious marketing professional and potential graduate student, seeking a lifestyle balance in an urban environment.
Interests: Photography, social media, urban exploration, cafes, co-working spaces.
Frustrations: Finding an affordable place in a desirable neighborhood that caters to her professional and social needs.
Goals: To secure a living situation that aligns with her aspirations for career growth and an active social life in a dynamic neighborhood.

MINIMAL VIABLE PRODUCT
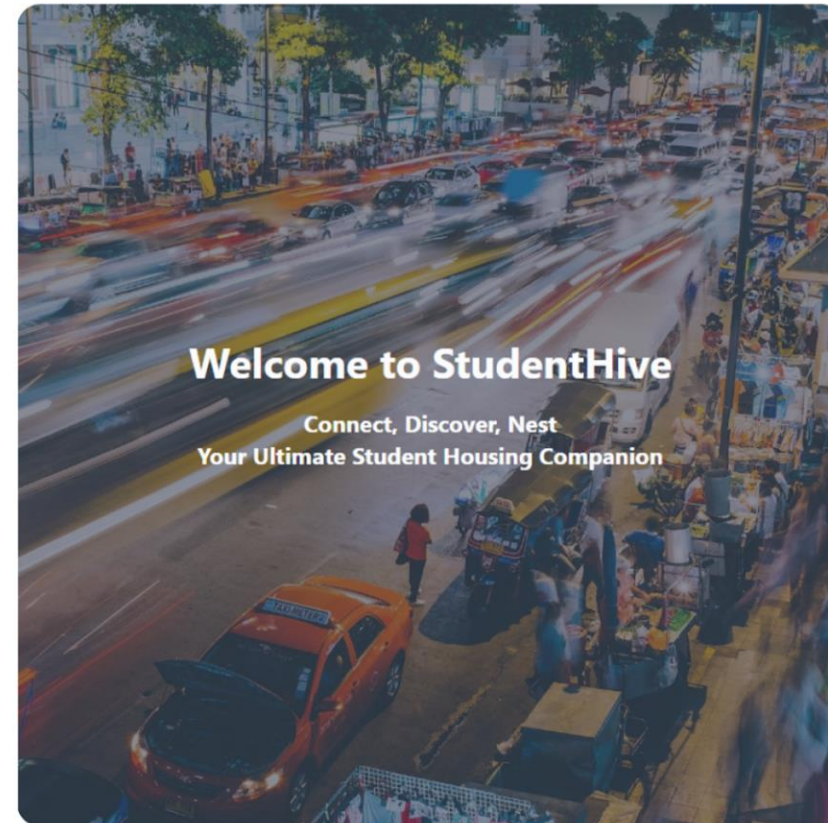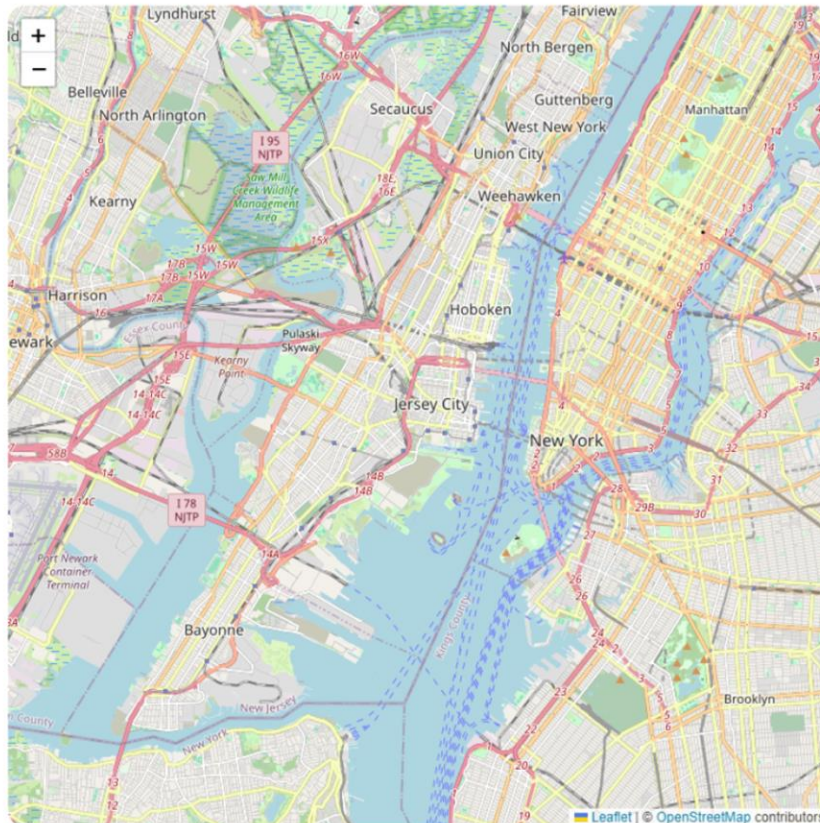
STUDENTHIVE

MINIMAL VIABLE PRODUCT (MVP)

The following are the features that we are covering in our MVP:

- Landing Page

- Login page with Sign In, Sign up and Forgot Password

- Home Page with Map and Listings

LANDING PAGE (FIGMA PROTOTYPES)

LOGIN PAGE(SIGN IN, SIGN UP, FORGOT) (FIGMA PROTOTYPES)

HOME PAGE (FIGMA PROTOTYPES)
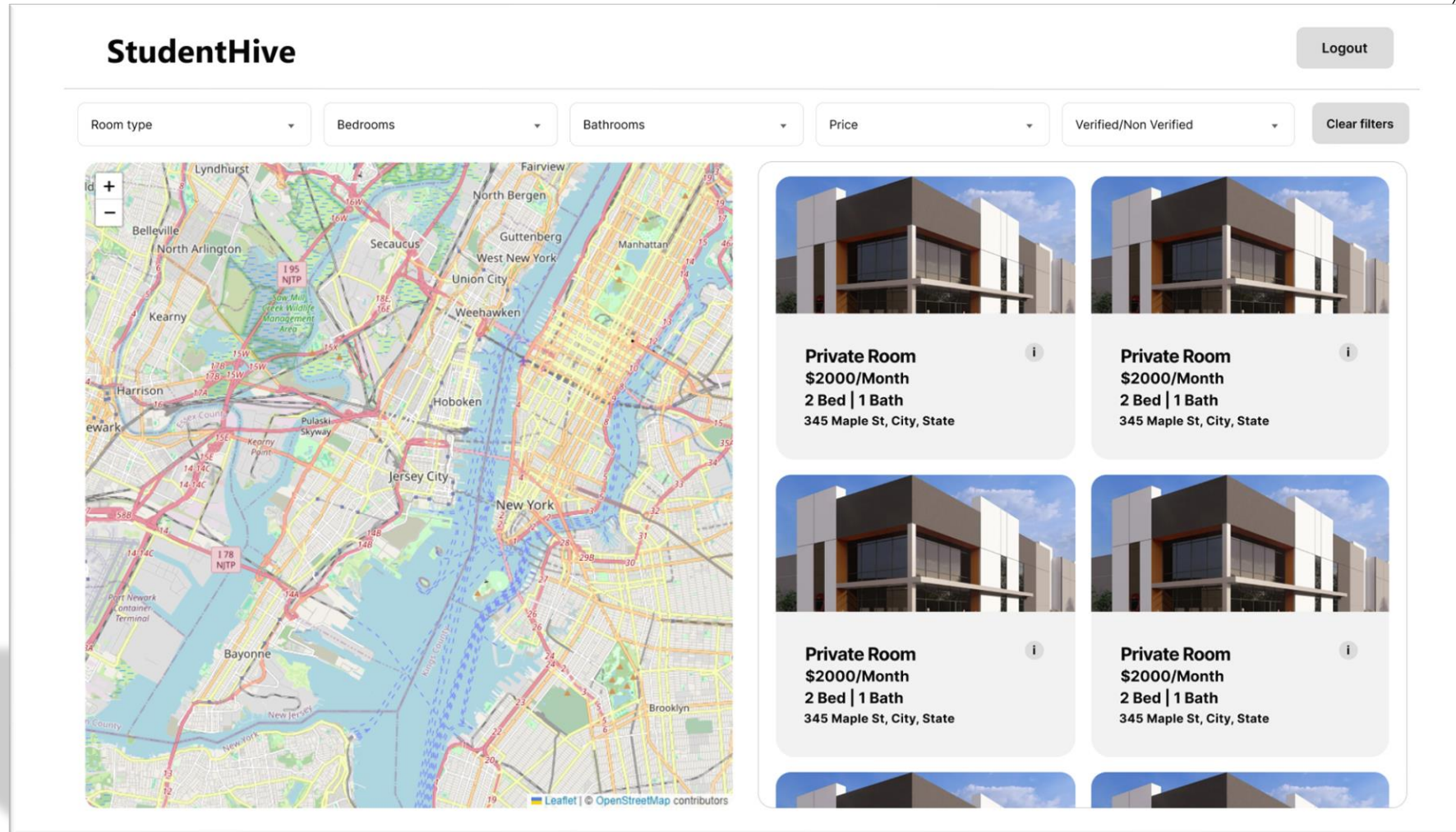
TECHNOLOGIES & ALGORITHMS
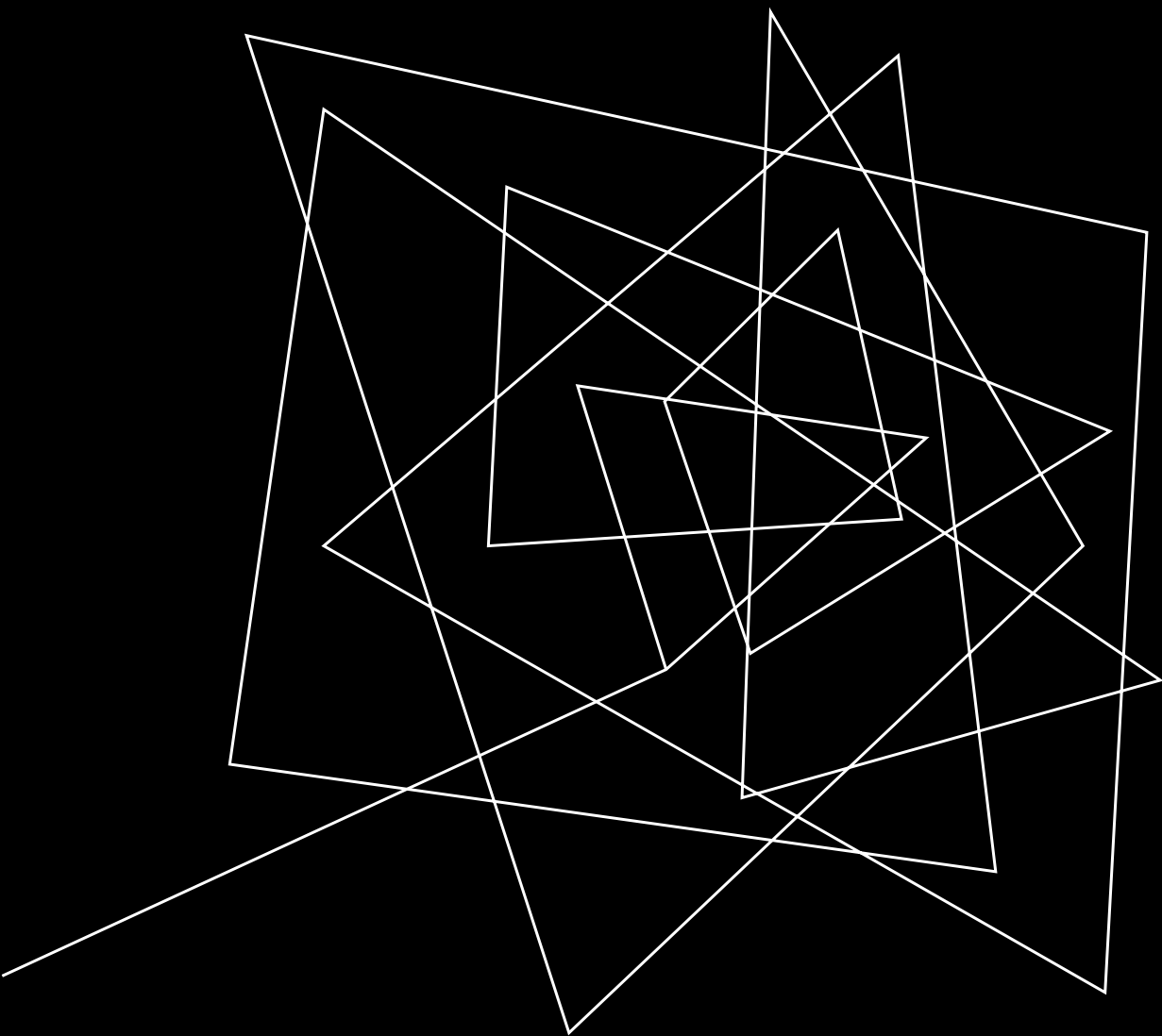
TECHNOLOGIES

Front End

React, Oauth2.0, TanStack Query(Context API – State Management), Axios, Zod (Validation)

Back End

Node JS, Fastify, MongoDB, Passport JS(Auth), Mongoose (ORM)
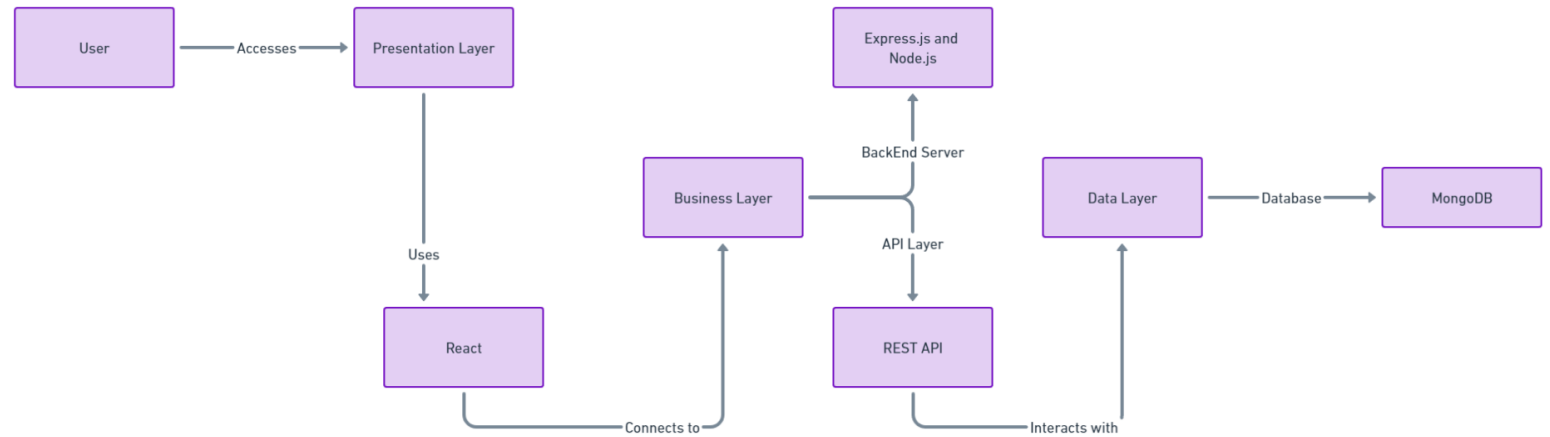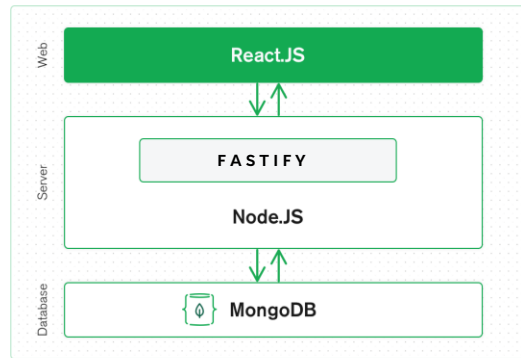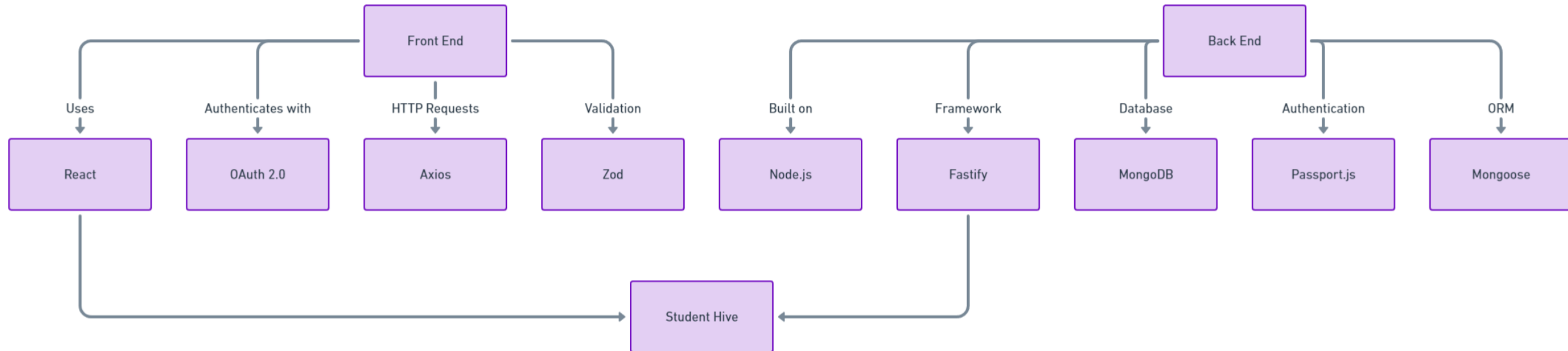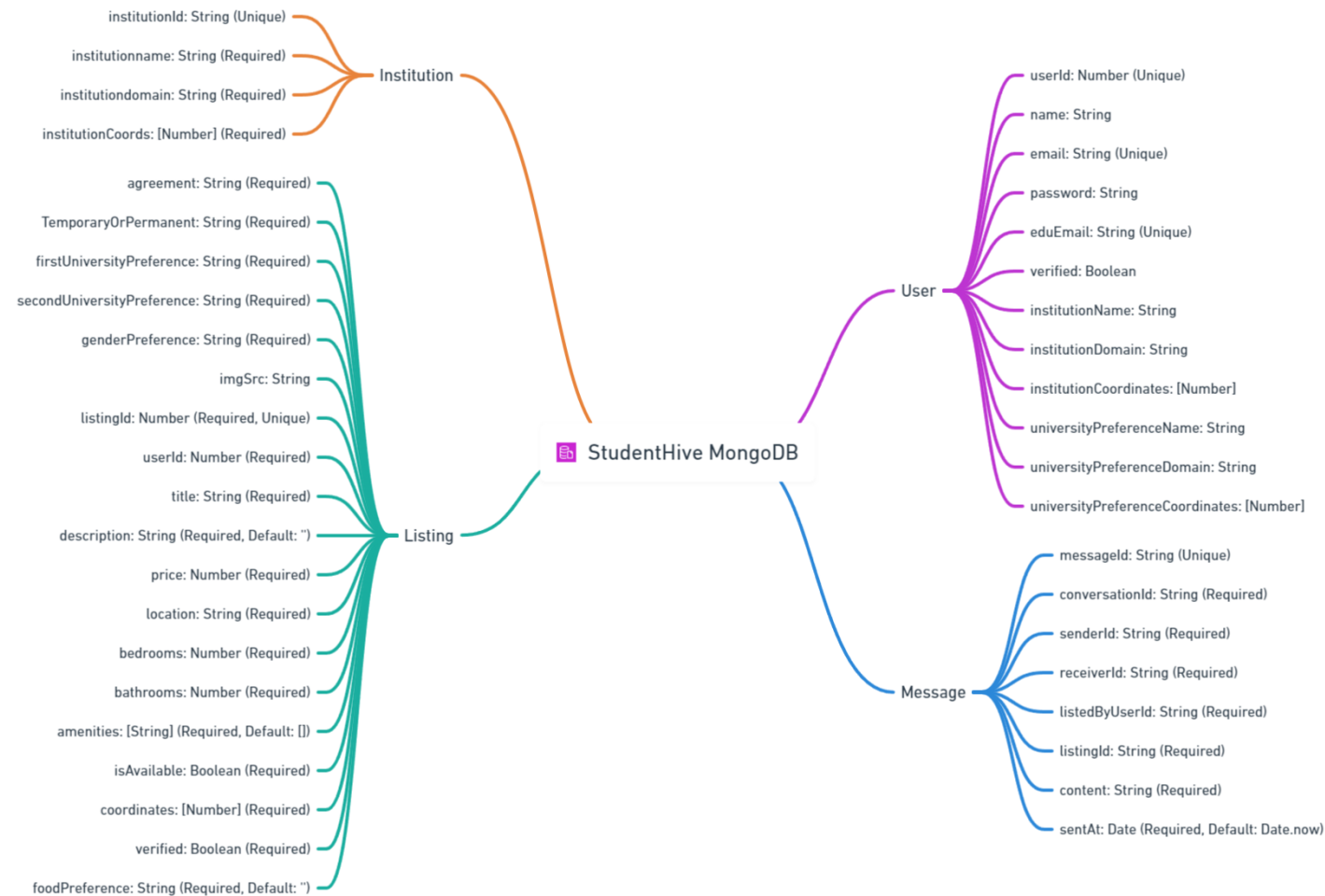
ALGORITHMS

KNN, Linear Regression

DIAGRAMS

ARCHITECTURAL DIAGRAM (THREE-TIER ARCHITECTURE)

ARCHITECTURAL DIAGRAM (EXTENDED)

ER DIAGRAM

Institution
- institutionId: String (Unique)
- institutionname: String (Required)
- institutiondomain: String (Required)
- institutionCoords: [Number] (Required)

Listing
- agreement: String (Required)
- TemporaryOrPermanent: String (Required)
- firstUniversityPreference: String (Required)
- secondUniversityPreference: String (Required)
- genderPreference: String (Required)
- imgSrc: String
- listingId: Number (Required, Unique)
- userId: Number (Required)
- title: String (Required)
- description: String (Required, Default: ")
- price: Number (Required)
- location: String (Required)
- bedrooms: Number (Required)
- bathrooms: Number (Required)
- amenities: [String] (Required, Default: [])
- isAvailable: Boolean (Required)
- coordinates: [Number] (Required)
- verified: Boolean (Required)
- foodPreference: String (Required, Default: ")

StudentHive MongoDB

User
- userId: Number (Unique)
- name: String
- email: String (Unique)
- password: String
- eduEmail: String (Unique)
- verified: Boolean
- institutionName: String
- institutionDomain: String
- institutionCoordinates: [Number]
- universityPreferenceName: String
- universityPreferenceDomain: String
- universityPreferenceCoordinates: [Number]

Message
- messageId: String (Unique)
- conversationId: String (Required)
- senderId: String (Required)
- receiverId: String (Required)
- listedByUserId: String (Required)
- listingId: String (Required)
- content: String (Required)
- sentAt: Date (Required, Default: Date.now)
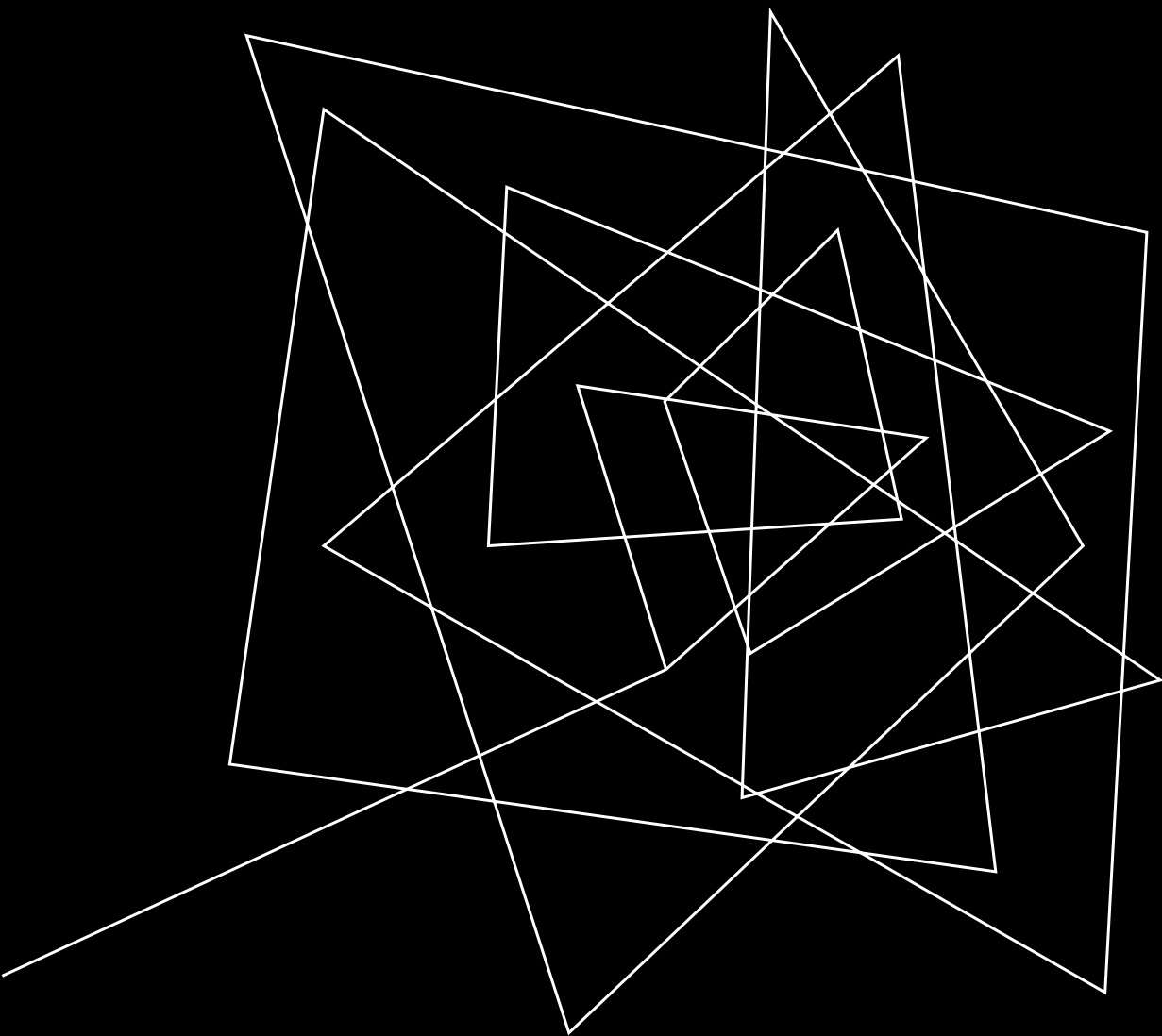
PRODUCT BACKLOG

USER STORIES

USER STORIES

Board (20 issues)   20 ⓞ ⓞ

- ☑ SHK-2 As a user, I want to edit my listings to update any changes in price, availability, or details to keep potential renters informed.   TO DO ⌄   ⊖
- ☑ SHK-1 As a user, I want to use filters to sort listings by room type to quickly find accommodations that match my living situation preferences.   TO DO ⌄   ⊖
- ☑ SHK-10 As a user, I want to sign up for Student Hive using my personal email to start my accommodation search.   TO DO ⌄   RV
- ☑ SHK-9 As a user, I want to browse the home page to see a map showcasing the locations of available accommodations.   TO DO ⌄   RV
- ☑ SHK-18 As a user, I want to verify my student status with my educational email after signing up to ensure access to student-specific listings.   TO DO ⌄   ⊖
- ☑ SHK-7 As a user, I need a way to reset my password in case I forget it, ensuring I can regain access to my account without hassle.   TO DO ⌄   ⊖
- ☑ SHK-6 As a user, I want to communicate directly with potential roommates or landlords to ask questions or express interest in a listing.   TO DO ⌄   ⊖
- ☑ SHK-20 As a user, I want to filter listings based on the number of bedrooms to find accommodations that meet my space needs.   TO DO ⌄   ⊖
- ☑ SHK-19 As a user, I want to view the coordinates of a listing to understand its exact location and how it fits with my needs.   TO DO ⌄   ⊖
- ☑ SHK-12 As a user, I want to see listings of rentals, including houses and apartments, to explore a variety of living arrangements.   TO DO ⌄   RV
- ☑ SHK-5 As a user, I want to set and update my university search preference to receive listings relevant to my campus location.   TO DO ⌄   ⊖
- ☑ SHK-15 As a user, I want to report listings or users that violate platform policies to maintain a safe and respectful community.   TO DO ⌄   ⊖
- ☑ SHK-16 As a user, I want to see listings of rooms, both shared and private, on the home page to find options that suit my preferences.   TO DO ⌄   RV
- ☑ SHK-13 As a user, I want to remove my listings when they are no longer available to avoid receiving inquiries for occupied spaces.   TO DO ⌄   ⊖
- ☑ SHK-3 As a user, I want to adjust filters based on price to find accommodations within my budget.   TO DO ⌄   RV
- ☑ SHK-11 As a user, I want to change my password through my profile settings to maintain the security of my account.   TO DO ⌄   ⊖
- ☑ SHK-8 As a user, I want to sign in to Student Hive using my personal email to access my account and view listings.   TO DO ⌄   RV
- ☑ SHK-4 As a user, I want to create a listing with specific details such as address, price, and description to offer my space for rent.   TO DO ⌄   ⊖
- ☑ SHK-17 As a user, I want to filter listings by the number of bathrooms to ensure the accommodation meets my privacy and convenience needs.   TO DO ⌄   ⊖
- ☑ SHK-14 As a user, I want to manage my profile to keep my personal information up to date.   TO DO ⌄   ⊖

\+ Create issue

SPRINT 3 BACKLOG

SPRINT 3

SH Sprint 3 11 Mar – 20 Mar (12 issues)   0 0 0   Complete sprint •••

~~SH-15~~ Create Listing Component	DONE ⌄	-	S
~~SH-16~~ Add Map and Listing Details Component	DONE ⌄	-	SP
~~SH-17~~ Add Copy to Clipboard Component	DONE ⌄	-	S
~~SH-18~~ Add Message Component	DONE ⌄	-	KK
~~SH-19~~ Add Functionality of Location to the Map Component	DONE ⌄	-	KK
~~SH-20~~ Add details to the Listing Component	DONE ⌄	-	RV
~~SH-21~~ Add Amenities details to the Listing Component	DONE ⌄	-	KK
~~SH-22~~ Add Scrollbar to the listing details	DONE ⌄	-	RV
~~SH-23~~ Create Manage Component	DONE ⌄	-	Y
~~SH-24~~ Add Map Component	DONE ⌄	-	RV
~~SH-25~~ Create Profile Component	DONE ⌄	-	RV
~~SH-41~~ Create Backend for Messages	DONE ⌄	-	RV

+ Create issue

32

ACCEPTANCE CRITERIA

ACCEPTANCE CRITERIA

Issue Type	ID	Summary	Acceptance Criteria	Place
Feature	1	Sign up with personal email	Scenario: New user registration Given the user is on the Sign-Up page When the user inputs a personal email address and completes the registration form Then the user receives a confirmation email to complete the signup process	Login Page
Feature	2	Verify student status with educational email	Scenario: Verifying student status Given the user has signed up with a personal email When the user enters an educational email address for verification Then the user receives a verification email at the educational email address And upon clicking the verification link, the user's profile is marked as verified	Manage Profile
Feature	3	Sign in with personal email	Scenario: User login Given the user has an account When the user enters their personal email and password on the login page Then the user is successfully logged into their account	Login Page
Feature	4	Password reset functionality	Scenario: Resetting a forgotten password Given the user has forgotten their password When the user clicks on "Forgot Password" and enters their email address Then the user receives a password reset email And upon following the instructions in the email, the user can successfully reset their password	Login Page
Feature	5	Browse listings with a map view	Scenario: Viewing listings on a map Given the user is on the Home Page When the user navigates to the map view of listings Then the user can see pins on the map representing available accommodations	Home Page
Feature	6	Filter listings by accommodation type	Scenario: Filtering listings by accommodation type Given the user is on the Listings Page When the user selects an accommodation type (shared, private) from the filter options Then the listings are updated to only show the selected accommodation type	Home Page
Feature	7	Filter listings by number of bedrooms	Scenario: Filtering listings by bedrooms Given the user is on the Listings Page When the user selects a specific number of bedrooms from the filter options Then the listings are updated to only show options with the selected number of bedrooms	Home Page
Feature	8	Filter listings by price	Scenario: Filtering listings by price Given the user is on the Listings Page When the user specifies a price range Then the listings are updated to only show options within the specified price range	Home Page

ACCEPTANCE CRITERIA

Feature	9	Create a listing	Scenario: Creating a new listing Given the user is logged in and on the Create Listing page When the user inputs all required details for the listing and submits it Then the listing is created and visible on the platform	Create Listing Page
Feature	10	Edit a listing	Scenario: Editing an existing listing Given the user is logged in and owns a listing When the user edits the listing details and saves the changes Then the updated listing reflects the changes made	Manage Listings Page
Feature	11	Remove a listing	Scenario: Removing a listing Given the user is logged in and owns a listing When the user chooses to remove one of their listings Then the listing is no longer visible on the platform	Manage Listings Page
Feature	12	View listing details	Scenario: Viewing detailed listing information Given the user is browsing listings When the user selects a listing to view more details Then the user is presented with detailed information including amenities, price, and location	Listing Page
Feature	13	Manage profile information	Scenario: Updating profile information Given the user is logged in When the user goes to Profile Settings and updates their information Then the user's profile information is updated accordingly	Mange Profile
Feature	14	Direct communication with potential roommates or landlords	Scenario: Messaging a listing owner Given the user is interested in a listing When the user sends a message to the listing owner via the platform's messaging feature Then the message is successfully sent and can be viewed in the Messages section	Messages Page
Feature	15	Manage messages from other users	Scenario: Managing received messages Given the user is logged in and has received messages When the user goes to the Messages section to view and respond to messages Then the user can successfully manage their messages including reading, replying to, and deleting messages	Messages Page

TEST CASES

TEST CASES

TestCaseId	UserStoryID	Unit to Test	Assumptions	TestData	Steps to be Executed	Expected Results
TC11	SHK-1	Filtering listings by room type	User is logged in and is on the listings page	Room type: Apartment	1. Go to the listings page. 2. Locate the room type filter.<	Only listings that are apartments are displa
TC12	SHK-11	Password Change functionality	User has forgotten their password	Current and new password	1. Go to the login page. 2. Login using Credentials. <	Instructions for resetting password are ser
TC13	SHK-19	Viewing listing coordinates	User is logged in and viewing a listing	N/A	1. Select a listing to view details. 2. Scroll to the section	Marker of the listing are clearly displayed.
TC14	SHK-20	Filtering listings by number of bedrooms	User is logged in and is on the listings page	Number of bedrooms: 2	1. Go to the listings page. 2. Locate the number of bedro	Only listings with 2 bedrooms are displaye
TC07	SHK-1,SHK-	Multi-filter functionality	User is logged in and on the listings page	Room type: Apartment, Bedrooms: 1	1. Go to the listings page. 2. Apply the room type filter as	Only listings that are studio apartments wi

STORIES COMPLETED

STORIES COMPLETED

✓ SHK-1 As a user, I want to use filters to sort listings by room type to quickly find accommodations that match my living situation preferences.   DONE ⌄   S

✓ SHK-7 As a user, I need a way to reset my password in case I forget it, ensuring I can regain access to my account without hassle.   DONE ⌄   Y

✓ SHK-6 As a user, I want to communicate directly with potential roommates or landlords to ask questions or express interest in a listing.   DONE ⌄   RV

✓ SHK-19 As a user, I want to view the coordinates of a listing to understand its exact location and how it fits with my needs.   DONE ⌄   RV

✓ SHK-20 As a user, I want to filter listings based on the number of bedrooms to find accommodations that meet my space needs.   DONE ⌄   KK

✓ SHK-11 As a user, I want to change my password through my profile settings to maintain the security of my account.   DONE ⌄   SP

STORIES NOT COMPELETED

- NONE

METRICS

TEAM VELOCITY

TEAM VELOCITY
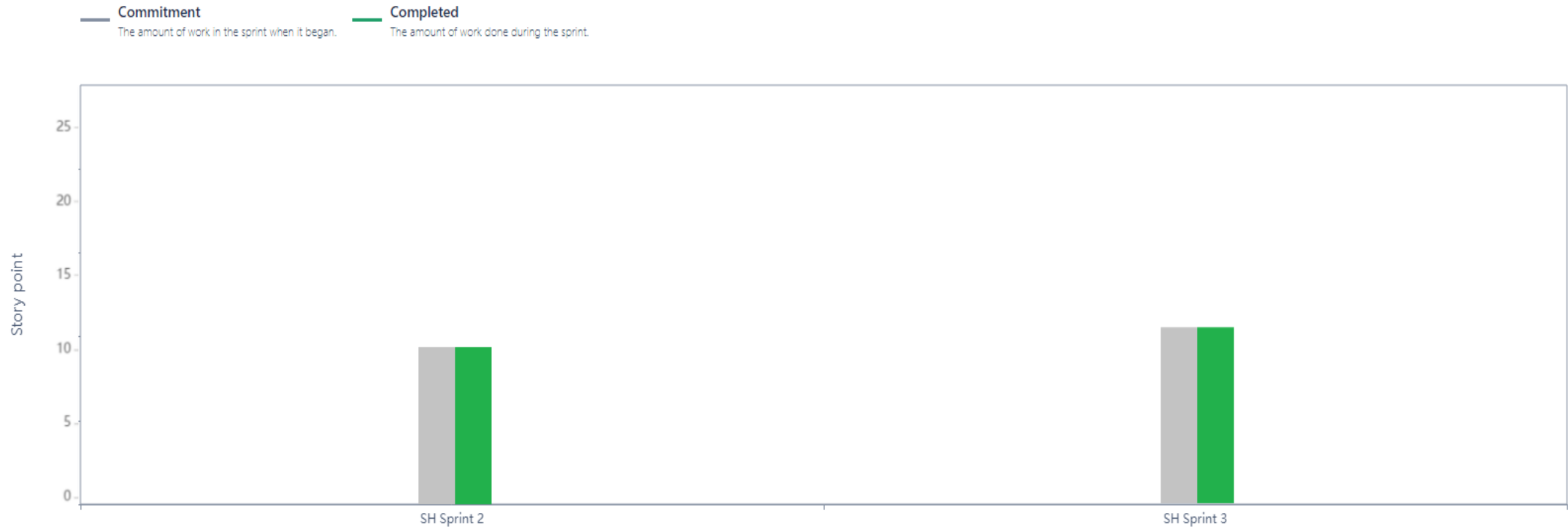
SPRINT BURNDOWN
CHART

SPRINT BURN DOWN CHART

TEAM HISTORICAL VELOCITY
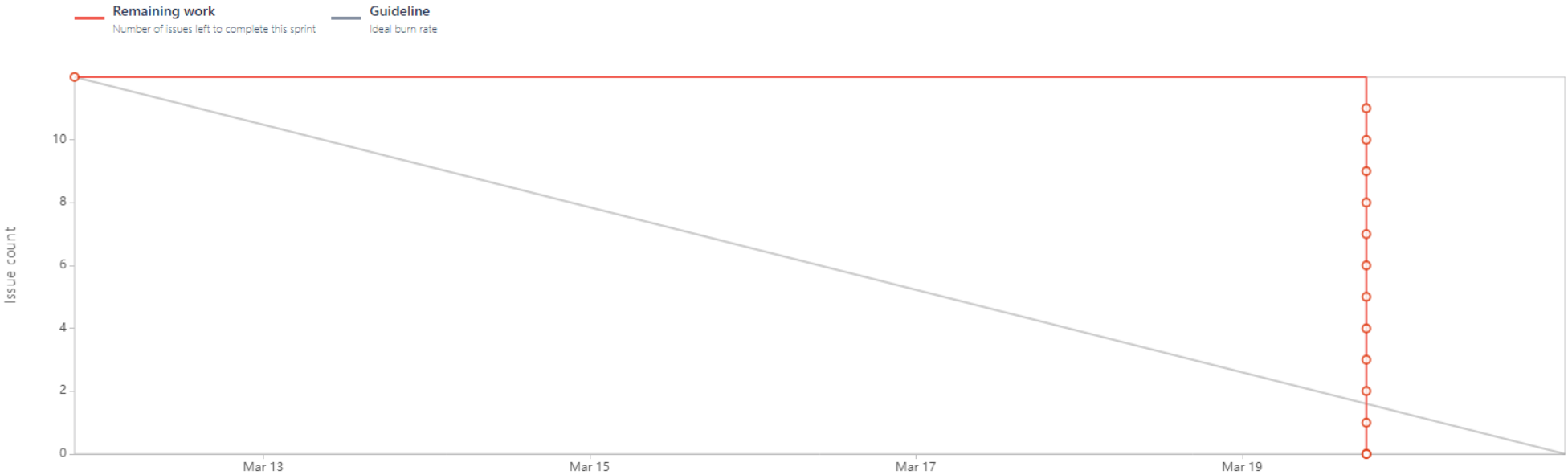
TEAM HISTORICAL VELOCITY

Team Historical Velocity
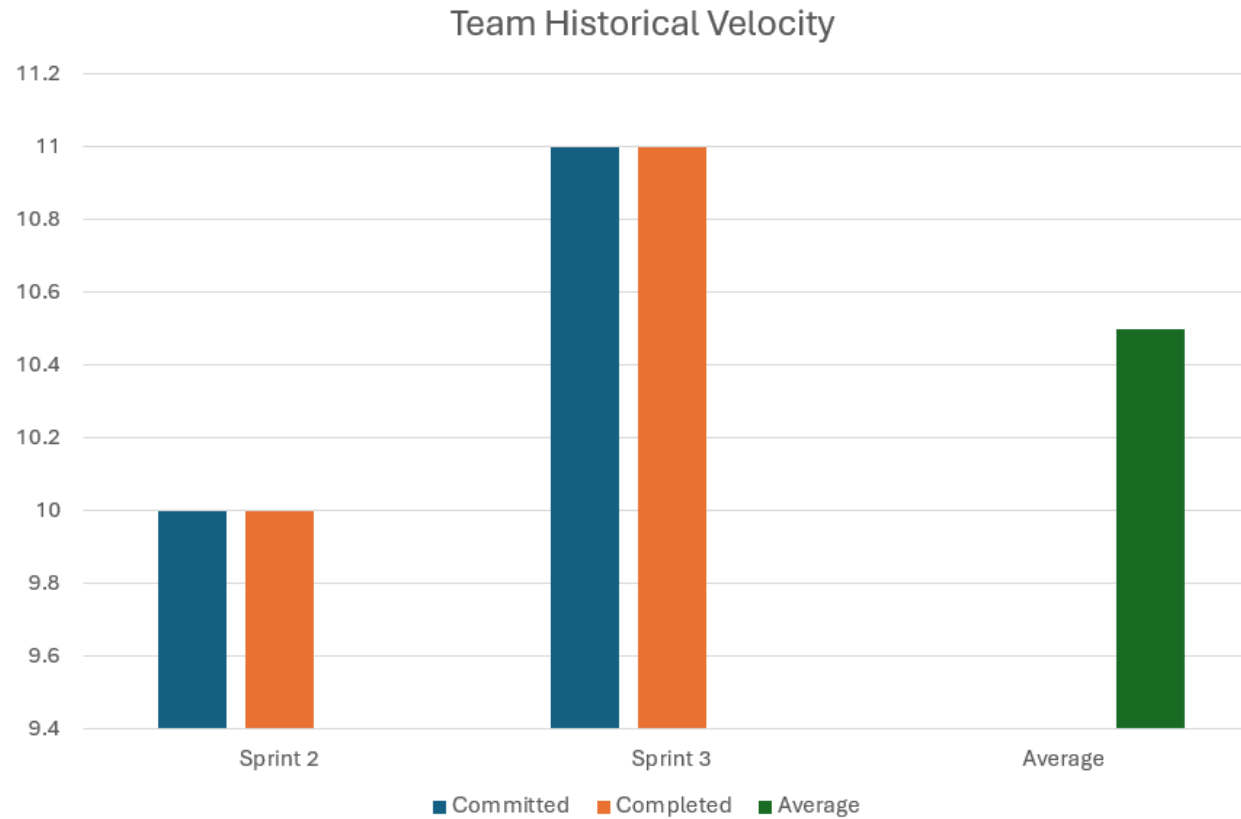
COMPLETED COMMITTED RATIO

COMPLETED COMMITTED RATIO
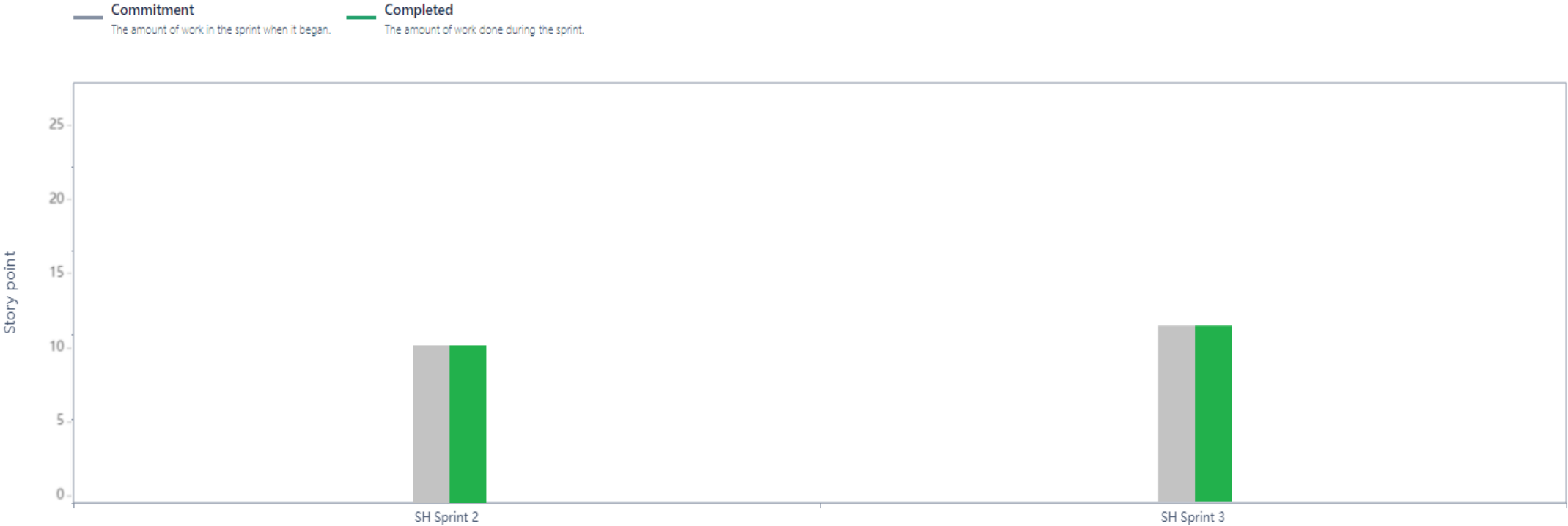
RETROSPECTIVE

WHAT WENT WELL

Effective Communication: The team's communication was clear and consistent, facilitating smooth collaboration and quick resolution of any issues that arose.

Adaptability: The team showed remarkable adaptability in responding to unexpected challenges, quickly pivoting strategies to stay on course with project objectives.

WHAT NEEDS IMPROVEMENTS

Resource Allocation: There were instances where resource allocation did not match task urgency or complexity, leading to delays. A more strategic approach to assigning tasks and resources is needed.

Documentation: While the work progressed well, documentation lagged behind. Improving real-time documentation practices will ensure all team members have access to up-to-date information.
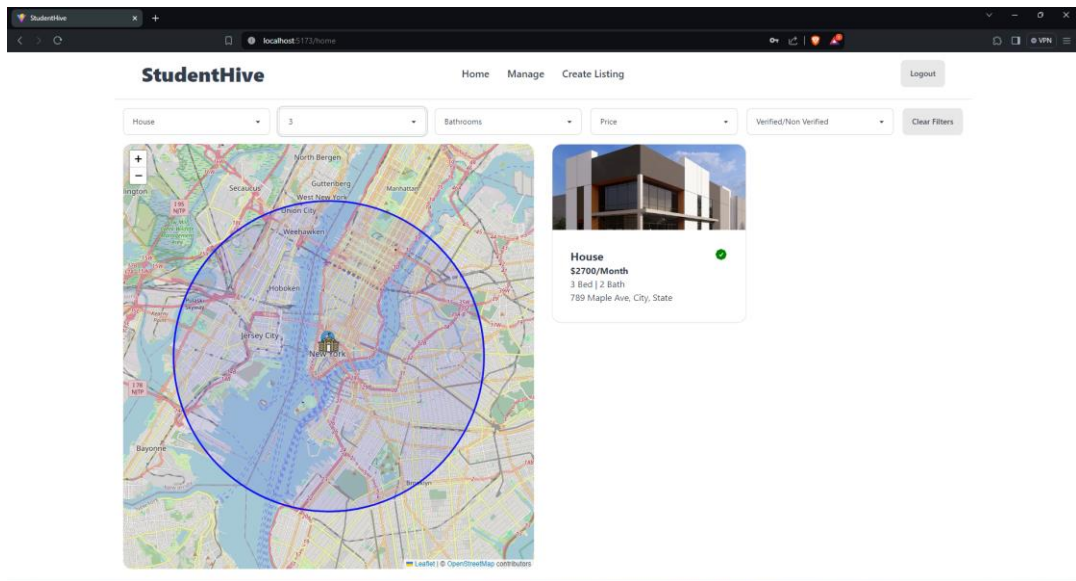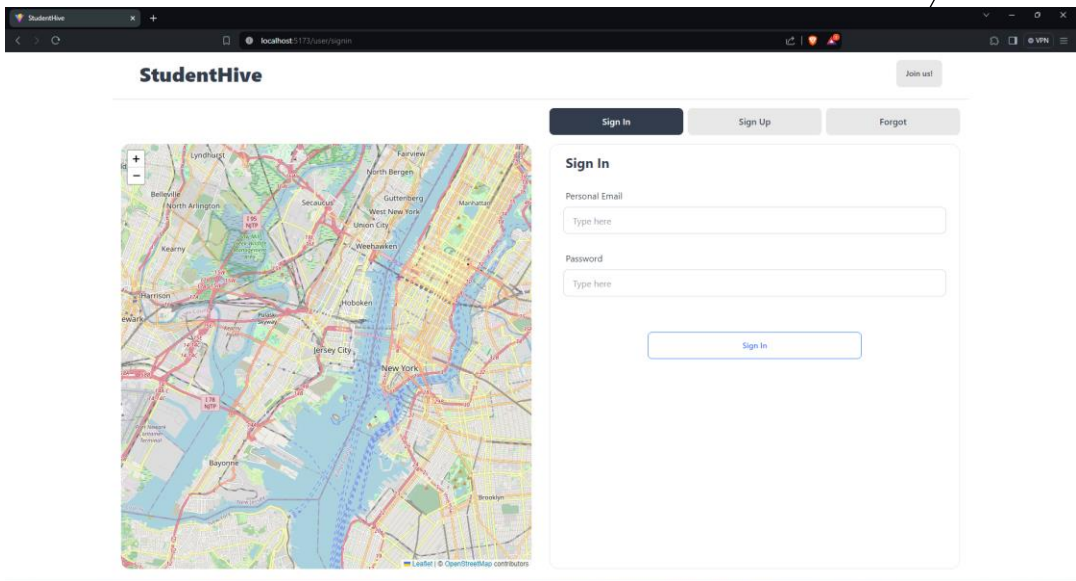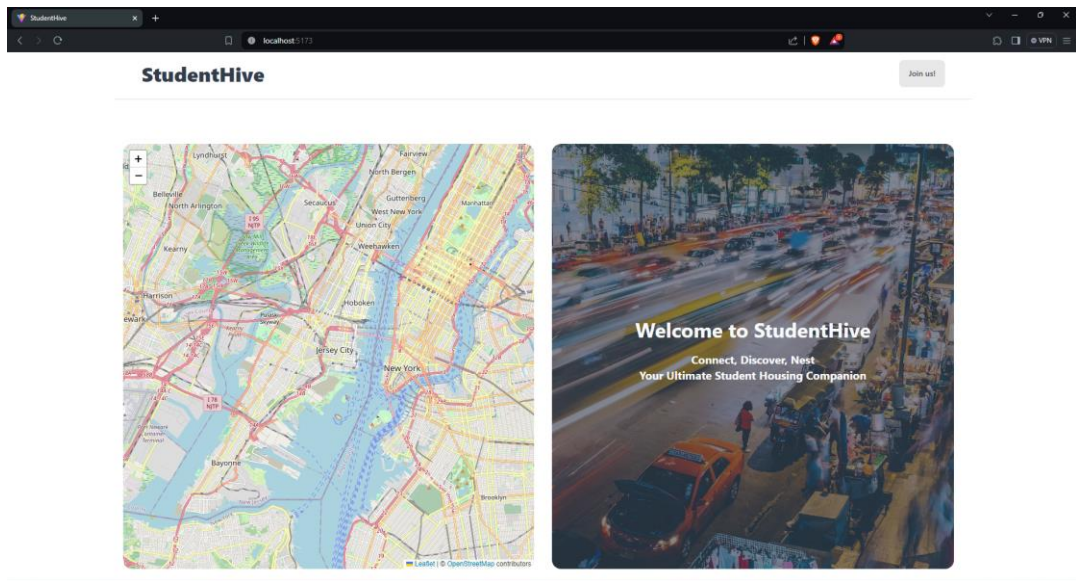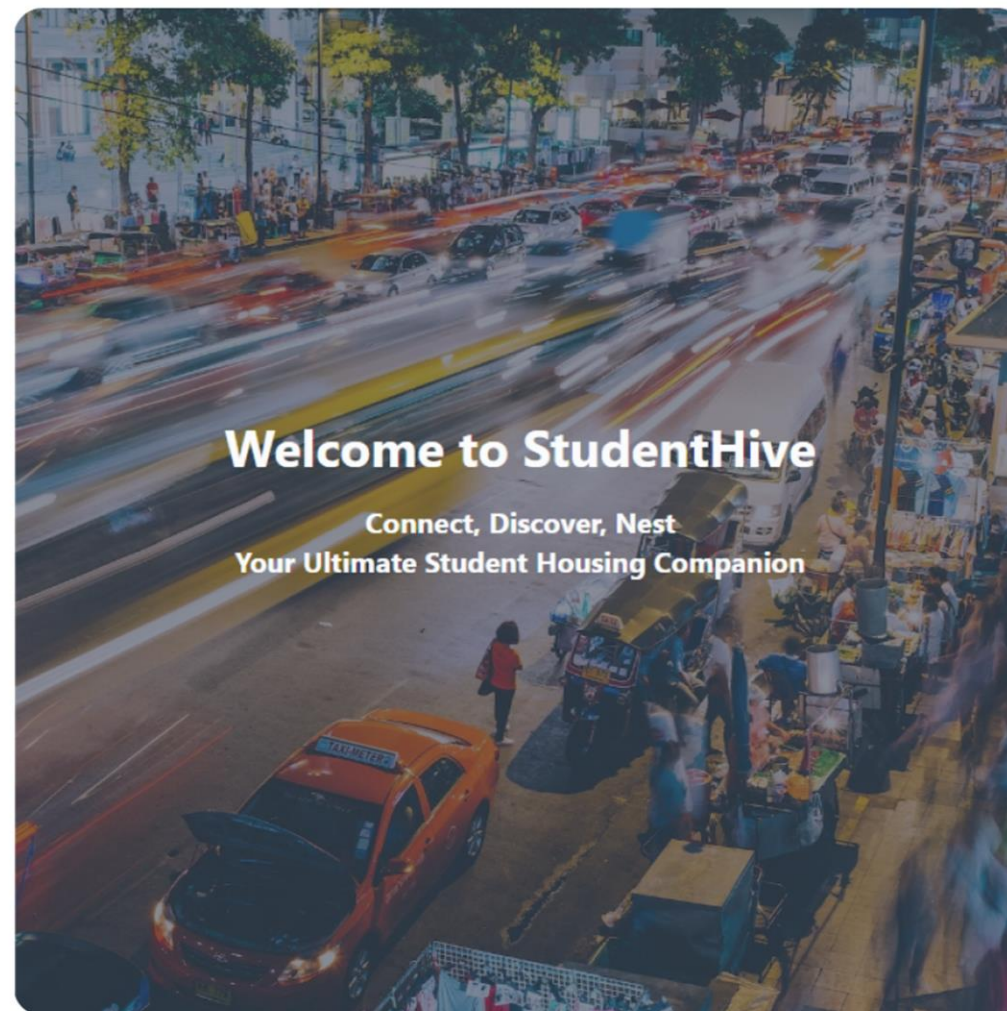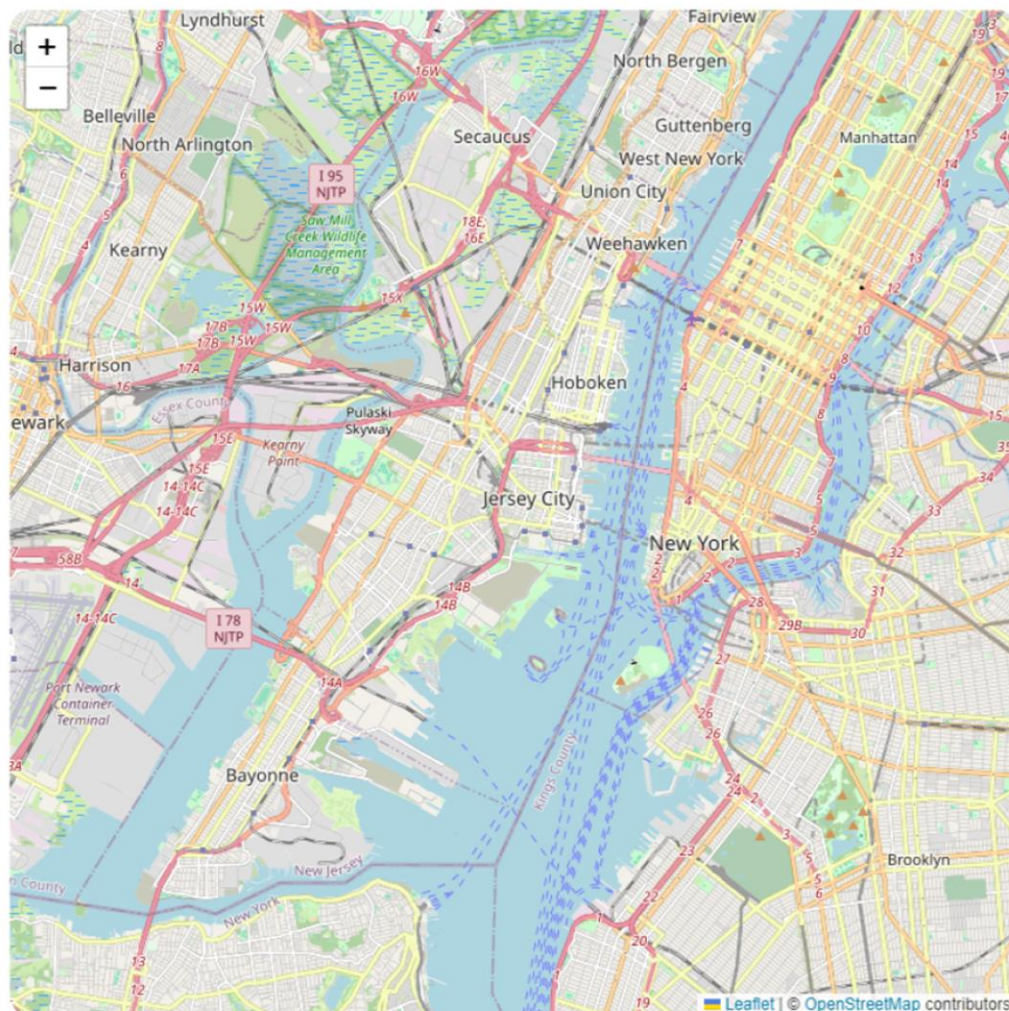
NEXT STEPS

Review and Adjust Resource Allocation: Conduct a thorough review of resource allocation processes and implement a more dynamic approach to ensure resources match project needs more accurately.
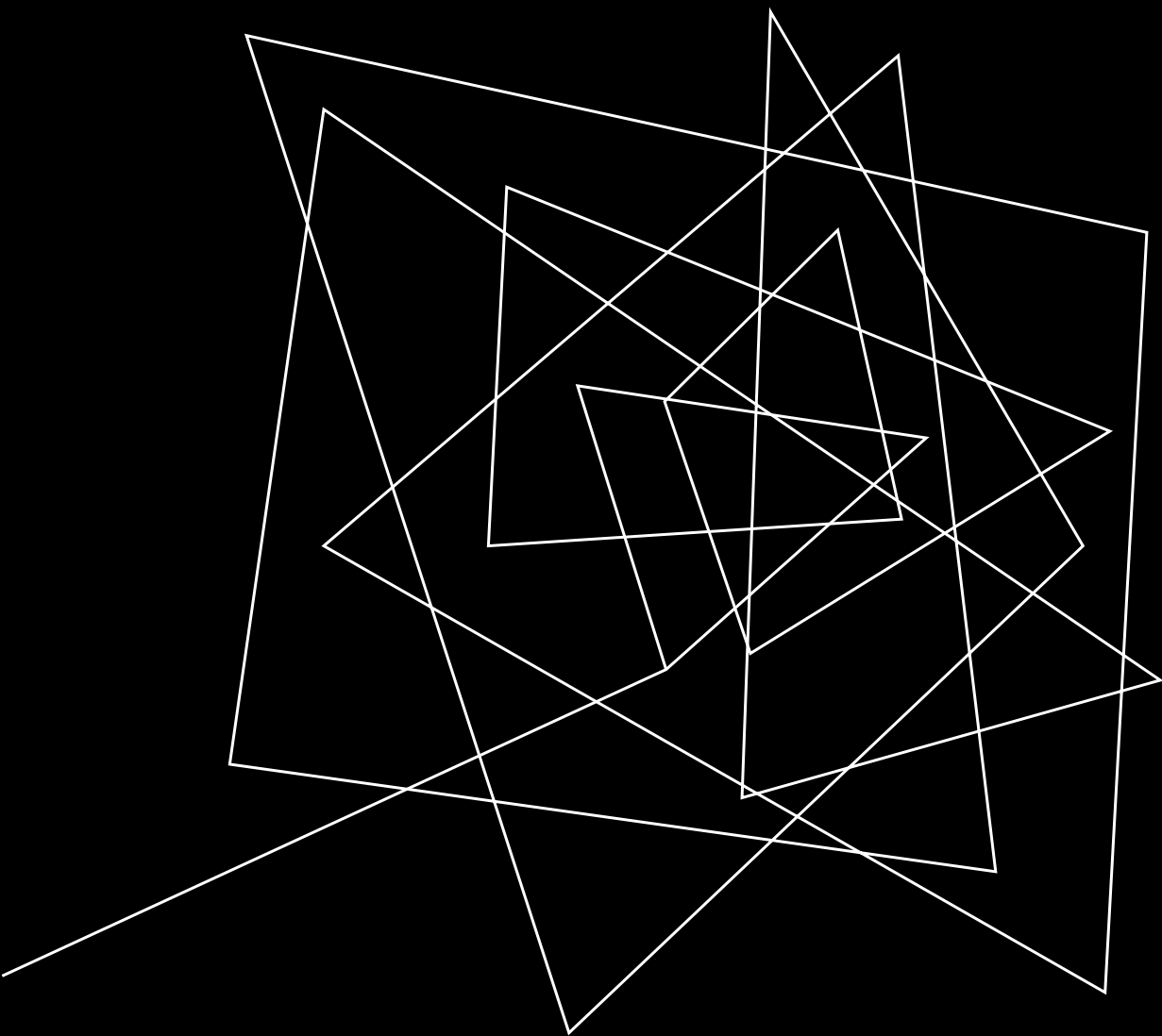
Implement a Documentation Strategy: Develop and introduce a strategy for ongoing documentation, including designated documentation days or integrating documentation time into task estimates.

PROJECT DEMO

StudentHive

Welcome to StudentHive

Connect, Discover, Nest
Your Ultimate Student Housing Companion
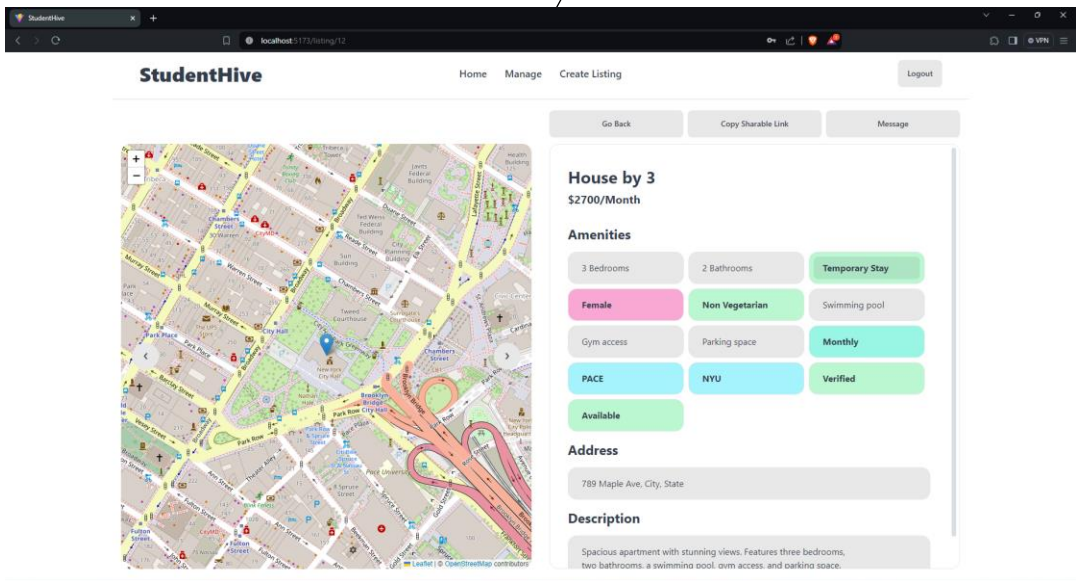
GITHUB LINK

WIKIPAGE LINK

HTTPS://GITHUB.COM/RAJKOUSHIKV/STUDENTHIVE/WIKI/WIKIPAGE

THANK YOU