UNEST

CS 307 - Sprint #2 Planning

Team 13: Sudhanva Bharadwaj, Nivedha Kumar, Ram Laxminarayan, Grant McCord

Sprint Overview:

For this sprint, the team aims to continue to develop the frontend for the main pages of the website. By the end of this sprint, the team aims to have all the frontend pages complete and all the routes layed out for the application. The team also plans on adding functionality to the site with the ability to create and view properties by location. A map will be added to see a specific property relative to campus. We aim to populate various fields of the website from the database, rather than have static text or images as placeholders. The messages page will also begin to get developed so that listers and users can interact over a specific property. Finally, we hope to develop the profile page which will collect additional details about the user.

Scrum Master:

The scrum master/team leader for our group is Nivedha Kumar.

Scrum Meeting Schedule:

The regular meeting times will be Tuesday 8:30 pm - 10:00 pm, Thursday 8:30 pm - 10:00 pm, and Saturday 5 pm - 6:30 pm.

Risks and Challenges:

Since we have a major issue with the github, we need to address that first and that could take a while. Only once we make sure that everyone can push and pull will we all be able to start our user stories.

We also will be focusing on integrating the database with our application which could be difficult and lead to new challenges. In the first sprint source code, we focused almost exclusively on UI. We did not focus on using node.js and express.js to connect and pull data from the database. Therefore, we need to learn how to make axios calls to generate http get, put, and push requests to the database. Then, we need to store the http responses in variables to use in the react app. As a result, we need to change all our current features in our application such as the property cards on the homepage so it gets the information from the database, which will take a lot of time. Similarly, for all new features we are developing in this current sprint, we need to retrieve information from the backend.

Current Sprint Detail:

Listings Page:
1. As a lister, I would like to be able to fill out a form with all the specific information about a property including paragraph description of the property and a list of amenities.

Task #	Description	Estimated Time	Owner
1	Create form for listings that asks for basic information about the property	3 hours	Sudhanva
2	Create buttons for Create and Delete listings. Make buttons route to new pages based on design.	2 hours	Sudhanva
3	Connect listing page to database. Creating a new listing should add a new entry to the collections of the database.	3 hours	Sudhanva
4	Add a restriction to each account so that only one property can be listed by a user.	2 hours	Sudhanva
5	Test the functionality of the listing page with valid and invalid entries. Manual test cases written for various input combinations.	2 hours	Sudhanva
6	Test that the database is updated when the submit button is clicked with valid entries	1 hour	Sudhanva

Acceptance Criteria:
- Given the Button components are created as expected, when clicked they should redirect the user to a new page or show a success message..
- Given that the listing page is created as designed, when the page is loaded, all the fields should be viewable with a text box or select box below each of the fields.
- Given that a listing question needs a user response, when a user clicks on the text box, they should be able to enter with their keyboard and the response should be saved until the form is submitted.
- Given that a user has typed into a text box, when the entry is invalid, an error message should be displayed asking the user to try again.
- Given that the submit button is created, when the form is complete, the "Submit" button should be clickable and store data.
- Given that the database is connected to the registration form, when the user clicks submit the data should be transferred into the database with a new entry and id for the listing created.
- Given that a user has already created a listing, a message should appear informing the user that they can only make one post.
- Given that a user chooses to delete a listing, a status message should appear based on the result of deletion from the database.

2. As a lister, in the form, I would also be able to provide the property's exact location (will be shown in a map to the potential tenant) and pictures of the property to be displayed

Task #	Description	Estimated Time	Owner
1	Create an address field for the listing page.	1 hour	Sudhanva
2	Add upload images button for user to select pictures of their property	2.5 hours	Sudhanva
3	Use the map from Property Listings page to show the coordinates of the property relative to campus	2.5 hours	Sudhanva
4	Test the rendering of the page to ensure that the address and picture are shown on screen.	1.5 hours	Sudhanva

Acceptance Criteria:
- Given the text box is functional, when the user clicks on the text box then they should be able to type into it.
- Given that the map is functional, a pin icon should appear based on the address typed in by the user..
- Given the listings page is functional, a distance from campus value should be generated based on the location.

- Given that a user has uploaded an image, that image/images should appear with the listing.
3. As a lister, I would like to be able to see and delete my listing from the My Listings page.

Task #	Description	Estimated Time	Owner
1	Create a page/popup for deleting form	1 hour	Sudhanva
2	Remove the entry from the database when the user selects to delete. The listings should also not be visible to others.	3 hours	Sudhanva
3	Display an error/success message after deleting a post.	1 hour	Sudhanva
4	Test that the deletion is properly working by manually checking for the fields deleted in the database. The deleted posts should not be rendered on the main page.	1.5 hours	Sudhanva

Acceptance Criteria:
- Given the delete button is created correctly, when the user clicks the delete button, a confirm message should appear to delete the listing.
- Given that the listing is properly deleted, when the user returns to the listing page, the "Create new listings" button should appear.
- Given that the user deletes a listing, that listing and all its attributes should be removed from the collections of the database.

4. As a lister, I would like users to be able to directly contact me through the listing page.

Task #	Description	Estimated Time	Owner
1	Create a contact button that shows the lister's information	1.5 hours	Sudhanva
2	Route button to the messages page so that user can connect with lister	1 hour	Sudhanva
4	Test that lister's id is tagged to each listing as this is how the messages page will know who to connect to. Manuall check in database if each listing is linked to a specific user.	2 hours	Sudhanva

Home Page:

5. As a user, I would like to be able to see various types of properties located in my area

Task #	Description	Estimated Time	Owner
1	Pull information about each of the properties from the database instead of hardcoding them.	4 hours	Nivedha
2	When the user is logged in, it stores that information. Using that information, filter the properties on the homepage screen based on their university.	5 hours	Nivedha
3	Create a unit test to make sure that properties are being pulled properly from the database and are filtered based on university if needed	2 hours	Nivedha

Acceptance Criteria:
- Given that the properties information is pulled from the database correctly, the image of each property should be different
- Given that the properties information is pulled from the database correctly, the name, date, price, and miles from campus for each property should be different.
- Given that the properties information is pulled from the database correctly, it should filter based on the university of the user.
- Given that the properties information is pulled from the database correctly, the unit test case should run successfully.

User Profile Page:

6. As a user, I would like to see a user profile page with information about myself.

Task #	Description	Estimated Time	Owner
1	Pull in data from the database with the basic information about the user like name and age to display on the page.	3 hours	Nivedha
2	Pull in data from the database with the paragraph description about the user and display it under a section called "about me."	3 hours	Nivedha
3	Pulls in data from the database that has details about the user like their class, major, minor, and hobbies to display on the page.	5 hours	Nivedha
4	Create a unit test to make sure the basic info section, about me section, and details about	3 hours	Nivedha

	myself section are all rendering properly.		

Acceptance Criteria:
- Given that the user information is pulled from the database correctly, the image of each property should be different
- Given that the user information is pulled from the database correctly, the name, date, price, and miles from campus for each property should be different.
- Given that the user information is pulled from the database correctly, it should filter based on the university of the user.
- Given that the user information is pulled from the database correctly, the unit test case should run successfully.

7. As a user, I would like to be able to edit information in the user profile page.

Task #	Description	Estimated Time	Owner
1	Add an icon that allows users to edit and update basic information about the user	2 hours	Nivedha
2	Add an icon that allows users to edit and update the paragraph description about the user in the "about me" section	2 hours	Nivedha
3	Add an icon that allows users to edit and update details about the user like their class, major, minor, and hobbies to display on the page.	2 hours	Nivedha
4	For all of the above tasks, send queries to the database to update the corresponding information for the user	5 hours	Nivedha
5	Create a unit test to make sure all the fields on the user profile page are getting edited properly.	2 hours	Nivedha

Acceptance Criteria:
- Given that the edit option is functional for the basic user information, the users can edit and update basic information about themselves
- Given that the edit option is functional for the about me section, the users to edit and update the paragraph description
- Given that the edit option is functional for the details section,
- Given that it updated all the information above correctly in the database, this edited information should still be rendered on the screen when the user comes back to that page.

● Given that the user profile page is rendered correctly, the unit test cases should run successfully.

Home page:

8. As a potential tenant, I would like to filter the properties based on the room of a house or an apartment.

Task #	Description	Estimated Time	Owner
1	Add a dropdown menu to the filter button.	3 hours	Grant
2	Create a button on the dropdown called Room Type.	4 hours	Grant
3	When the button is clicked, query the database and filter by room type.	5 hours	Grant
4	Show all of the selected properties in a grid on the main page.	1 hours	Grant
5	Create unit tests to verify that the squares in the grid are populating with the correct information.	3 hours	Grant

Acceptance Criteria:
● Given the filter button is working properly, when it is clicked then a dropdown menu should open.
● Given the dropdown is working properly, when it is open then it should show a button that says Room Type.
● Given the button is working correctly, when it is clicked then it should send a query to the database.
● Given the query is working correctly, when it is sent out then it should receive the information filtered by room type and any other filters.
● Given the grid on the main page is working properly, when it receives the information then it should display it all on the grid.

9. As a potential tenant, I would like to filter the properties by specifying a given price range.

Task #	Description	Estimated Time	Owner
1	Create a slider on the dropdown called Price.	3 hours	Grant
2	Include an updating price range on the slider that tells the user what the price range is as they drag the slider.	3 hours	Grant

3	When the button is clicked, query the database and filter by rooms that satisfy that price range.	4 hours	Grant
4	Show all of the selected properties in a grid on the main page.	1 hours	Grant
5	Create unit tests to verify that the squares in the grid are populating with the correct information.	3 hours	Grant

Acceptance Criteria:
- Given the slider is working properly, when it is held down it should be draggable from side to side.
- Given the button is working correctly, when it is clicked then it should send a query to the database.
- Given the query is working correctly, when it is sent out then it should receive the information filtered by price and any other filters.
- Given the grid on the main page is working properly, when it receives the information then it should display it all on the grid.

10. As a potential tenant, I would like to filter the properties by a certain number of beds and bathrooms.

Task #	Description	Estimated Time	Owner
1	Add a dropdown menu to the filter button.	3 hours	Grant
2	Create a button on the dropdown called Bedroom Count.	4 hours	Grant
3	When the search button is clicked, query the database and filter by number of beds and bathrooms.	5 hours	Grant
4	Show all of the selected properties in a grid on the main page.	1 hours	Grant
5	Create unit tests to verify that the squares in the grid are populating with the correct information.	3 hours	Grant

Acceptance Criteria:
- Given the filter button is working properly, when it is clicked then a dropdown menu should open.
- Given the dropdown is working properly, when it is open then it should show a button that says Bedroom Count.

- Given the button is working correctly, when it is clicked then it should send a query to the database.
- Given the query is working correctly, when it is sent out then it should receive the information filtered by bedroom count and any other filters.
- Given the grid on the main page is working properly, when it receives the information then it should display it all on the grid.

11. As a user, I would like the ability to search for properties on different campuses.

Task #	Description	Estimated Time	Owner
1	When the search button is clicked, query the database and only show the results that match the search criteria and other filters.	3 hours	Grant
2	Allow the search bar to search for campus location or listing name.	4 hours	Grant
2	Show all of the selected properties in a grid on the main page.	1 hours	Grant
3	Create unit tests to verify that the squares in the grid are populating with the correct information.	3 hours	Grant

Acceptance Criteria:
- Given the search bar is working properly, when the search button is pushed then the query should execute using the text from the search bar as a parameter.
- Given the search bar is working properly, when the search button is pushed then the query should account for both campus location and listing name.
- Given the query is working correctly, when it is sent out then it should receive the information matching the search criteria and any other filters.
- Given the grid on the main page is working properly, when it receives the information then it should display it all on the grid.

Messages Page:

12. As a potential tenant, I would like to directly start a chat with the lister.

Task #	Description	Estimated Time	Owner
1	Create button redirection for potential tenants to message a lister for a specific property.	1 Hour	Ram
2	Create the frontend design of where features such as the name of the lister and the text tool are displayed when a potential tenant messages a specific lister.	4 Hours	Ram
3	Ensure that a message can be sent.	2 Hours	Ram
4	Write a test to ensure that the message a potential tenant sends is saved.	2 Hours	Ram

Acceptance Criteria:
● Given that there exists a button to message a lister on the property listings page, when a potential tenant clicks on the button, they will be redirected to a page that allows them to message the property lister.
● Given that the potential tenant has been redirected to the messaging page for the specific lister, when the potential tenant types in the text bar and clicks enter, they should be able to send a message to the property lister.
● Given that the potential tenant sent a message to the property lister, when the page is refreshed, they can still see that the message is still saved and can view it again when going back to the messages page.
● Given that the potential tenant sent a message to the property lister, when the potential tenant is on a different page, they can go back to the messages page and see that their message was delivered.

13. As a user, I would like to easily view all my messages.

Task #	Description	Estimated Time	Owner
1	Design frontend of the entire messages page.	5 Hours	Ram
2	Write a test to ensure that specific parts are rendered on the messages	2 Hours	Ram

Task #	Description	Estimated Time	Owner
	page.		
3	Include redirection of going back to the home page and your own profile from the messages page.	1 Hour	Ram
4	Display a search bar to allow users to search for people to contact.	1 Hour	Ram
5	Have the list of users you are messaging be displayed along with the most recent message sent/received below their name.	1 Hour	Ram

Acceptance Criteria:
- Given that the UI of the messages page is properly displayed, when a user goes on the messages page, they see a list of their chats displayed.
- Given that the button redirection is functional, when a user clicks on the home button or profile button, they will be redirected to the appropriate page.
- Given that the search bar is displayed on the messages page, when a user clicks on the search bar, they should be able to type in it.
- Given that a list of chats are displayed on the messages page, when a user has not read the message yet, the text should be displayed in bold.
- Given that a chat has been read by a user, when a user is on the messages page, they should not see the text in bold.

14. As a potential tenant, I would like to be able to contact listers/users about their property.

Task #	Description	Estimated Time	Owner
1	Allow potential tenants to search for a property lister through the search bar based on their name.	3 Hours	Ram
2	Allow potential tenants to click on the lister's name to redirect to chat with them.	1 Hour	Ram
3	Write a test to ensure that redirecting to the a chat with a specific user works.	2 Hours	Ram
4	Allow the potential tenant to redirect to the user's profile, and redirect back to the specific user's chat from their profile page.	1 Hour	Ram

Acceptance Criteria:
- Given that the search bar is functional, when a potential tenant types a user's name, they should see their name or property pop up.
- Given that redirection is implemented, when a potential tenant clicks on a lister's name, then they should be redirected to the lister's profile.
- Given that the potential tenant was redirected to the user's profile page, when the potential tenant is on the profile page, they can redirect back to their chats with the user.
- Given that the potential tenant was redirected back to their chat page with a specific user, when the potential tenant is on that page, they can redirect back to the main messages page.

15. As a lister, I would like to have my messages to other listers and my messages from potential tenants be separated.

Task #	Description	Estimated Time	Owner
1	Design frontend of displaying potential tenants messages and messages to other listers on the same page but not at the same time.	3 Hours	Ram
2	Implement toggle functionality between messages with listers and messages with other potential tenants.	2 Hours	Ram
3	When a user clicks on a specific chat, they will only see their chat for that person.	2 Hours	Ram
4	Write a test to ensure that only one person's chat is displayed and that toggling is possible between messages with listers and messages with potential tenants.	2 Hours	Ram

Acceptance Criteria:
- Given that the frontend of the messages page is implemented, when a lister views their messages page, they should see sections with messages relating to others properties (messages with lister) and a section for messages with potential tenants.
- Given that the toggling functionality of the messages page is fully implemented, when a lister is on their messages page, they can toggle between their messages with potential tenants and messages with listers.
- Given that a lister sees their messages, when a lister clicks on a particular chat, they will then only see messages for the particular chat that they clicked on.

- Given that a lister is on a specific chat, when a lister clicks on the back button, they will be redirected back to their main messages page.

16. As a potential tenant, I would like listers to have the names of their properties included to help differentiate them.

Task #	Description	Estimated Time	Owner
1	Include the name of the property next to the name of the lister that you are messaging in the messages page.	1 Hour	Ram
2	Clicking the lister's name/property name should redirect the potential tenant to the lister's profile.	1 Hour	Ram
3	Also create redirection towards property listing of a specific property that the lister owns.	1 Hour	Ram
4	Write a test to ensure that all the redirection works.	2 Hours	Ram

Acceptance Criteria:
- Given that the messages page is fully displayed properly, when a potential tenant is on their messages page, they can see the lister's property name next to the lister's name.
- Given that a potential tenant is messaging two listers with the same name, when a potential tenant clicks on a specific chat, they will be viewing their chat with a lister with a specific name and property.
- Given that the lister's name and property name are displayed, when a potential tenant clicks on the name, they will be redirected to the lister's profile page.
- Given that the potential tenant was redirected back to the lister's profile page, when the potential tenant is on the profile page, they can redirect to the lister's specific property.

Backlog:
User Registration

1. ~~As a user, I would like to be able to make an account by filling out a user registration form.~~
2. As a user, I would like to be able to login with my username & password.
3. ~~As a user, I would like my password to be hidden when I type it.~~
4. ~~As a user, I would like to verify my password before creating my account.~~
5. As a user, I would like to be able to change the university associated with my account to a different university.
6. As a user, I would like to be able to view and update my user bio.
7. As a user, I would like to change and reset my password.
8. As a potential tenant, I want the site to verify that listers are students by confirming their school email.
9. As a lister, I want the site to verify that any potential tenants are students by confirming their school email.

Home Page

10. ~~As a user, I would like to see a grid view of multiple properties in my selected area.~~
11. ~~As a user, I would like a map to show all properties available in my selected radius.~~
12. ~~As a user, I would view the name of the property, price, dates available for rent, and miles from campus of each property.~~
13. ~~As a potential tenant, I would like to see all the available property listings with images and their location, date range, and cost.~~
14. ~~As a potential tenant, I would like to filter the properties based on the room of a house or an apartment.~~
15. ~~As a potential tenant, I would like to filter the properties by specifying a given price range.~~
16. ~~As a potential tenant, I would like to filter the properties by a certain number of beds and bathrooms.~~
17. ~~As a lister, I would like to have a button to create a new post.~~
18. ~~As a lister, I would like to access my inbox with a single button.~~
19. ~~As a potential tenant, I would like to have a button to view all of my favorite properties.~~
20. ~~As a user, I would like the ability to search for properties on different campuses.~~
21. ~~As a user, I would like to be able to see various types of properties located in my area (added this user story in this sprint)~~

~~Listing information page (made for potential tenants only)~~

22. ~~As a potential tenant, I would like to be able to view specific information about a property as described in features 26 and 27 below.~~
23. ~~As a potential tenant, I would like to have the option to favorite properties so I can view them later.~~
24. ~~As a potential tenant, I would like to be able to see the locations of the properties.~~

25. As a potential tenant, I would like to see the listers' contact information.
26. ~~As a potential tenant, I would like to directly start a chat with the lister.~~
27. As a potential tenant, I would like to see that the lister is a verified student.

Lister's Own Listings Page (made for listers only)
28. ~~As a lister, in the form, I would also be able to provide the property's exact location (will be shown in a map to the potential tenant) and pictures of the property to be displayed at the top of the page.~~
29. ~~As a lister, I would like to be able to submit the information in the form and see it posted in the homepage listings.~~
30. ~~As a lister, I would like to be able to view my posted listings on the page.~~
31. As a lister, I would like to be able to update my posted listings.
32. As a lister, I would like to see that the potential tenant is a verified student.

Message System
33. ~~As a user, I would like to easily view all my messages.~~
34. ~~As a potential tenant, I would like to be able to contact listers about their property.~~
35. As a lister, I would like to view all of my messages from potential tenants.
36. As a potential tenant, I would like to view all of my messages from listers.
37. ~~As a lister, I would like to have my messages to other listers and my messages from potential tenants be separated.~~
38. ~~As a potential tenant, I would like listers to have the names of their properties included to help differentiate them.~~

Map
39. As a potential tenant, I would like a map view to see where all of the properties are relative to campus.
40. As a lister, I would like the ability to input the location of my lease and have it show up on the map.
41. As a potential tenant, I would like the ability to scroll across the map and zoom in or out.
42. As a potential tenant, I would like the ability to search for an address on the map.
43. As a potential tenant, I would like my filters to be reflected onto the map.

~~User Page:~~ <-We added this page user stories this sprint
44. ~~As a user, I would like to see a user profile page with information about myself.~~
45. ~~As a user, I would like to be able to edit information in the user profile page.~~

Non Functional

Architecture and Performance
We will be using the MERN framework: Mongo.db, Express.js, React, and Node.js. We will develop frontend components using React. React is a library that reacts to changes in the data

and re-renders the UI accordingly. The middle of the tech stack will be Express.js and Node.js. Express.js is a server-side web framework, while Node.js is a JavaScript server platform. We will be using Mongodb Atlas to host the database in the cloud, to avoid the maintenance issues with hosting the database on our local machines.

To make our website as efficient as possible, scheduled tasks will be incorporated to fetch data from the database and update the front end. The plan right now is to incorporate a scheduled task for every 2 minutes so that listings are automatically updated on the home page. Since a chat feature is a critical part of the application, efficient use of calls will be focused on to reduce load times.

List of Performance Features:
1. The page should load all the content within 5 seconds of a refresh
2. The site should use a scheduled task to update the listings every 2 minutes
3. A listing can be posted or updated 24 hours a day.
4. Users can contact customer service for help with technical difficulties 24 hours a day.
5. Chats should refresh at most 20 seconds after a message is sent.

Security
Security will be a major point of emphasis as the site will be dealing with people's personal information. We will be hiding personal information behind user authentication to help protect privacy. Since we are focusing on students, all users will need to be affiliated with a university. Accounts will be verified through an authentication API and only verified users will have access to certain features such as messaging and viewing contact info.

We will be using an authentication API, such as Auth0. For instance, Auth0 provides a React SDK, which would allow us to implement Auth0 authentication and authorization in React apps.
1. We plan to use Auth0, an authentication API, to authenticate student emails.
2. Auth0 will connect to our database to securely store identity information.
3. Auth0 will give us extensibility and security capabilities such as brute force and suspicious IP throttling.
4. Auth0 will give us up to 7,500 monthly active users and unlimited logins.

Usability
Our goal is to make the website easy to use while still giving the user all the information about the property that they need. We want to include a main home page for all users that will show all available apartments to lease, with the ability to filter by various features like location, price, etc. We also need an additional option for current tenants to easily input information about their property. The website will also feature an admin view for property managers to view contracts and manage renters. Finally, we want to ensure our application is viewable and adjusts to various screen sizes from a laptop screen to a large screen monitor.

Hosting/Deployment

We plan to just use GitHub and develop locally as we work through the project, and then we will deploy it and make one final release after we have the main functionality of the site done. We plan to host our MongoDB server on the cloud.