

Townie

Sprint 1 Planning Document

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Sprint Overview

During this sprint, we hope to build a strong foundation for the components in our application. We want to establish a clear client, server, and database architecture that is reasonably fast and resilient to increased usage. We also want to quickly ensure that our architecture will be a solid foundation moving forward. The tools we have selected, despite some of us having experience with them, are a gamble in a sense. Early in sprint 1, we want to affirm that the tools are the right ones for us.

Scrum Master: Jon Hurley

Meeting Plan: Mondays/Wednesdays @ 6:00pm

Risks and Challenges:

The biggest risk for us as of now is the steep learning curve of the tools we have selected. While we picked tools with accessibility in mind, several, if not all, of our group members have minimal experience with them. Our primary goal for the first few days of sprint 1 will be thorough communication about how to model our infrastructure effectively and consistently. There are external resources that our project is dependent on, like Google Maps API, and our project has to be built in compliance with them.

User Story #1: Sign Up

As a user, I would like to create an account

Also includes: I would like to verify my account phone on creation.

#	Description	Estimated Time	Owner
1	Create the sign up page UI	2 hours	Jamie
2	Create server method to handle a new user signing up	2 hour	Sai
3	Create a server-side method for sending notification verification of signup.	2 hours	Sai
4	Create verification waiting page in UI	1 hour	Jamie
5	Create database query to store all relevant user fields	2 hour	Sai
6	Testing	4 hours	Jamie

Acceptance Criteria:

- Given that the sign up page is functioning, when I create an account by proceeding through the sign up page, I expect to be greeted with confirmation and a routed to a page to continue filling in my user information.
- Given that the server is functioning, when I create an account on the client side, I expect the server to receive that information and store it in a database.
- Given that the database is configured, when the server sends user information, I expect a new entry in the database to be created.
- Given that the database is configured and a user under the same info already exists, I expect to be informed on the client side that an account with those user credentials cannot be created.
- Given that account creation flow is functional, when users attempt to create an account, they should be asked to confirm their entries.

User Story #2: Sign In

As a user, I would like to sign into my account.

#	Description	Estimated Time	Owner
1	Create the sign in page UI	2 hours	Jamie
2	Create server method to handle user sign in	1 hour	Sai
3	Create an algorithm to quickly locate the user	2 hours	Sai
4	Create database query to validate user	2 hours	Sai
5	Testing	3 hours	Jamie

Acceptance Criteria:

- Given that the sign in page is functioning, when I try to sign in with correct information, I expect to be brought to the home page.
- Given that the sign in page is functioning, when I try to sign in with incorrect information, I expect to be denied access.
- Given that the sign in page is functioning, when I try to sign in with incorrect information, I expect to be given another opportunity to sign in.
- Given that the sign in page is functioning, when I try to sign in with incorrect information, I expect to be given a route to the reset password method.

User Story #3: Auto-sign in (also adding Auto-sign out here)

As a user, I would like the game to remember a previous login and start at the home page.

#	Description	Estimated Time	Owner
1	Modify the UI to store and detect tokens	3 hours	Jamie
2	Create server method to handle login via past token if possible, and issue a new token	2 hour	Sai
3	Create protected route middleware for token validation and updation	1 hour	Sai
4	Redirect user to app home page if successful	1 hour	Jamie
5	Have the UI sign out the user if on a protected page and token updation failed	2 hours	Jamie
6	Testing	3 hours	Sai

Acceptance Criteria:

- Given that the last token our user used is still valid or within some small window of expiry, when I try to open the app, I expect to be signed in automatically.
- Given that my last token goes invalid but still within the window of renewal, when I try to do anything in the app, I expect the server to issue me a new token and the request to complete successfully.
- Given that my last token goes invalid and is no longer still within the window of renewal, when I try to do anything in the app, I expect to be signed out automatically.

User Story #4: Password Reset

As a user, I would like the option to reset my password if I forget it.

#	Description	Estimated Time	Owner
1	Create a forgot password screen in the UI, link to it from the signin page	2 hours	Jamie
2	Create a server method for sending a reset password link	3 hours	Sai
3	Create a page for entering a new password	2 hours	Jamie
4	Create a server method for updating a password	2 hours	Sai
5	Sign in the user upon resetting password	1 hour	Sai
6	Testing	4 hours	Jamie

Acceptance Criteria:

- Given that the UI is implemented correctly, when the user clicks the forgot password, I expect they are taken to the reset password page.
- Given that a valid phone number is entered on the functional reset password page, when clicking the send reset link, I expect they are sent a notification with a link to a set new password page.
- Given the user is on the reset password page, if I enter an invalid password, I expect to be told that the password is incorrect and offered another chance to make a password.
- Given that the new password is valid on the functional set new password page, when they click update password, I expect their password is updated in the database, they are issued a token, and are logged in.

User Story #5: Update Account Info

As a user, I would like to update my account information.

#	Description	Estimated Time	Owner
1	Create a user profile page in the UI	2 hours	Jamie
2	Create a server method that takes new user info	1 hour	Sai
3	Create a server-side function for notification verification of account changes.	1 hour	Sai
4	Connect the server methods to the UI	2 hours	Sai
5	Testing	4 hours	Jamie

Acceptance Criteria:

- Given that the UI is implemented correctly, when the user updates their username, they should be able to see it updated in real time.
- Given the UI is implemented correctly, if I select the button to return to my profile, I expect it to be returned to my profile.
- Given that the server is implemented correctly, when the user inputs user credentials that are not valid, they should be notified accordingly and offered another chance to enter new information.
- Given that the user info infrastructure is functional, when a user goes to delete their account, I expect that it is done in real time and does not allow them to continue interacting with the game until they have created a new account.

User Story #6: Delete Account

As a user, I would like to delete my account.

#	Description	Estimated Time	Owner
1	Create a server-side delete account method that routes to the sign in page and removes the user.	2 hours	Sai
2	Connect the delete account method to the UI.	2 hours	Jamie
3	Testing	4 hours	Sai

Acceptance Criteria:

- Given that the UI is implemented correctly, if I go to my profile settings, I expect to be able to choose to delete my account.
- Given that the UI is implemented correctly, if I attempt to delete my account, I expect to be warned that this action cannot be undone.
- Given that the UI and functionality are implemented correctly, if I delete my account, I expect to be returned to the sign in screen.
- Given that the UI and functionality are implemented correctly, if I delete my account, I expect to be removed from all of my friends' friends lists.

User Story #7: Search Users

As a player, I would like to be able to search for other players by their usernames.

(Note: We will implement notifications by having a notification list stored in the user object)

#	Description	Estimated Time	Owner
1	Create a social/friends page in the UI with a search bar for usernames.	2 hours	Arnav
2	Create a server method that takes the username of another user as input to locate their profile.	2 hours	Jack
3	Create the UI functionality to populate with usernames.	3 hours	Arnav
4	Create the UI for the user's profile on the client side.	3 hours	Arnav
5	Implement test cases that cover all cases possible.	4 hours	Jack

Acceptance Criteria:

- Given that the UI is implemented correctly, if I select the social page from the homepage, I expect to be brought to the social page with a list of my friends.
- Given that the UI and functionality are implemented correctly, if I enter a username into the search bar, I expect to see a list of users whose usernames partially match the username I have entered.
- Given that the UI and functionality are implemented correctly, if I enter a username into the search bar and select that user, I expect to see the user's profile populate on my screen.
- Given that the UI and functionality are implemented correctly, if I enter a username into the search bar that belongs to no one, I expect to see a message that says "no users found".
- Assuming the UI and functionality are implemented correctly, if I enter my own username into the search bar, I expect to see my own profile pop up.

User Story #8: Add Friends

As a player, I would like to know if anyone I might know also has an account and befriend them.

#	Description	Estimated Time	Owner
1	Create a social/friends page in the UI	3 hours	Arnav
2	Implement the user search to search users and issue friend requests.	1 hour	Jack
3	Create a section on the social/friends page for accepting incoming requests.	2 hours	Arnav
4	Implement test cases that cover all cases possible.	4 hours	Jack

Acceptance Criteria:

- Given the social page is functional, when I open the social page, I expect to see the current user's friends list displayed.
- Given the social page is functional and the notification class has been implemented, I expect to see a confirmation message when the notification has been sent.
- Given the functionality to send friend requests has been implemented, when I send a message to a user that does not exist, I expect to see the UI populate with a messages showing that the user does not exist.
- Given the functionality to send friend requests has been implemented, when the other user accepts my friend request, I expect to receive a notification that my friend request has been accepted.
- Given the social page is functional, when I press a button to return to the homepage, I expect to be returned to the homepage.

User Story #9: Remove Friends

As a player, I would like to be able to remove users as friends.

#	Description	Estimated Time	Owner
1	Add a remove friends option to the UI	3 hours	Arnav
2	Create a server method to for removing friends	2 hours	Jack
3	Remove the connection between former friends in the DB	1 hour	Jack
4	Implement test cases that cover all cases possible.	3 hours	Jack

Acceptance Criteria:

- Given that the remove friend button is functional, when I remove a friend, I expect they immediately disappear from my friends list.
- Given that the UI and functionality is correct, if I select to remove a friend, I expect that I am removed from their friends list.
- Given that the notification feature is functions, when I remove a friend, I expect they will receive a notification that they are no longer my friend.
- Given that the backend is functional, when I remove a friend, I expect that our relationship is removed from the database.

User Story #10: Creating a Game/Group

As a user, I would like to create a game.

#	Description	Estimated Time	Owner
1	Implement single-user the waiting room page	2 hours	Arnav
2	Implement the Game class	2 hours	Jack
3	Implement the Group class	2 hours	Jack
4	Implement the GroupUser class	2 hours	Jack
5	Create a server method that adds the Game object with a Group with a single GroupUser, the creator, to the DB	3 hours	Jack
6	Implement web-socket connectivity	3 hours	Jack

Acceptance Criteria:

- Given that the waiting room page is functional, when I create a game, I expect to see the join ID of the game I just created.
- Given that the server is functional, when I create a game, I expect a web socket connection to the server to be established.
- Given that the server is functional, when I create a game, I expect the database to now contain the game and group information.

User Story #11: Joining a Game/Group

As a group player, I would like to form groups with other people looking to play the game.

#	Description	Estimated Time	Owner
1	Implement the joining room page	2 hours	Arnav
2	Create a server method for adding users to a Group, as a GroupUsers, given a valid Game pin/id.	3 hours	Jack
6	Direct the user to the game lobby / waiting page once the game pin/id is verified.	2 hours	Arnav
7	Implement group event emission via web-socket connections.	3 hours	Jack

Acceptance Criteria:

- Given that the join room page is functional, when I enter a valid game pin/id, I expect to be directed to the waiting room page and see all other members in the group.
- Given that the server methods are functional, when I join a group, I expect to be added as a GroupUser to the Game's Group in the database.
- Given that the server is functional, when I join a group, I expect my screen to be updated in real time with game changes (websocket event emission).

User Story #12: Location-Based Routes

As a player, I would like to input a location as a parameter so the system can narrow its focus in picking locations.

#	Description	Estimated Time	Owner
1	Implement location detection & selection in the game creation UI.	3 hours	Arnav
2	Create a server method for route generation that triggers the web-scraper	2 hours	Jon
3	Filter web-scraper destination results by their proximity (essentially creating the web-scraper)	5 hours (each)	Jon, Arnav

Acceptance Criteria:

- Given that a location is detected by the user, when going to the game generation screen, I expect that the current location is entered by default.
- Given that the location selection is functional, when entering my location, I expect that a list of autocomplete locations are visible for selection.
- Given that the web-scraper takes location input, when generating the route, I expect that the list of destinations is somewhat close to my starting location.

User Story #13: Game Map

As a player, I would like to see the map with my current location and the destination radius.

#	Description	Estimated Time	Owner
1	Implement the game page framework in the UI	2 hours	Arnav
2	Create a map on the game page with the Google Maps API	3 hours	Jon
3	Compute a radius around the first destination	2 hours	Jon
4	Implement the destination class	3 hours	Jon
5	Implement a database structure capable of storing destinations	2 hours	Jon
6	Create tests using unit tests	4 hours	Jon

Acceptance Criteria:

- Given the map is functional, when I begin a game, I expect the map to immediately be generated with the first destination
- Given the UI is functional, when I begin a game, I expect the map to be scaled correctly to my device
- Given the server is functional, when I begin a game, I expect my location relative to the destination to be accurate.
- Given the server is functional, when I begin a game, I expect the radius around the destination to not necessarily be centered at the destination.

User Story #14: Game Settings - Radius

As a player, I would like to specify a general radius.

#	Description	Estimated Time	Owner
1	Implement the radius option on the game creation UI page.	2 hours	Arnav
2	Implement the server method to update the current game in creation with the new radius.	2 hours	Jon
3	Implement polling the database with the current/given location and the radius for any previously scraped locations.	3 hours	Jon
4	Create and verify tests using unit tests.	4 hours	Jon

Acceptance Criteria:

- Given the radius system has been implemented appropriately, if I select “Other” in the drop-down menu, I expect to see a text box to input my own radius number.
- Given the radius system has been implemented appropriately, if I select “Other” in the drop-down menu and input a negative number, I expect to see a message saying that I cannot input a negative radius.
- Given the radius system has been implemented appropriately, if I select a distance in the drop-down menu, I expect to have a radius of that distance in the game.
- Given the radius system is correct, if I select “Other” and choose a radius greater than the maximum offered by the drop-down menu, I expect to see a message saying that I cannot input a radius that large.

User Story #15: Game Settings - Transportation

As a player, I would like to specify a mode of transportation.

#	Description	Estimated Time	Owner
1	Implement the enable transportation modes option on the game creation UI page.	2 hours	Arnav
2	Implement the server method to update the current game in creation with the enabled modes of transportation selected	2 hours	Jon
3	Integrate transportation filtering on the game route generation engine.	5 hours	Jon
4	Create and verify tests using unit tests.	3 hours	Jon

Acceptance Criteria:

- Given the transportation selection system has been implemented appropriately, when I enable or disable a certain mode of transportation and save it, I expect that the GameSettings object for this Game is updated.
- Given that the group updates are functional, when I enable or disable a certain mode of transportation, I expect those updates to be immediately visible to others in the group.
- Given the transportation filtering on the route generation engine is functional, when I generate a route, the route provided should not require the modes of transportation we do not wish to use.

Remaining Backlog

1. User account

As a user,

- ~~a. I would like to create an account.~~
- ~~b. I would like to sign into my account.~~
- ~~c. I would like the game to remember a previous login and start at the home page.~~
- ~~d. I would like the option to reset my password if I forget it.~~
- ~~e. I would like to know if anyone I might know also has an account and befriend them.~~
- ~~f. I would like to provide two factor authentication.~~
- ~~g. I would like to verify my account email on creation.~~
- ~~h. I would like to update my account information.~~
- i. I would like to choose if my exact location remains private.
- j. I would like a viewable log of my trips.

2. Game creation

As a player,

- ~~a. I would like to input a location as a parameter so the system can narrow its focus in picking locations.~~
- b. I would like to input themes as a parameter so the system can parse through locations with an emphasis on those themes.
- c. I would like to have a random theme chosen that could be chosen as a result of satisfaction rates with previous themes.
- d. I would like to specify a budget so the system can steer away from locations that would violate that budget.
- e. I would like to specify a time frame so the game knows how many locations to pick and roughly how far apart those locations can be.
- ~~f. I would like to specify a general radius.~~
- ~~g. I would like to specify a mode of transportation.~~
- h. I would like the game to curate some fully premade levels.
- i. I would like for the game to have a tutorial with the ability to replay the tutorial using a help button.

3. Map interaction

As a player,

- a. I would like the search radius to shrink proportional to the time frame.
- b. I would like to export the general radius of a location to google maps so I can use navigation.
- c. I would like the destination radius to shrink as I approach the destination.
- d. I would like to know an estimation of how long it would take to get to the first location.

~~e. I would like to see the map with my current location and the destination radius.~~

4. Game play

As a player,

- a. I would like a timer for how long it has taken both for the whole game and for the location at hand.
- b. I would like to be given the opportunity to “pause” the game to enjoy the location.
- c. I would like to be given the opportunity to skip a location.
- d. I would like the ability to change the time frame after starting the game.
- e. I would like to “peek” at a location in exchange for a number of points I have earned.
- f. I would like the ability to end the game early.
- g. I would like to know some fun facts about the location in which I have arrived.
- h. I would like a casual version which puts together a fun day with or without a theme, without hiding anything (like an impromptu itinerary for the day).

5. Group formation

As a group player,

- a. I would be alerted if any friend, member from a previous group, or friend of friend happens to be on the app and would like to form a group.
- ~~b. I would like to add other users as friends.~~
- ~~c. I would like to form groups with other people looking to play the game.~~
- d. (If time allows) I would like to have a chat for me and my friends to communicate.
- e. I would like to be able to share a day with friends and family.
- f. I would like to be able to keep track of where my friends are.

6. Realtime notifications

As a player,

- a. I would like the game to notify me when I have reached the location.
- b. I would like the game to form days for me without my instantiation, serving as an impromptu adventure. I would like the game to do this once a week.

7. Ranking System

As a player,

- a. I would like to gain points for each successful guess.
- b. I would like points earned to scale with time spent searching (more points for quicker times) .
- c. I would like to spend points to add visual skins to the UI and display trophies of my games.
- d. I would like to have a ranking system based on how many games I have played.
- e. (If time allows) I would like to use my points to earn gift cards from locations.

8. Rating system

As a player,

- a. I would like to rate specific themes.
- b. I would like to share my trips online (social media platforms).
- c. I would like to rate my satisfaction with the destinations.

Non Functional Requirements

- 1. Performance
 - a. I would like the application to run smoothly without crashing.
 - b. I would like to handle 10,000 to 15,000 simultaneous requests.
- 2. Server
 - a. I would like the server to store user data in a graph database.
 - b. I would like client-side caching (local database) with Redis.
- 3. Appearance
 - a. I would like an aesthetically pleasing user interface.
 - b. I would like to allow users to customize their profiles.
- 4. Security
 - ~~a. I would like OAuth 2.0 authentication~~
 - b. I would like to provide protections against cross site forgery.
 - c. I would like to provide protections against cross site scripting.
 - d. I would like to provide protections against SQL injection.
- 5. Usability
 - a. I would like the game's UI to lead the users in the game
 - b. I would like the app to be straightforward with a small learning curve