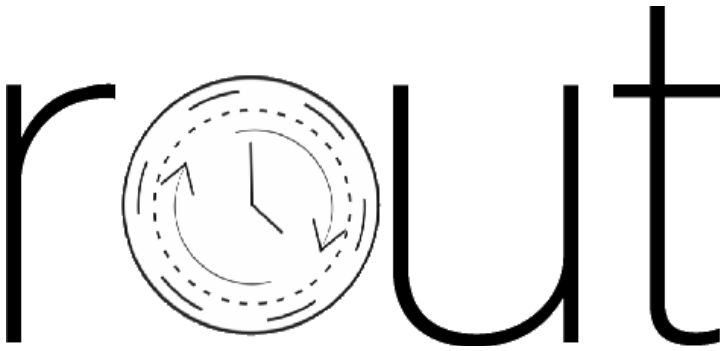

CS 30700 Sprint 2 Planning Document
03.16.2021

Team 17 :
Steven Bass
Luke Irons
Logan Sweeney
William White
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Sprint 2 Overview:

This goal for this sprint is to flesh out the UI to include elements we created in sprint 1 as well as finish incomplete tasks from sprint 1. By the end of the sprint, we hope to have the website in a working state that is just missing some small features. Route storage is also in the works for this sprint.

Scrum Master: Austin Wilson

Meeting Plan: Monday/Wednesday/Friday @ 6:30pm

Risks and Challenges:

Our biggest concern for this sprint is that route storage will be more difficult to implement than anticipated. Our DB is set up so storing the rout object shouldn't be a problem, but retrieving the route from the routing algorithm might prove to be difficult. In addition, two factor authentication may be a bit of a challenge. Two factor email authentication shouldn't be difficult because the system is already in place, but two factor SMS authentication may prove to be challenging because Node JS has no library module for sending text messages.

Sprint 2 User Stories:

User Story #1:

As a user, I would like to be able to reset my password through SMS.

#	Description	Estimated Time	Owner
1	Generate a unique 6 digit string to be sent through SMS for confirmation.	2 Hour	Logan
2	Send the 6 digit code to the user through SMS	3 Hours	Logan
3	Change user's password if correct 6 digit code is entered.	2 Hours	Logan

Acceptance Criteria:

- 6 Digit Code is not retrievable from the client side.
- 6 Digit Code is sent to the user within 15 minutes of request.
- User's new password must be between 6 and 32 characters.
- Testing easily performed manually through trying out the password reset system.

User Story #2:

As a user, I would like to be able to secure my account with 2 factor email authentication.

#	Description	Estimated Time	Owner
1	User account page allows enabling of 2FA	2 Hours	Logan
2	On login with correct login information, send user generated 6 character code.	3 Hours	Logan
3	Login the user if the code entered is the same as the code sent to the email.	2 Hour	Logan

Acceptance Criteria:

- 6 character Code is not retrievable from the client side.
- 6 character Code is sent to user within 15 minutes of login
- 2FA enabling requires confirmation (send user the code, if entered correctly, enable 2FA)
- Testing easily performed manually through trying out the password reset system.

User Story #3:

As a user, I would like to be able to secure my account with 2 factor SMS authentication.

#	Description	Estimated Time	Owner
1	User account page allows enabling of 2FA SMS	2 Hours	Logan
2	On login with correct login information, send user generated 6 character code.	2 Hours	Logan
3	Login the user if the code entered is the same as the code sent through SMS.	2 Hour	Logan

Acceptance Criteria:

- 6 character Code is not retrievable from the client side.
- 6 character Code is sent to user within 15 minutes of login
- 2FA enabling requires confirmation (send user the code, if entered correctly, enable 2FA)
- Users can choose between 2FA email and 2FA SMS. They can have neither, but not both.
- Testing easily performed manually through trying out the password reset system.

User Story #4:

As a developer, I would like to be able to edit user information within the database.

#	Description	Estimated Time	Owner
1	Allow tables to be changed in the database to edit user information.	3 Hour	Steven
2	User login should reflect new changes within the DB.	2 Hours	Steven
3	Non-developer users should be blocked from editing user information	2 Hours	Steven

Acceptance Criteria:

- Should be able to manipulate user accounts and routes created across all users.
- Should require additional authentication after connecting to the database.
- Should only be accessible by dev users.
- Manual testing to ensure proper reading/writing.

User Story #5:

As a developer, I would like administrator accounts which give access to backend data.

#	Description	Estimated Time	Owner
1	Dev accounts are flagged in the DB with a dev boolean.	3 Hour	Logan, Steven
2	Developer UI screen can be accessed from the landing page only if the logged in user is flagged as dev.	3 Hours	Logan, Steven
3	Developer UI screen should display site statistics.	6 Hour	Logan, Steven

Acceptance Criteria:

- Site statistics should include the number of accounts, number of users currently logged in, and number of routes created across all users.
- Site statistics page should only be accessible by dev users.
- Administrator accounts should be created through the DB.
- Manual testing to ensure only dev accounts can access the statistics page.

User Story #6:

As a developer, I would like to be able to view usage metrics of Rout.

#	Description	Estimated Time	Owner
1	Usage metrics should be viewable in the statistics page.	3 Hour	Steven
2	Usage metrics should be stored server side and updated as users interact with Rout.	2 Hours	Steven
3	Non-developers should be prohibited access from the statistics page	2 Hours	Steven

Acceptance Criteria:

- Metrics tracked should include number of accounts, number of users currently logged in, and number of routes saved across all users.
- Site statistics page should only be accessible by dev users.
- Site statistics should be accurate to the database at the time of fetching.
- Manual testing by comparing displayed data with stored database info.

User Story #7:

As a user, I would like to be able to adjust default measurements between Miles/Kilometers.

#	Description	Estimated Time	Owner
1	Create user personalization field in database for setting default distance unit	2 Hours	Steven
2	Parameterize fields to display value corresponding to user's default	3 Hours	Steven
3	Handle unit conversions between possible user input and known units of algorithm input	3 Hours	Steven

Acceptance Criteria:

- The correct unit should be displayed as the default text in each form field (i.e: "Distance (km)" or "Distance (miles)").
- All units should be standardized before being passed to the route-finding algorithm.
- Manual testing to verify unit preferences reflected in text.
- Manual testing to compare converted values against expected value, given a known conversion factor.

User Story #8

As a user, I would like to be able to visualize the amount of calories I've burned.

#	Description	Estimated Time	Owner
1	Design UI of user statistics page	2 Hours	Austin
2	Implement UI of user statistics page	10 Hours	Austin
3	Create calories section of user statistics page	4 Hours	Austin

Acceptance Criteria:

- The UI design of the user statistics page is viewable on open of the page and is visually pleasing.
- The user statistics related to calories is stored in its own section to differentiate itself from other possible statistics.
- The calories statistics should have a viewable image or graph representing past routes calories burned.
- Testing will be done manually through the viewing of the UI to insure UI looks and works as intended.

User Story #9

As a user, I would like to compare my pace with distances similar to those ran by famous or olympic runners.

#	Description	Estimated Time	Owner
1	Create comparison section of the user statistics UI	3 Hours	Austin
2	Store distance and time of popular runners	2 Hours	Austin
3	Display comparison between popular runners and the user	3 Hours	Austin

Acceptance Criteria:

- The user statistics related to comparisons is stored in its own section to differentiate itself from other possible statistics.
- Distance and times of popular runners would be stored as variables in the front end and can be easily changed as needed.
- Comparison between users and popular runners should show times where the distance ran is similar.
- Testing will be done manually through the viewing of the UI to insure UI looks and works as intended.

User Story #10

As a user, I would like to find a new route without needing an account.

#	Description	Estimated Time	Owner
1	Research and testing to get Typescript working in React project	6 Hours (split)	William, Austin
2	Integrate Google Maps Javascript API code with algorithm into the React Webpage	6 Hours (split)	William, Austin
3	Test and debug	3 Hours	William

Acceptance Criteria:

- The Google Maps element is visible on the main page with a working algorithm.
- Either Typescript or Javascript can be used to further develop the algorithm within the React project.
- User inputs are correctly sent to and used by the algorithm.
- The Google Maps Directions output is visible on the main page.
- Manual testing will be done through giving inputs to the algorithm and checking the output for approximate correctness.

User Story #11

I would like to find multiple routes from the same starting point.

#	Description	Estimated Time	Owner
1	Research and create method to allow for the route generation algorithm to generate multiple routes	2 Hours	Luke
2	Implement changes to current route generation algorithm	10 Hours	Luke
3	Test and debug functionality	2 Hours	Luke

Acceptance Criteria:

- Given that the algorithm is functional, when the user chooses to generate routes, the algorithm should generate multiple routes.
- Given that the user has chosen to generate routes, when the algorithm completes its API calls, multiple routes should display on the map UI.
- Given that multiple routes are being displayed, when the user wants to choose a specific route, they should be able to choose any of those shown.
- Given that the algorithm was successful, when the different routes are created, they should all be similar lengths.
- Manual testing will be done through running the algorithm with various inputs to ensure that multiple runnable routes are generated

User Story #12

As a user, I would like to use an address as a start point.

#	Description	Estimated Time	Owner
1	Allow user input of an address as a starting point for the route.	2 Hours	Luke
2	Implement the address as a starting point within the routing algorithm	6 Hours	Luke
3	Test and debug functionality	2 Hours	Luke

Acceptance Criteria:

- Given that the routing algorithm is implemented correctly, when the user chooses to generate a new route, they should be able to use an address as a starting point.
- Given that the user can choose an address as a starting point, when the user chooses to generate a route, the route should display with the address chosen as the starting point.
- Given that the user is able to input an address, if that address is invalid, it will be handled appropriately through an error message or another suitable solution.
- Manual testing will be done through running the algorithm with various inputs to ensure that different addresses generate runnable routes.

User Story #13

As a user, I would like to have autocomplete when typing an address.

#	Description	Estimated Time	Owner
1	Use Google Maps APIs to develop method to add autocomplete to address input	2 Hours	Luke
2	Implement method within the algorithm	4 Hours	Luke
3	Test and debug using unit tests	2 Hours	Luke

Acceptance Criteria:

- Given that the user is able to input an address, when the user is typing in the address, autocomplete should display.
- Given that the user is able to input an address, when the user has entered the autocompleted address, the route should generate normally.
- Given that the user has used the autocompleted address, when the route is generated, it should display with the correct address as the starting point.
- Manual testing will be done through inputting various addresses to make sure autocomplete generates real addresses. Each of these autocompleted addresses should also function within the algorithm correctly.

User Story #14

As a user, I would like to find a route using distance.

#	Description	Estimated Time	Owner
1	Link UI element for distance to Route Finding Algorithm with options for kilometers or miles	1 Hour	William
2	Modify current algorithm to be more accurate from inputted distance to route	4 Hours	William
3	Test and Debug	2 Hours	William

Acceptance Criteria:

- User is able to specify a distance, either kilometers or miles, within the main page and create a route.
- The route is of the specified distance within 0.25 miles.
- The distance of the route is displayed with the units that were given.
- Testing will be done manually to ensure routes are within .25 miles of specified distance.

User story #15

As a user, I would like to find a route by hilliness.

#	Description	Estimated Time	Owner
1	Research how to get altitude changes on a route	3 Hours	William
2	Create method that find routes with larger altitude changes and routes with less altitude changes	4 Hours	William
3	Create UI element that displays altitude change under details box	4 Hours	William
4	Test and Debug	3 Hours	William

Acceptance Criteria:

- Users are able to check UI element to create a route that has a relatively large number of altitude changes.
- Users are able to check UI element to create a route that has a relatively small number of altitude changes.
- Users are able to see the altitude throughout the running route under the details tab.
- Testing will be done manually using the UI element to ensure hilly route has more altitude changes than non-hilly route.

User story #16

I would like to find a route using time and a pace.

#	Description	Estimated Time	Owner
1	Link UI Element to Route Finding Algorithm	1 Hour	William
2	Create method to convert time and pace to distance before sending it to route algorithm	1 Hour	William
3	Test and Debug	1 Hour	William

Acceptance Criteria:

- User is able to specify time and pace and correctly create route of calculated distance in miles.
- The time, pace, and distance is visible on the UI.
- The distance displayed will be the same as the currently selected UI element.
- Manual testing will be done to ensure that the time and pace correctly converts to distance and the route is within .25 miles of that distance.

Sprint 1 - Incomplete User Stories, Tasks, & Acceptance Criteria

User Story #6

As a user, I would like to be able to customize my nickname on my profile.

#	Description	Estimated Time	Owner
1	Create UI element for allowing users to change nickname	2 Hour	Logan
3	Create UI element for allowing users to change profile pictures	2 Hours	Logan
4	Get Password Reset Email to Properly Send	3 Hours	Logan

Acceptance Criteria:

- Nicknames should be restricted to being alphanumeric and between 3-32 characters.
- User nicknames should be displayed on each page of Rout.
- Users should be allowed to change nicknames multiple times.

Note: User stories 9 and 10 were combined because both used the same HTTP API that was not generating HTTPS requests viewable on the website.

User Stories #9 and #10

As a user, I would like for outside temperature to be displayed in the route planning screen.

As a user, I would like for outside weather conditions (rain, snow, etc) to be displayed in the route planning screen.

#	Description	Estimated Time	Owner
2	Implement the outside temperature into the panel	2 Hours	Austin

#	Description	Estimated Time	Owner
2	Implement the outside weather into the panel	2 Hours	Austin

Acceptance Criteria:

- HTTPS request is given from the GET button.
- Information received is viewable on the weather component.
- Information is updated when the GET button is pressed again.

Sprint 2 Total Hours:

Steven: 29 Hours

Luke: 32 Hours

Logan: 33 Hours

William: 33 Hours

Austin: 30 Hours

Backlog:

Functional

User Account:

As a user,

- ~~I would like to find a new route without needing an account.~~
- ~~I would like to register a new Rout account.~~
- ~~I would like to login to my Rout account.~~
- ~~I would like to logout of my Rout account.~~
- ~~I would like to be able to reset my password through email.~~
- ~~I would like to be able to reset my password through SMS.~~
- ~~I would like to be able to secure my account with 2 factor email authentication.~~
- ~~I would like to be able to secure my account with 2 factor SMS authentication.~~
- ~~I would like to be able to customize my nickname on my profile.~~
- ~~I would like to be able to customize my profile with a profile picture.~~

User Interface:

As a user,

- ~~I would like the UI of the website to be easily understood and used.~~
- I would like a brief tutorial on the UI the first time I use the application.
- ~~I would like to adjust the color of the UI to dark mode.~~
- ~~I would like the website to have a visually appealing color palette.~~
- ~~I would like to be able to adjust default measurements between Miles/Kilometers.~~
- I would like to have a UI element to customize what type of route I am looking for.

Route Planning:

As a user,

- ~~I would like for outside temperature to be displayed in the route planning screen.~~
- ~~I would like for outside weather conditions (rain, snow, etc) to be displayed in the route planning screen.~~
- ~~I would like for date/time information to be displayed in the route planning screen.~~
- ~~I would like to drop a pin to use as a start point.~~

- ~~I would like to use an address as a start point.~~
- ~~I would like to have autocomplete when typing an address.~~
- I would like to be able to see important turning points on my route through Google 360° Street View.
- ~~I would like to find multiple routes from the same starting point.~~
- ~~I would like to find a route using distance.~~
- ~~I would like to find a route using time and a pace.~~
- ~~I would like to find a route by hilliness.~~
- I would like to find a route only on sidewalks.
- I would like a "difficulty score" based on the intensity of my route.
- ~~I would like to plot routes with specific waypoints to pass through.~~
- I would like to track my progress along a route in real time via GPS.

Route Completion:

As a user,

- I would like to save a route for future use.
- I would like to view and use saved routes.
- I would like to be able to export saved routes as a file for sharing purposes.
- I would like to be able to share routes with other users through a URL.
- I would like to be able to share my routes through popular social media services (Facebook, Twitter, Instagram).
- I would like to be able to rate a route following its completion.
- I would like to know the pace of the previous route.

User Statistics:

As a user,

- I would like to see how many calories I've burned after taking a route.
- ~~I would like to be able to visualize the amount of calories I've burned.~~
- I would like to view my total calories burned over all routes I've taken.
- ~~I would like to compare my pace with distances similar to those ran by famous or olympic runners.~~
- I would like the information and statistics of previous routes to be stored.

Non-Functional

As a developer,

- I would like the pathfinding algorithm to run in polynomial time.
- ~~I would like administrator accounts which give access to backend data.~~

- I would like to be able to push changes to the UI without taking down the site for management.
- ~~I would like to implement a pathfinding algorithm which uses the Google Maps Directions API.~~
- ~~I would like to use the Google Maps API to create possible routes.~~
- I would like a Javascript framework for making calls to the Google Maps API.
- ~~I would like to be able to edit user information within the database.~~
- ~~I would like a MySQL database for storing account information.~~
- ~~I would like to be able to view usage metrics of Rout.~~