Binnacle

Sprint Plan #3
May 5 2019

High Level Goals

The application has all the data points collected (from the phone and from the bluetooth sensor package) and the algorithm available locally on the phone. We can now begin doing the integration between the two systems using a "navigator." The navigator will bridge the gap and give actions sailors can perform to be able to sail better. This is done through several features. One being a map view that allows sailors to see the route they are going to sail beforehand. Additionally, they will be able to view the route they sailed. We are updating the binnacle to use an event system so it can receive notifications of actions the sailor needs to take (such as correcting the heading or to tack now). The binnacle respond with custom user interfaces for these different events (such as telling the user when to tack).

Epic

The algorithm tells sailors what direction to head in and sailors can see a visualization of what the algorithm wants them to do.

Work To Be Done (50 Total Task Points)

** indicates priority tasks. They block other tasks from being done.*

1. As a sailor, I want to be able to view the optimal path on a map. **Total task points: 18**
    a. *Map screen (using Google Maps) **(3) (Daniel)**
    b. Input to get into the map screen (Snapchat gesture sliding navigation) **(5)**
    c. Input start and end points through placing points on the map by dropping pins **(5) (Will)**
    d. Draw a route from a list of points utilizing lines **(5)**
2. As a sailor, I want real-time navigation updates. **Total task points: 26**
    a. *Navigator class takes in start, end, and wind and puts it into the algorithm **(3) (Donovan)**
    b. Event system using streams **(2)**
    c. Tack now calculation to figure out when a sailor should tack **(5)**
    d. Tack now popup UI **(5)**
    e. Off course calculation to trigger a recalculation of the optimal path **(5)**
    f. Ideal heading calculation **(3) (Nick)**
    g. Ideal heading UI in binnacle **(3)**

3. As a sailor, I want to be able to view my sailed path on a map. **Total task points: 6**
    a. Implement a ReplaySubject that will save the Position Provider stream on navigation while navigating a course **(3) (Casey)**
    b. Draw the recorded sailed path on the map **(3)**

Backlog

1. As a sailor, I would like to be able to hear the navigation actions I need to take so I don't need to look at my phone.
2. As a racer, I want to save my sailed path and the optimal path so I can study it later.
3. As a user, I want to be able to download the app on my Android or iPhone from the app store.

Roles

Product Owner: Daniel Richards
Scrum Master: Casey Hillers
Presentation Master: William Walker
Developers: Donovan Rost, Nicholas Kalscheuer