Final Demo

Team On A Cob

Photo: Dr. Liu, Student Research Expo

Introduction

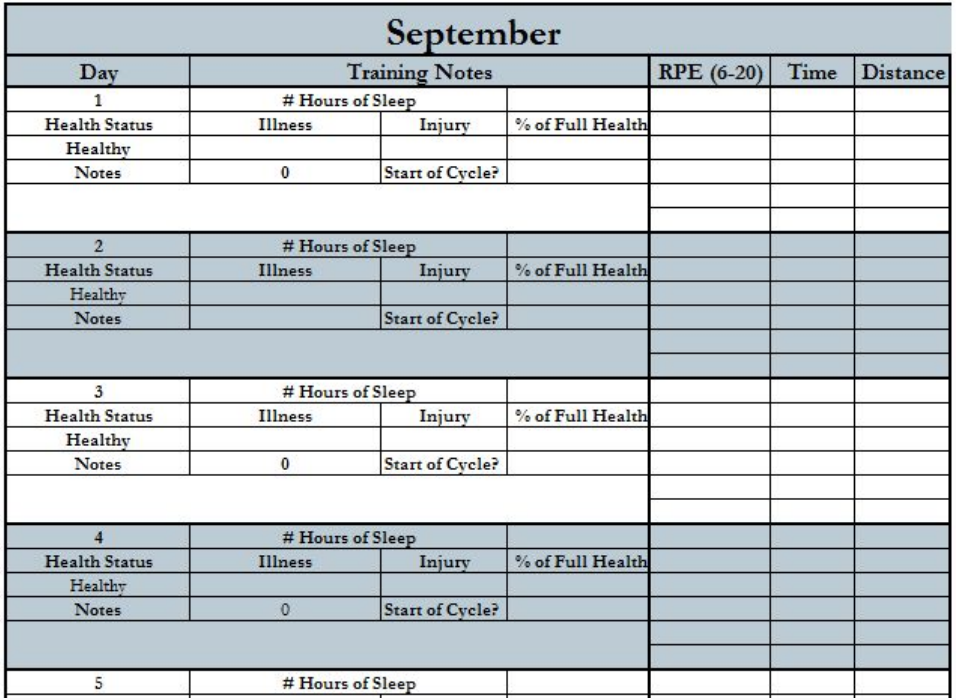
- The Personal Performance Application (temporary name), is a web based application designed with the idea of data collection and analyzation for sports teams.
  - The application allows athletes to enter in daily workout data, which can then be viewed and analyzed at a later date.
  - Coaches will be able to view data from every athlete on their team in a variety of ways
    - Raw data
    - Graphs
    - CSV download

Tools used in Development

- Node.js - backend framework
  - Npm package manager - https://www.npmjs.com
  - Express.js sessioning tool - https://expressjs.com
  - Passport.js authentication tool - http://passportjs.org
  - MySQL.js mySQL interface tool - https://github.com/mysqljs/mysql
- Slack - Communication tool - https://slack.com
- Github - Version Control - https://github.com
- Amazon Web Services - hosting - https://aws.amazon.com/free
- Cloud9 - remote development environment - c9.io

System Requirements

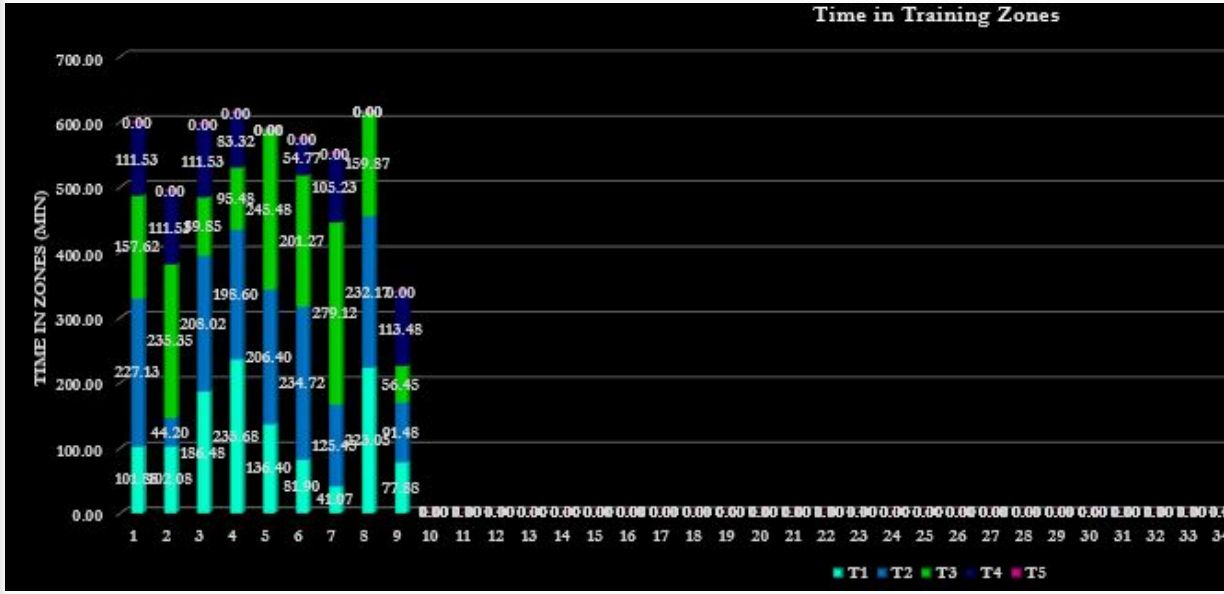
- Original method of collecting user data was through Excel sheets.
- Sheets had to be emailed around to each user and compiled weekly.
- This is a reasonably effort-intensive task for both the users and researchers.
- Thus, the system should allow users to enter data online and allow researchers to access that data online.



September						
Day	Training Notes			RPE (6-20)	Time	Distance
1	# Hours of Sleep					
Health Status	Illness	Injury	% of Full Health			
Healthy						
Notes	0	Start of Cycle?				
2	# Hours of Sleep					
Health Status	Illness	Injury	% of Full Health			
Healthy						
Notes		Start of Cycle?				
3	# Hours of Sleep					
Health Status	Illness	Injury	% of Full Health			
Healthy						
Notes	0	Start of Cycle?				
4	# Hours of Sleep					
Health Status	Illness	Injury	% of Full Health			
Healthy						
Notes	0	Start of Cycle?				
5	# Hours of Sleep					

System Requirements

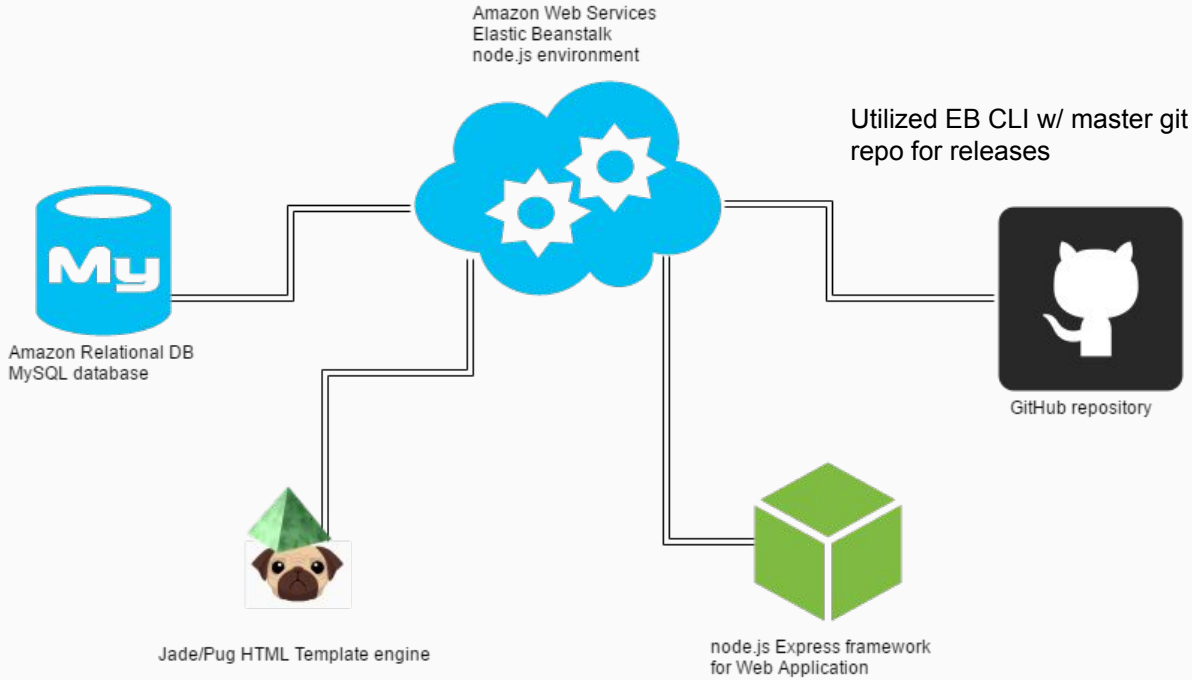
- The original version of this system allowed researchers to view many different representations of the data
- Ideally, this web application should also allow the the administrators to view statistics and representations of the workout data.
    - We realized pretty early on that it would be difficult to build this into the system while also building the data collection system.



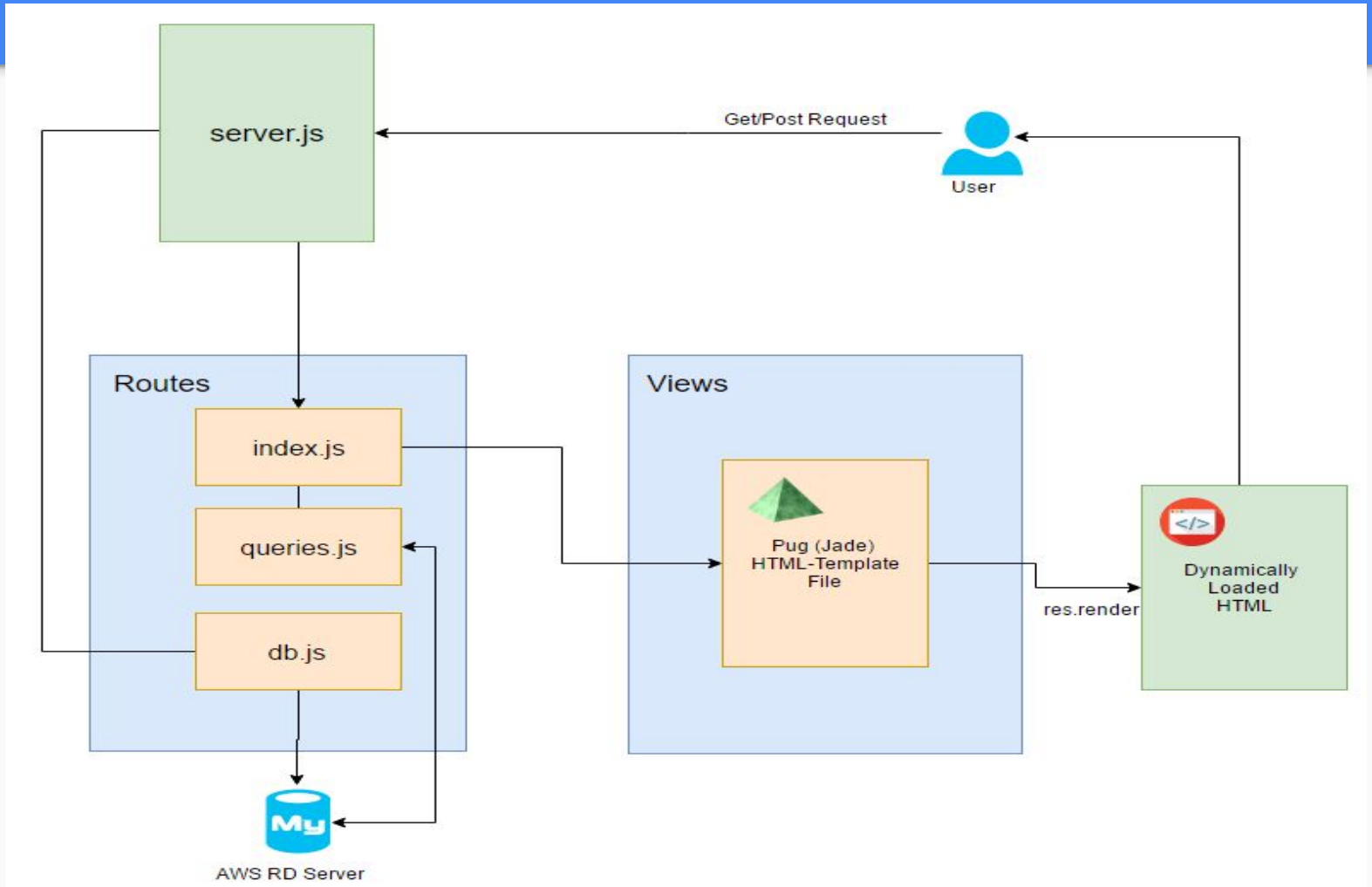
System Requirements

- This is a web application hosted on an Amazon Web server
  - Theoretically should work on any device with internet Access
  - Has been tested in Safari, Chrome, Firefox, and Microsoft Edge browsers
- Scaling provided for mobile devices to provide better user experience regardless of device.

Technology Architecture



Code Architecture



System Implementation

- Node.js - Although none of us had experience Node.js works well with AWS
  - Popular framework, npm package manager is easy to use and has many libraries
  - Alternatives: Python, Java, PHP
- AWS - Free tier hosting is easier to set up than building our own server
  - Alternatives: Heroku, self managed server
- Express.js - provides a web framework that is easy to work with
  - Alternatives: Koa, Hapi, sails.js
- MySql - Relational database which we had experience with
  - Falls in the free tier of AWS
  - Alternatives: MongoDB, postgresql, nosql

System Implementation contd

- Passport.js - Middleware to provide authentication
  - Fairly simple to work with, can be dropped in any express based application
  - Free
  - Alternatives: Stormpath, EveryAuth
- Google Analytics with universal-analytics library
  - Extremely simple to use, keeps track of a lot of information out of the box
  - Most popular Analytics engine
  - Alternatives: Segment.io
- Pug HTML Template Engine
  - Allows dynamic rendering of HTML with data being passed in from server easily

Sprint 1

- Sprint 1 consisted of bug fixes, allowing users to change password, and getting interval workout capabilities.
- There was a change in requirements from the client
  - Instead of focusing on just Cross Country athletes, we changed the application to take generic workout entries (wrestling, running, etc).

Static Analysis

- Each ran static analysis on portions of the code
  - Database code had some issues with common javascript practice e.g. == vs. ===
    - Mostly small, quick-fix errors as a result of our collective inexperience with Javascript
- Pug files didn’t generate any HTML errors (shows that Pug templates output valid HTML files).

Sprint 2

- Much of Sprint 2 was focused on preparing the site for beta testing
  - This involved working on password hashing (as we didn't want to be able to see user passwords in database) and considering what functionalities the client needed as an administrator to control testing without our involvement.
- We also implemented Google Analytics at this point
  - Data sent to analytics engine on every page visit
- Added edit workout page using Materialize modals.

Conclusions from Analytics

- Users spend under a minute on the workout entry page, (should be most used page on application)
- Users are going to spend more time viewing data, and less time entering data

Sprint 3

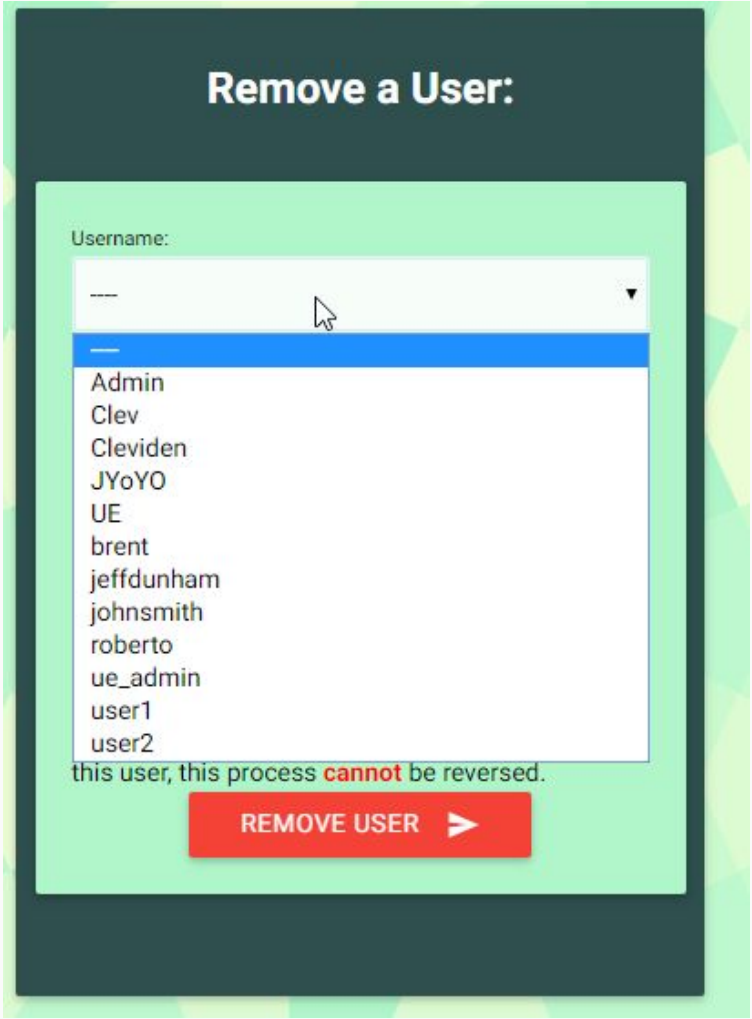
- Sprint 3 consisted of the implementation of a newly requested feature (acute:chronic ratio line on charts) as well as making some more changes to prepare for beta testing.
    - Included many new pages for administrator actions
        - Create team
        - Link user to team
        - Remove user
        - etc

Preliminary Testing

- The client and one other user tested the application for about a week long period during the spring break time frame.
- Feedback seemed positive, client enjoyed the ability to use on mobile
- Testing found some confusing terminology, and led to some more useful information being shown in charts such as a 30 day rolling average.
- No reported showstopper bugs were found

Sprint 4

- During Sprint 4, we made some small changes related to client feedback from beta testing.
- We also finished the dynamic drop down selections
- We also changed the aesthetics of the application quite a bit.



Sprint 5

- Because time was running out in the semester, we did not work on any new features during this sprint
- Instead, we worked on cleaning up and documenting the codebase
- We also fixed a few security issues that would be bad for a live deploy
  - SQL injection
  - Database login info on public repository on Github.

User Experience

- We found that the functionality of the website is dependent on special knowledge of the user base, which will be controlled by the admins.
  - Vernacular of website is specific to the group of users that it is intended for
  - So other than aesthetics, hard to get judgement on actual user experience.

Future plans of project

- Client now has his own AWS account where he can manage the application.
- Application is expected to go into preliminary use this summer for the women’s cross country team in order to collect training data
- The client has indicated that there is interest in moving forward with this project for further development

Demo/Links

http://ohioperformanceprogram.us-west-2.elasticbeanstalk.com

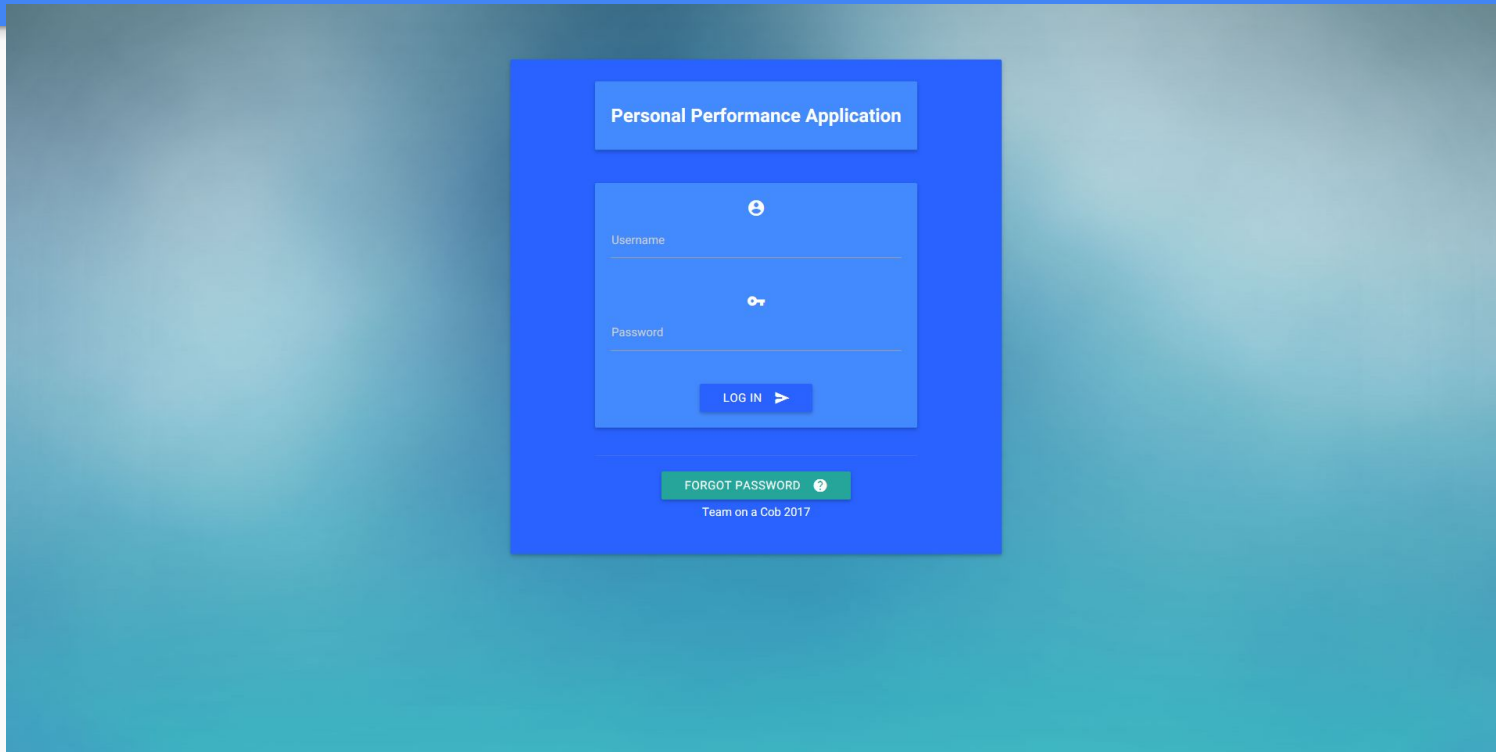
Video Backup

Project Documentation (requirements/implementation/etc)

GitHub repo w/ README and Build instructions

Screens

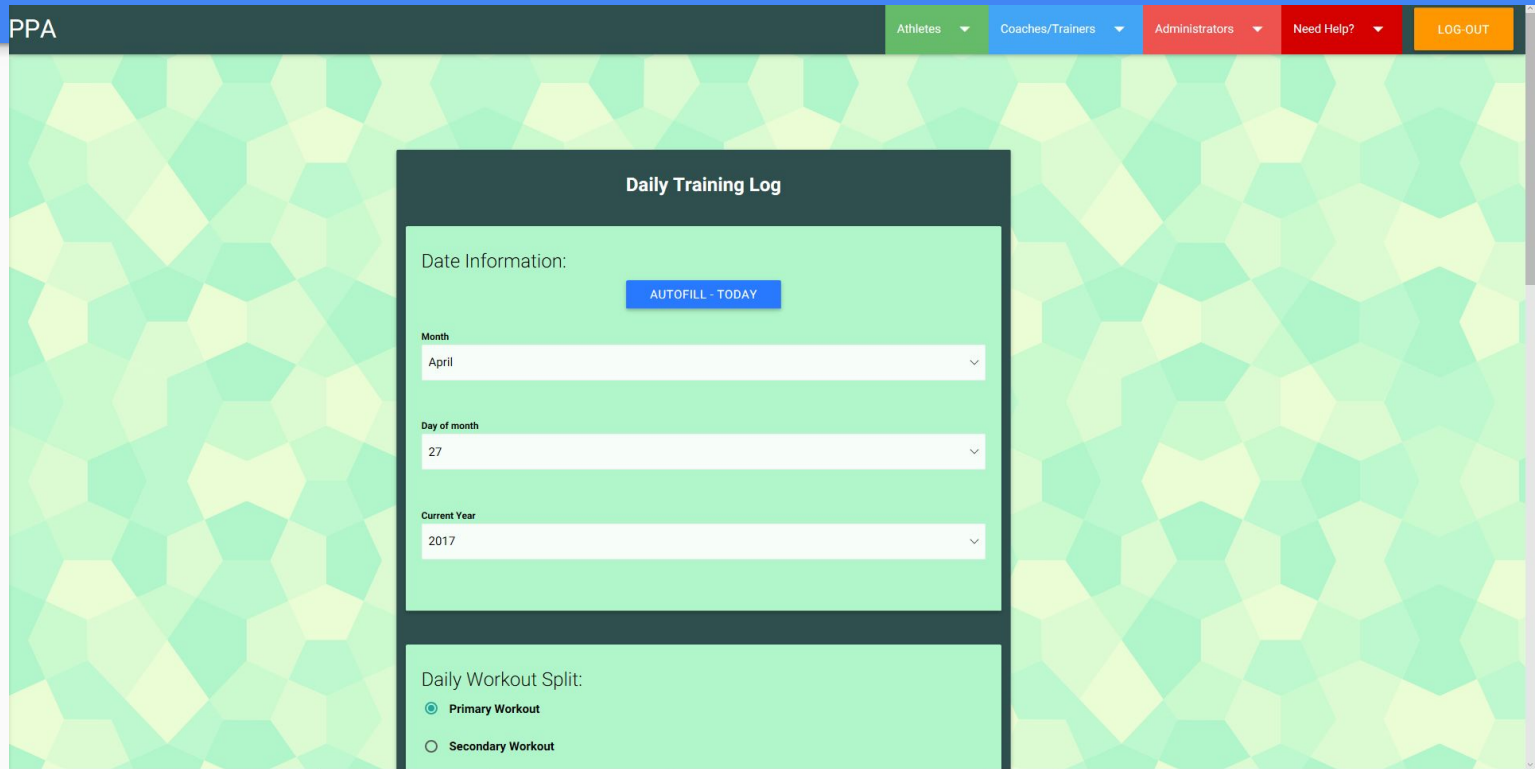
Log in



Screens

Entering

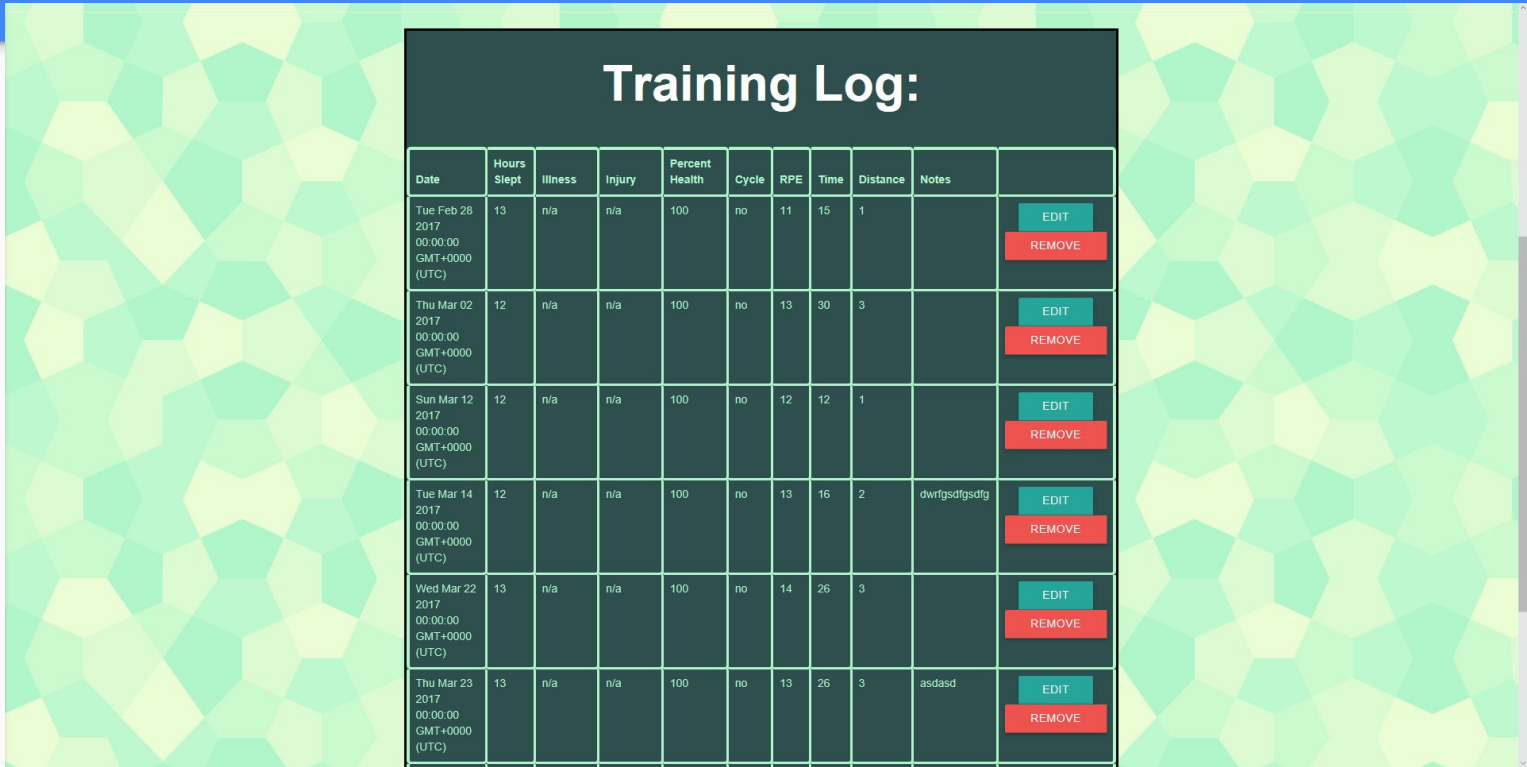
Workouts



Screens

Viewing

Workouts

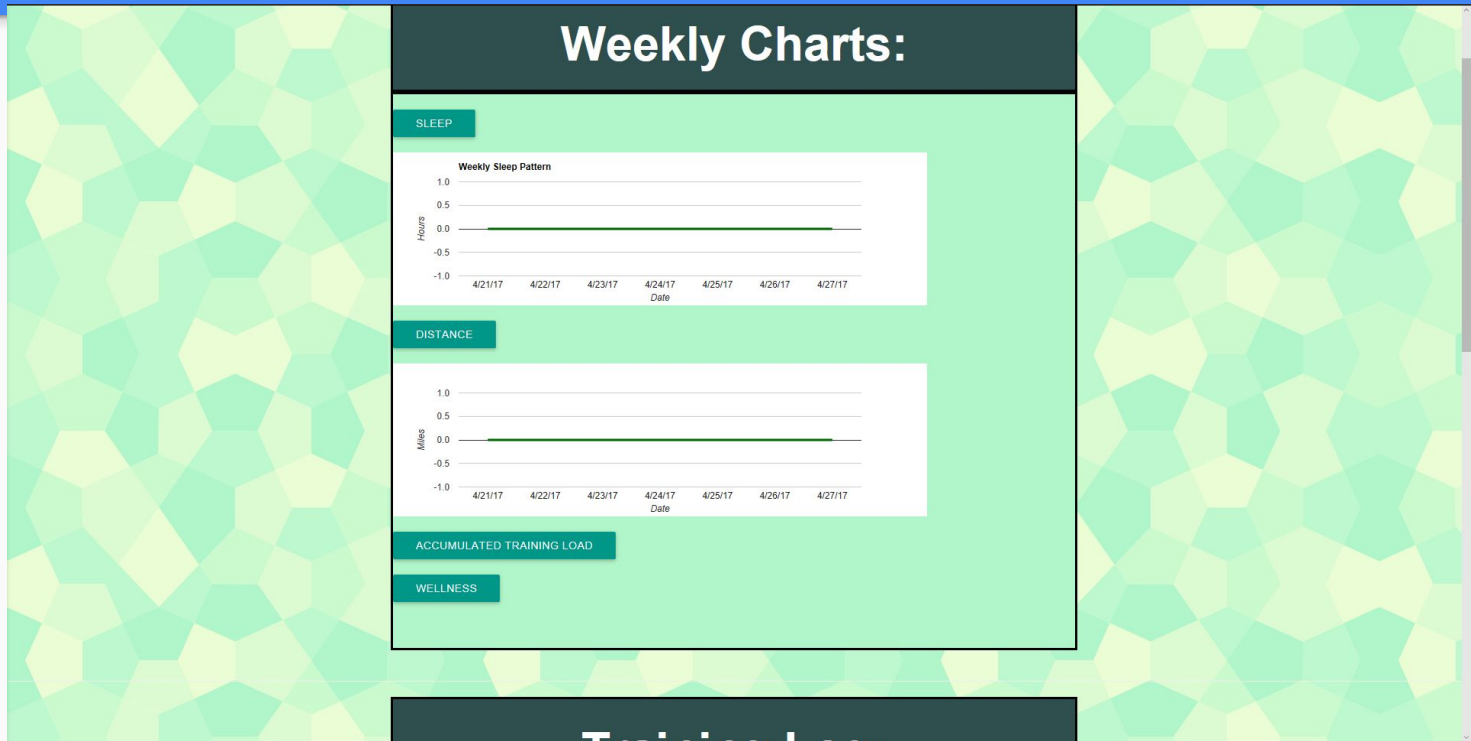


Training Log:

Date	Hours Slept	Illness	Injury	Percent Health	Cycle	RPE	Time	Distance	Notes	
Tue Feb 28 2017 00:00:00 GMT+0000 (UTC)	13	n/a	n/a	100	no	11	15	1		EDIT REMOVE
Thu Mar 02 2017 00:00:00 GMT+0000 (UTC)	12	n/a	n/a	100	no	13	30	3		EDIT REMOVE
Sun Mar 12 2017 00:00:00 GMT+0000 (UTC)	12	n/a	n/a	100	no	12	12	1		EDIT REMOVE
Tue Mar 14 2017 00:00:00 GMT+0000 (UTC)	12	n/a	n/a	100	no	13	16	2	dwrfgsdfgsdfg	EDIT REMOVE
Wed Mar 22 2017 00:00:00 GMT+0000 (UTC)	13	n/a	n/a	100	no	14	26	3		EDIT REMOVE
Thu Mar 23 2017 00:00:00 GMT+0000 (UTC)	13	n/a	n/a	100	no	13	26	3	asdasd	EDIT REMOVE

Screens

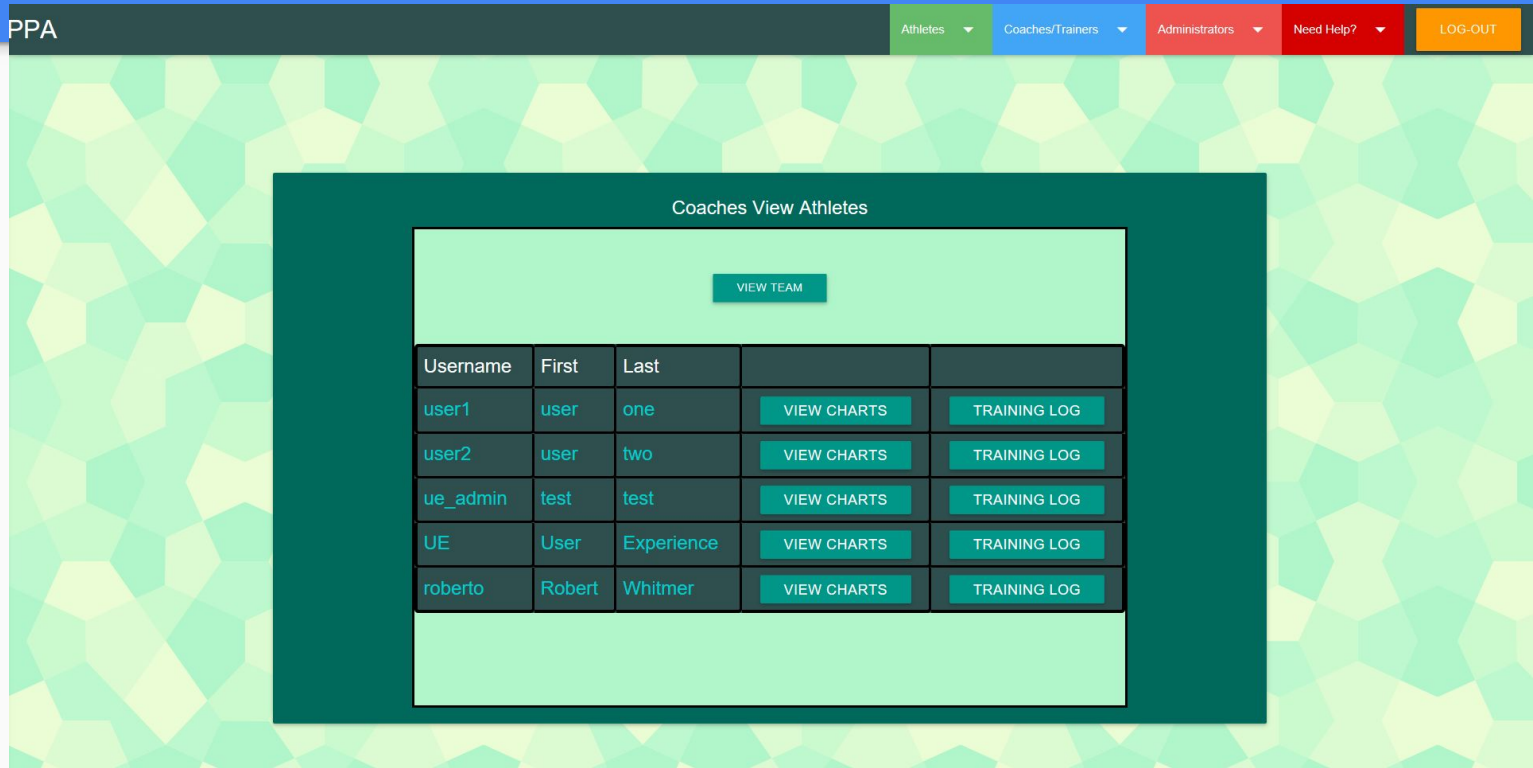
Charts



Screens

Viewing

Teams



Screens

Data export - individual

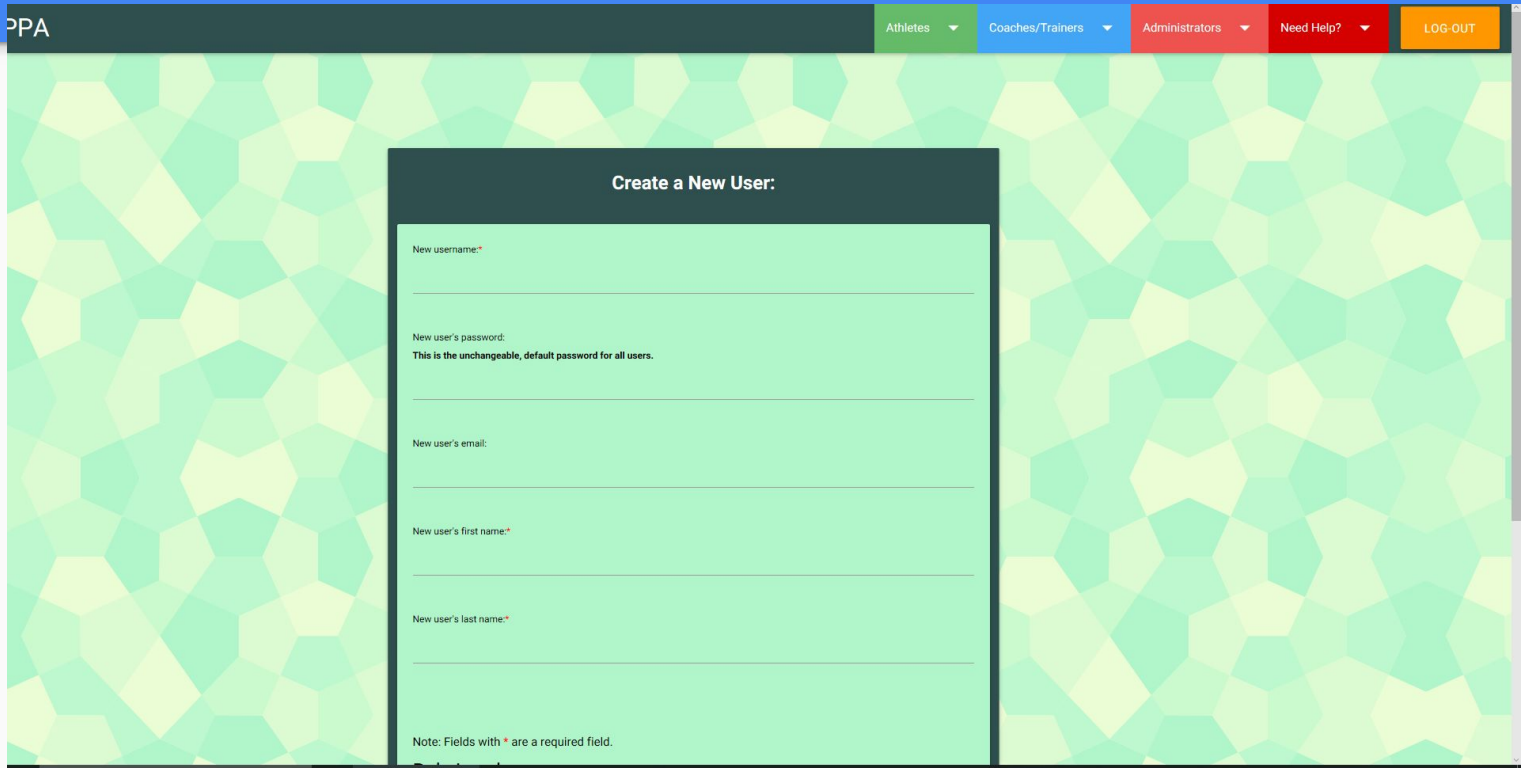
Screens

Data export - team

Screens

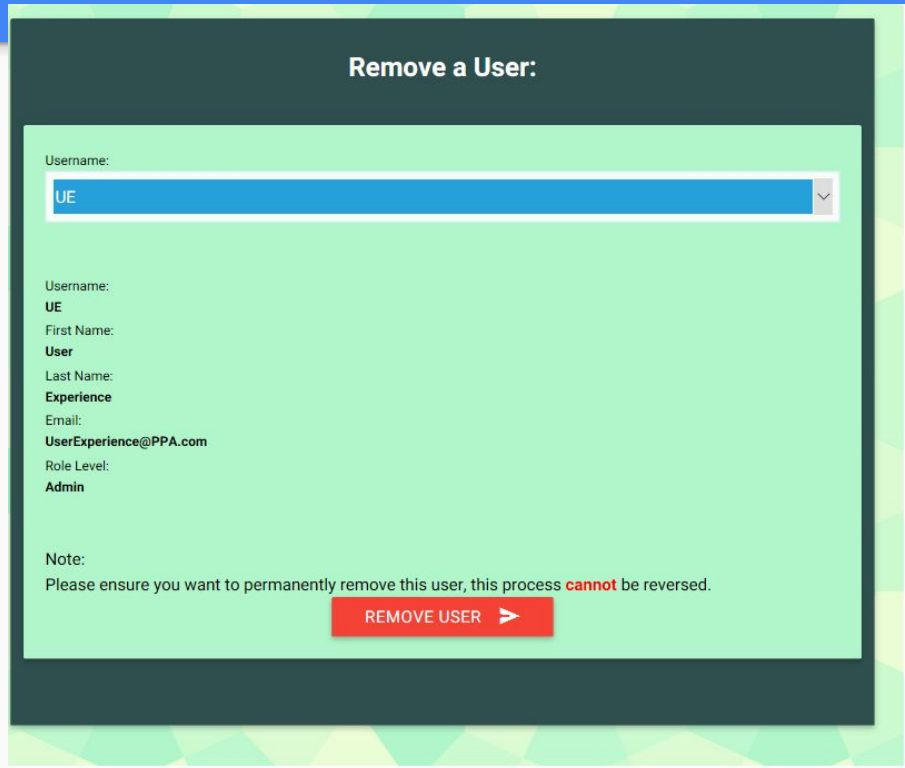
Adding

users



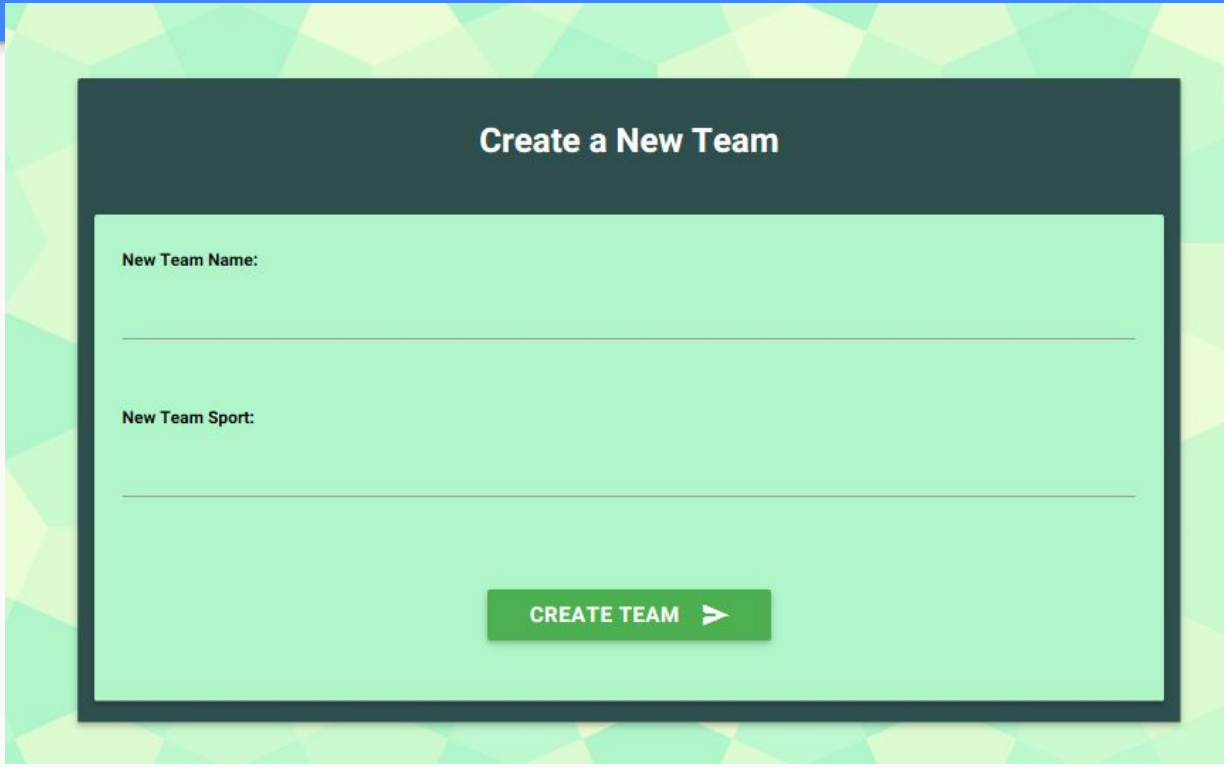
Screens

Removing a user



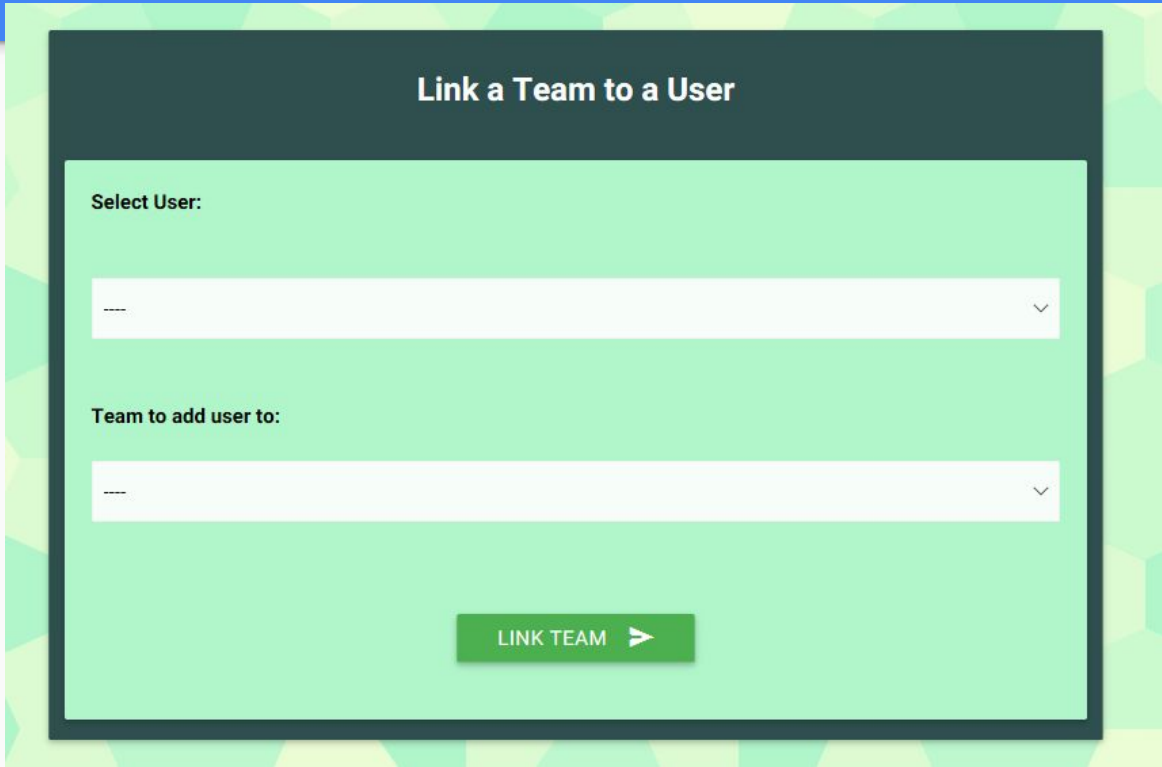
Screens

Creating a new team



Screens

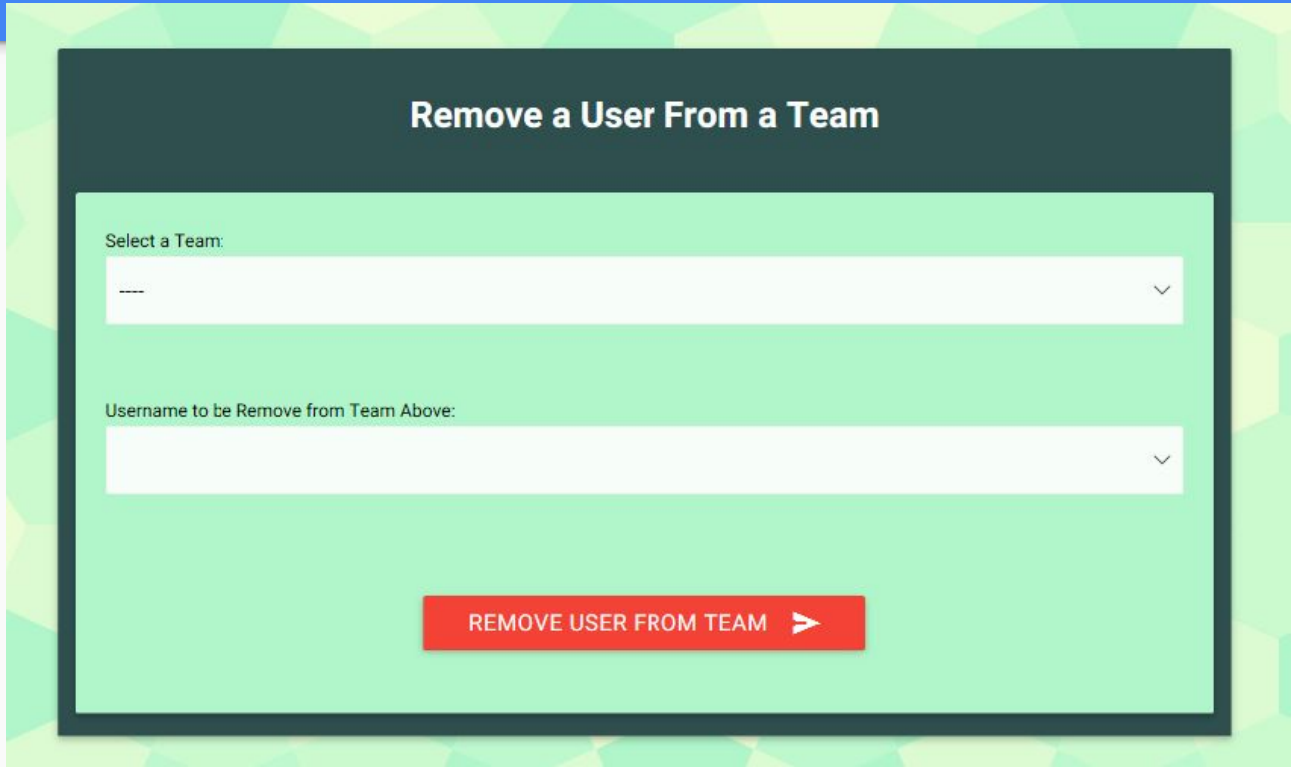
Adding users to teams



Screens

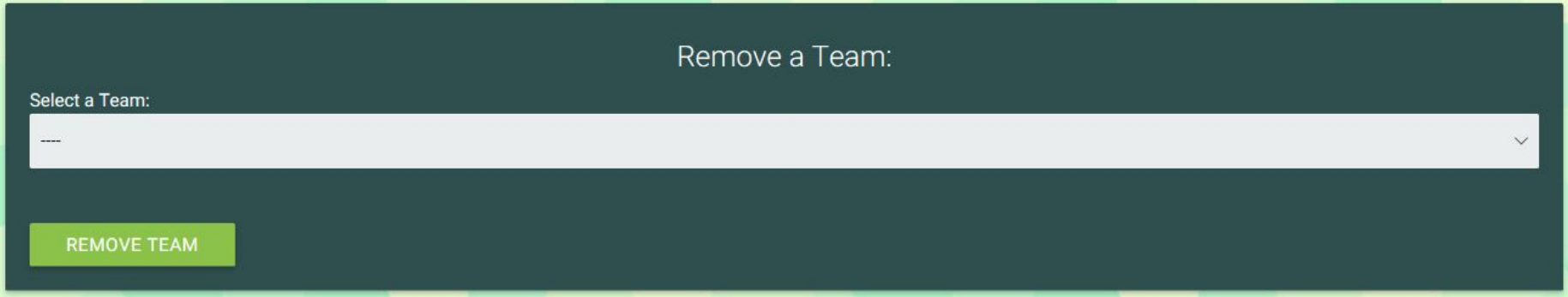
Removing users

From teams



Screens

Removing an entire team



Screens

Changing your password