CodingInfinity

Web Application User Manual

Git:
`https://github.com/CodingInfinity/Benchmark-Service-Documentation`
GitHub Organisation: `https://github.com/CodingInfinity`

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1 Introduction

This is the user manual for the Web Application. It gives a detailed guide surrounding individual how to navigate and use each part of the system.

1.1 System Overview

In a broad sense, the web application acts as a front end to the benchmarking service that makes up the overall system, the web application serves as a means to communicate with backend in terms of uploading datasets and algorithms, creating experiments, viewing results and managing account details.

1.2 System Configuration

As seen in Figure 1 the system as a whole compromises of a front end, coded in Angular2, a backend coded in Java, A messaging platform coded in ActiveMQ, and a Instrumentation Application coded in C++.

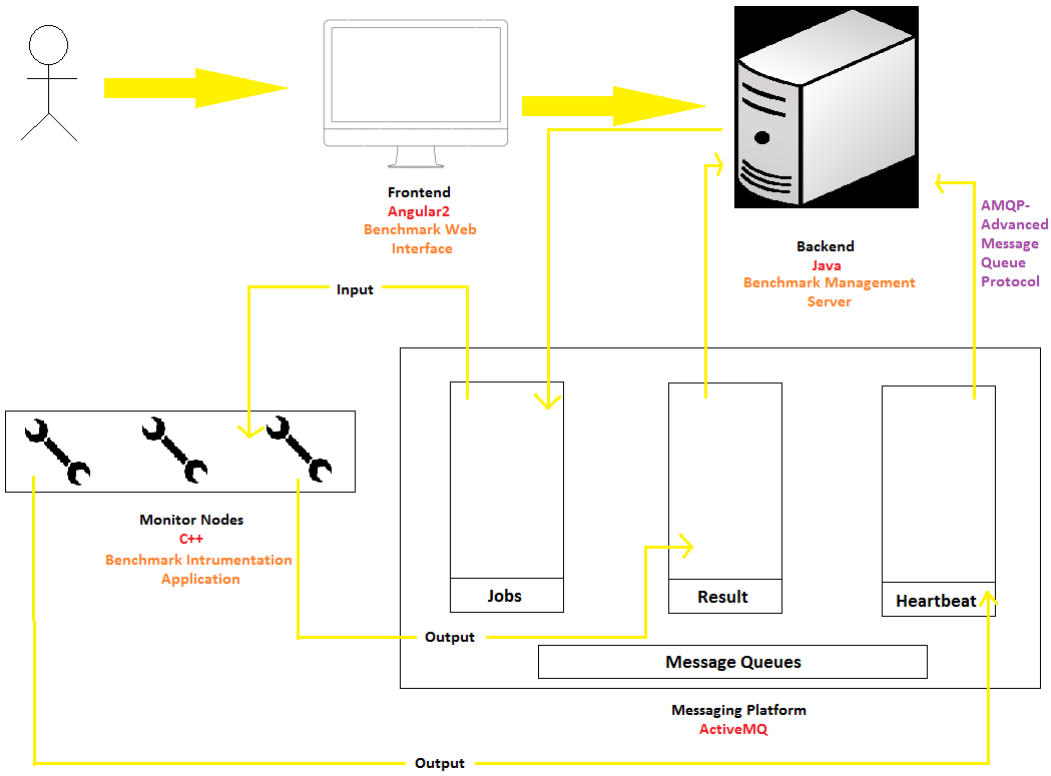

Figure 1: System Configuration

1.3 Installation

The system has only thoroughly been tested to work on the Google Chrome browser, for optimal usage of the web application system it is recommended that the user make use of Google Chrome, the default installation setting of Chrome will be sufficient. At the time of writing the IP address for the system is 137.215.40.157 i.e the service can be accessed by directing the users browser to 137.215.40.157, this is an internal University of Pretoria(UP) IP address and as such can only be accessed from within the UP firewall. The installation of the backend and the monitoring system is discussed in further detail in the installation manual.

2 Registration

Upon starting up of the application and navigating to the home page, the user will be met with the screen seen in Figure 2.

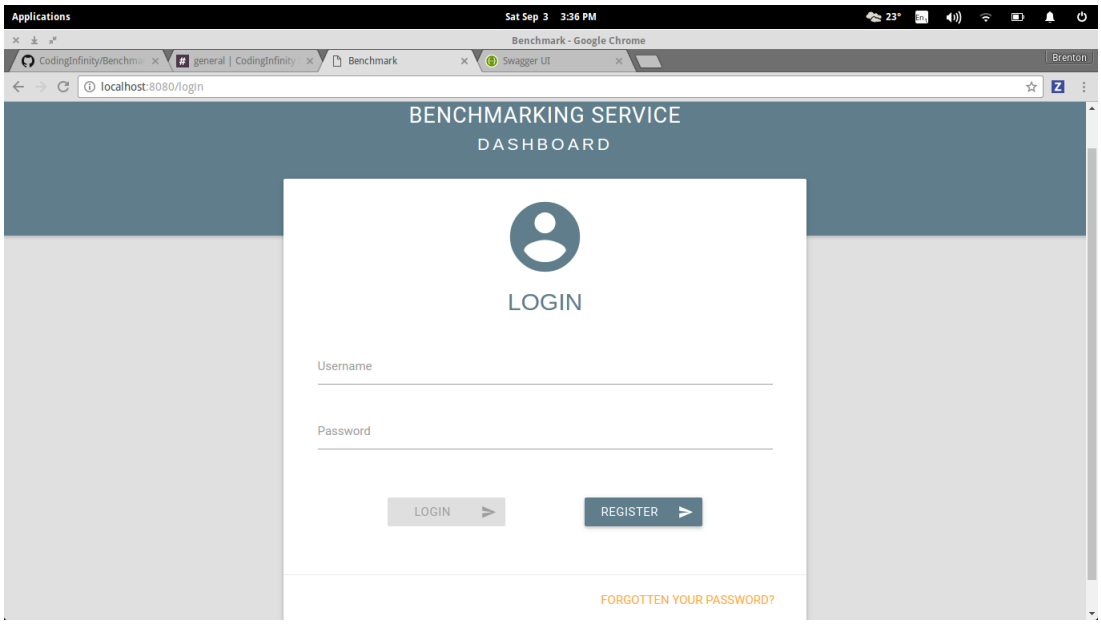

Figure 2: Landing Page

If the user has never made use of the system before, they should register themselves. Clicking on the "Register" button will direct the user to the page seen in Figure 3.

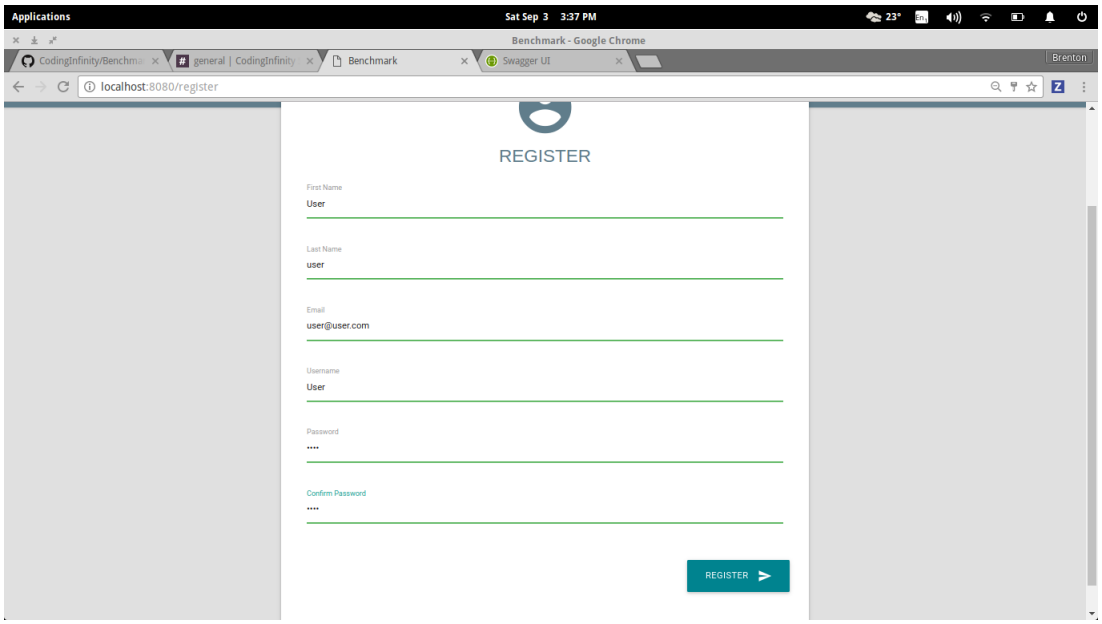

Figure 3: Registration Page

The user will then need to fill in their details accordingly. Once they have done this, they should click the "Submit" button. The user will then receive an email address at the address provided with a link that will allow them to activate their account.

When they click on the link they will arrive at a page as seen in Figure 4.

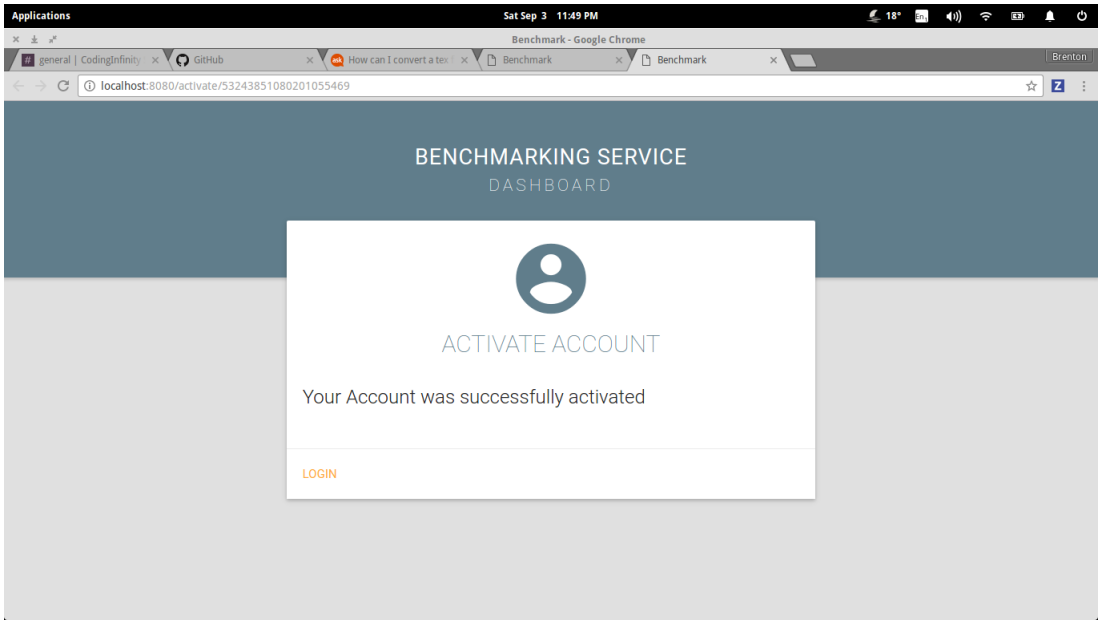

Figure 4: Activation Page

3 Sign In

Once the user has registered and activated an account as detailed in the previous section or upon returning to the application, they will be able to sign in by filling in their details as seen in Figure 5.

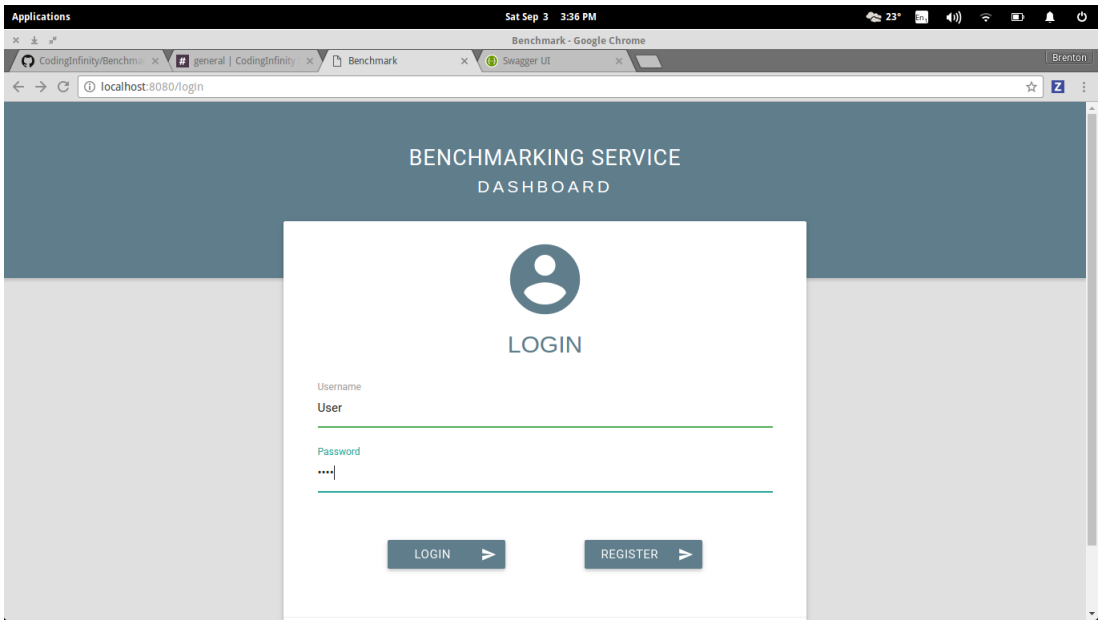

Figure 5: Signing in

4 Home

Upon signing in, the user will arrive at the home page as seen in Figure 6. From this page the user will be able to navigate throughout the application.

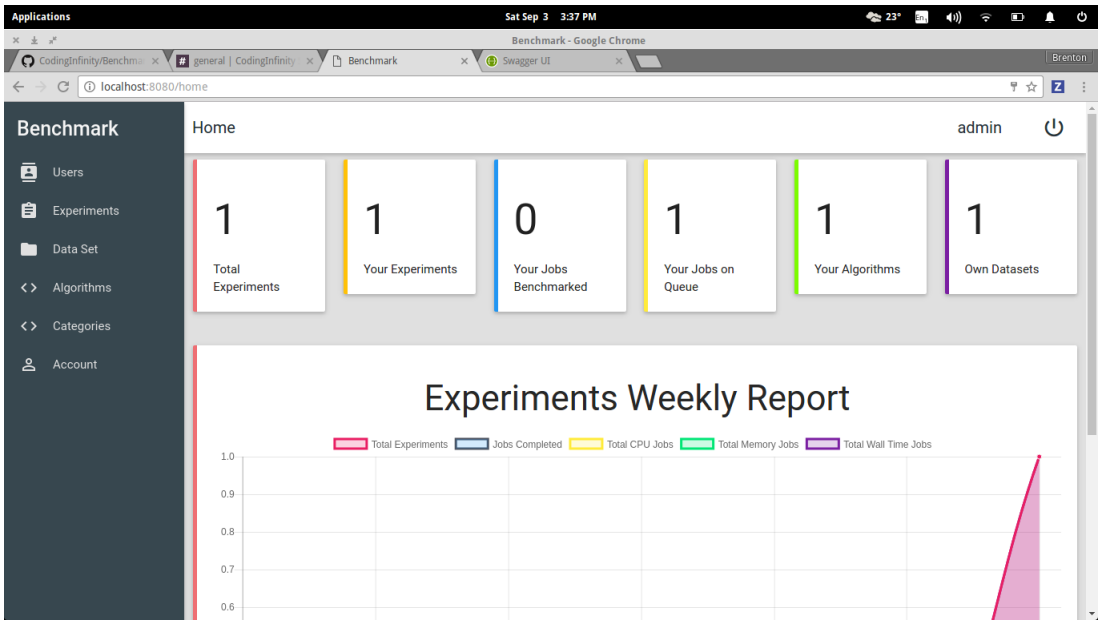

Figure 6: Home Page

5 Edit Profile

In order to edit ones profile, click on the Account tab in the navigation bar and a drop down list will appear as seen in Figure 7.

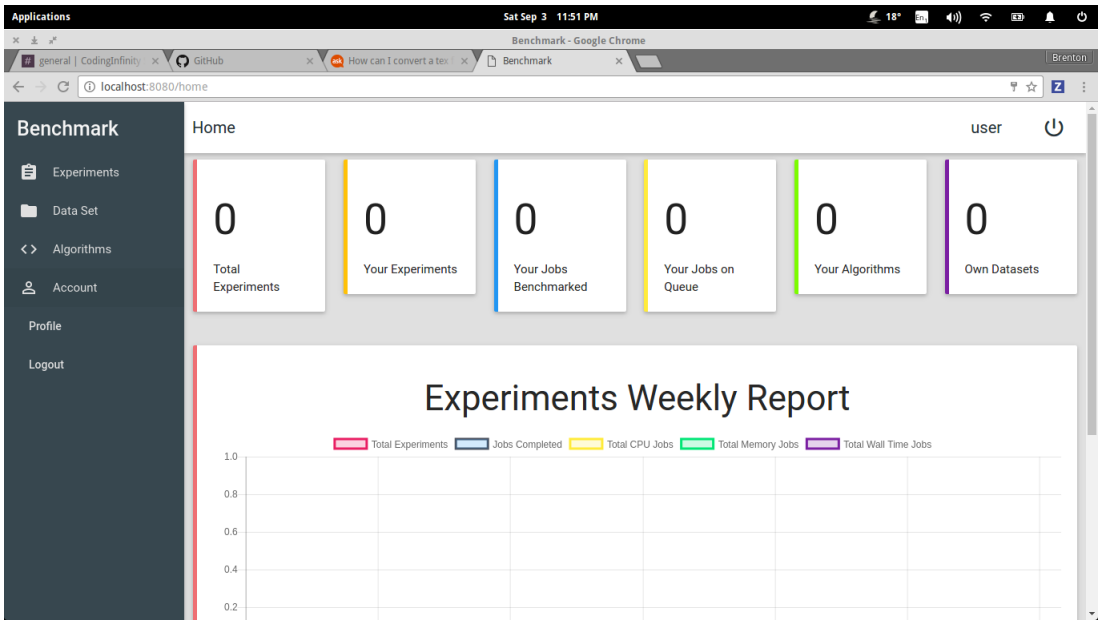

Figure 7: Home Page with Account menu options extended.

From there, click on the "Profile" option, which will take you to the Profile page as seen in Figure 8.

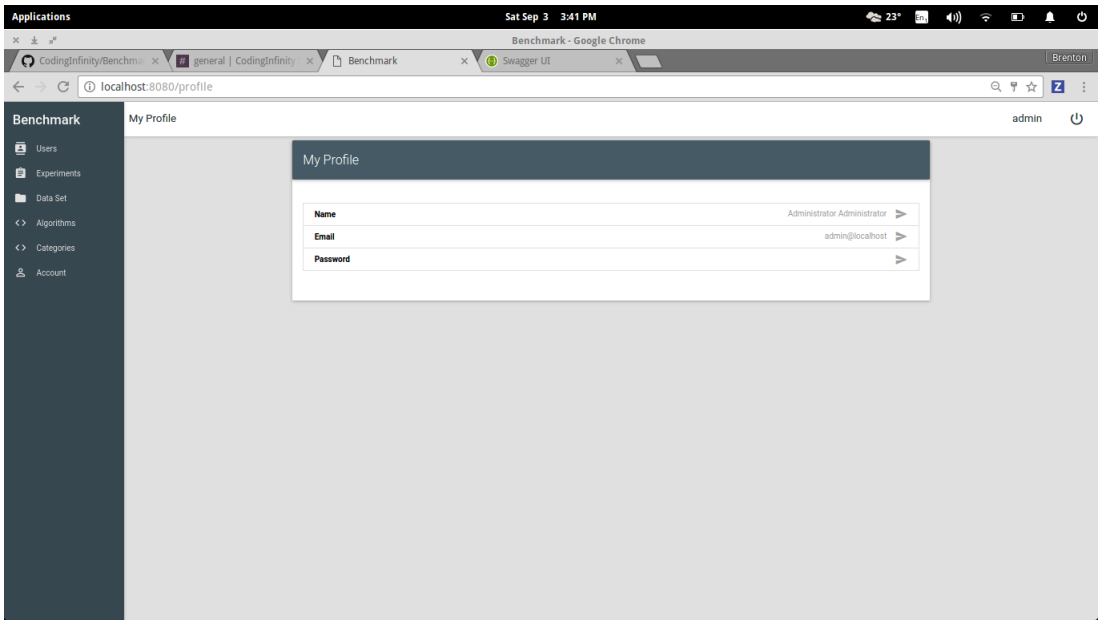

Figure 8: Profile Page

From here, the user can edit any of the options available by clicking on the desired option and filling in the details as seen in Figures 9, 10, 11. Upon filling in the details, click the "Edit" button.

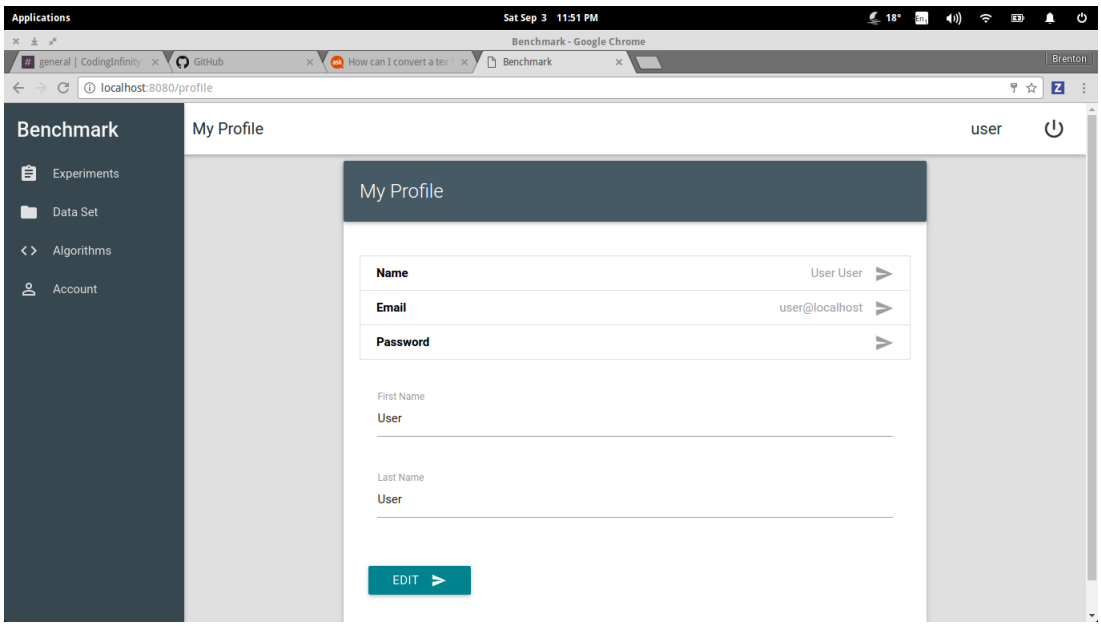

Figure 9: Edit name

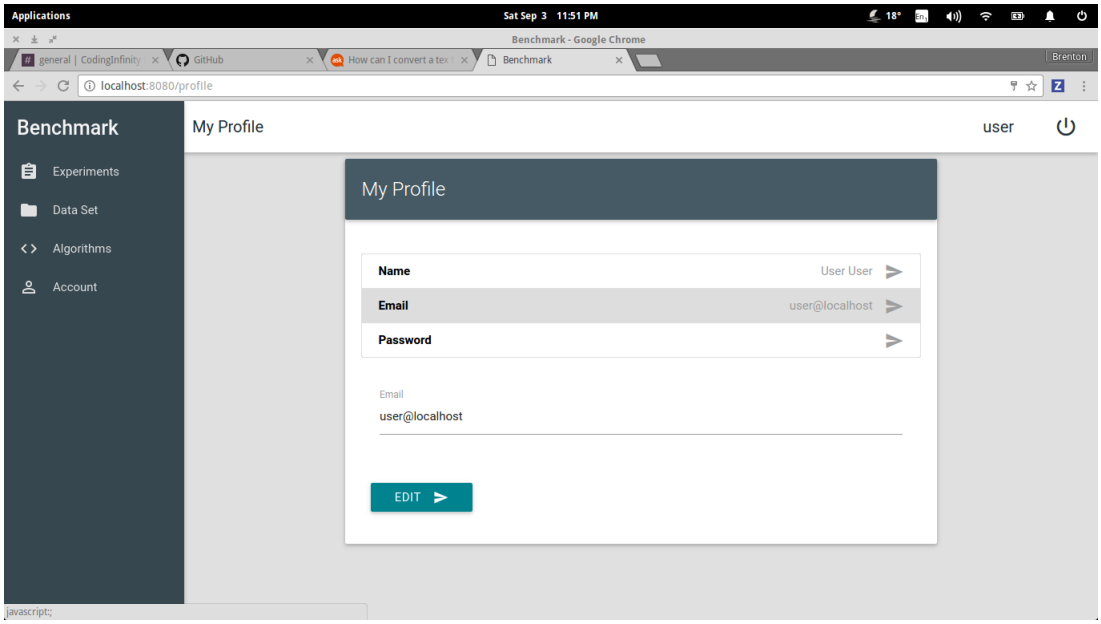

Figure 10: Edit email

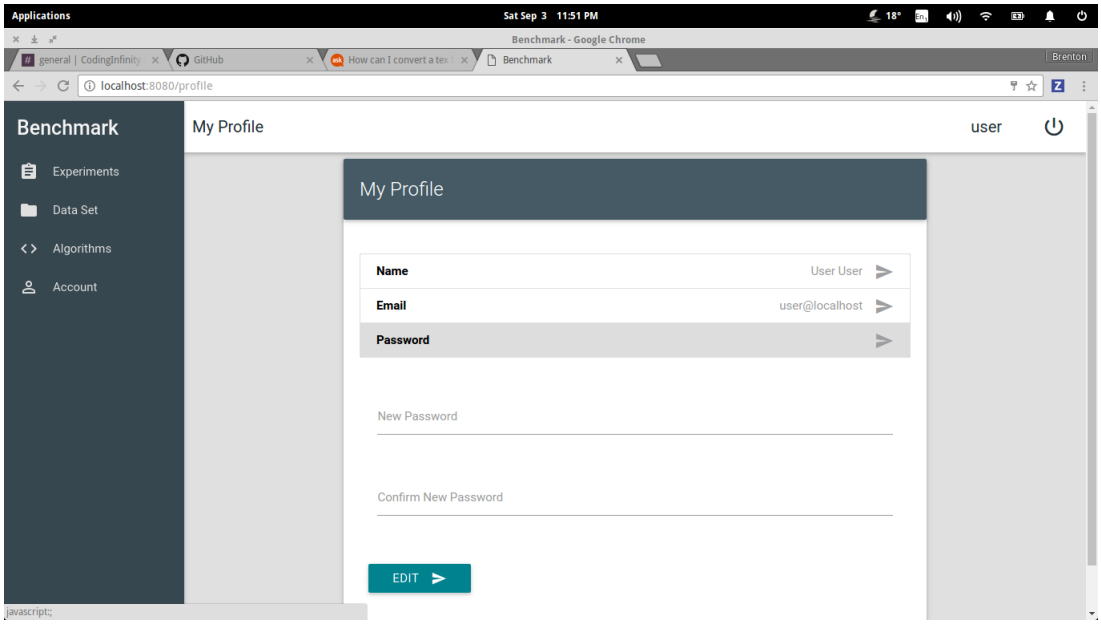

Figure 11: Edit password

6 Forgot password

If one arrives at the landing page, and realizes they have lost or forgotten their password. They can select the "Forgotten your password?" link at the bottom right which will take them to the page seen in Figure 12.

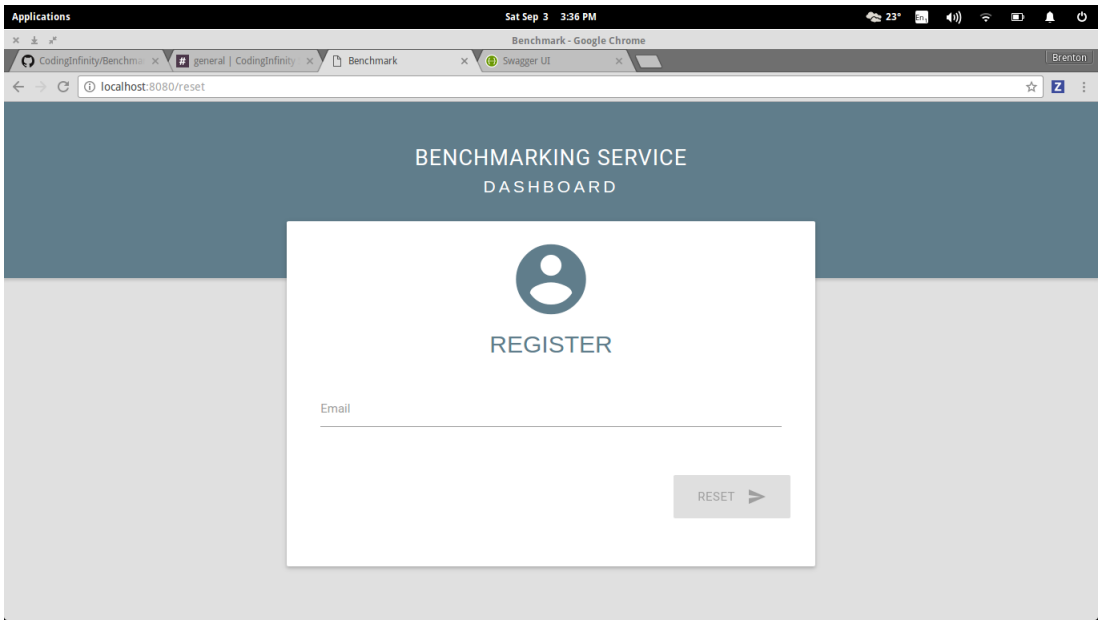

Figure 12: Forgot password page

After entering their registered email address, the user will receive an email with a link to a page to reset their password as seen in Figure 13. After the user as filled in their details, the user should click "Reset".

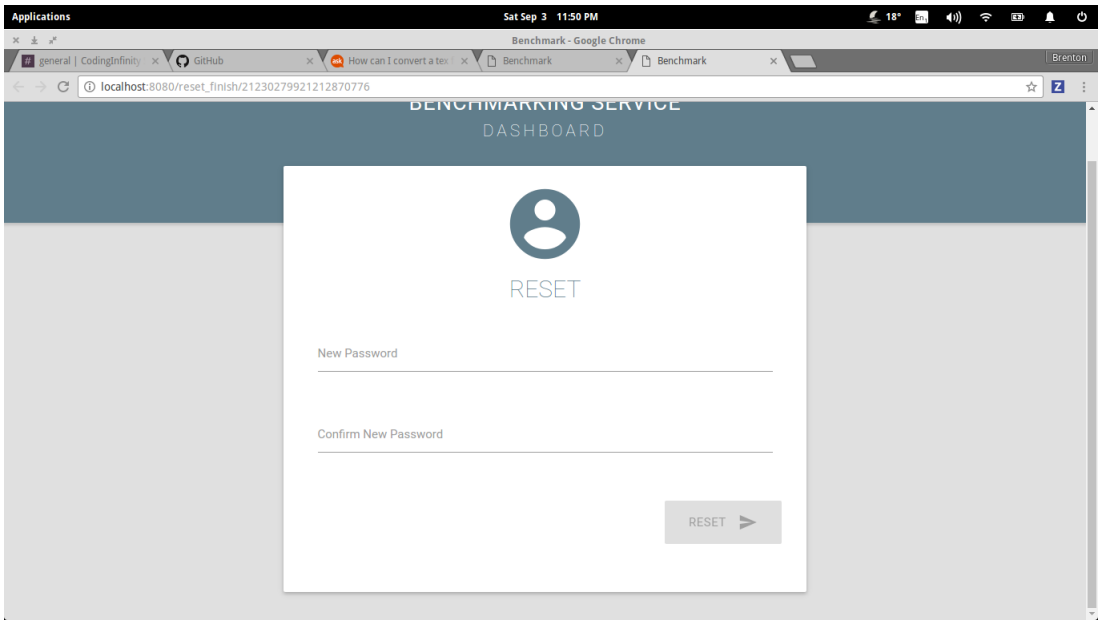

Figure 13: Reset password page

7 Experiment

In order for a user to view their experiments the would navigate to the View Experiments page as seen in Figure 14 and a list of all current experiments being run or that have been run for the user will be displayed.

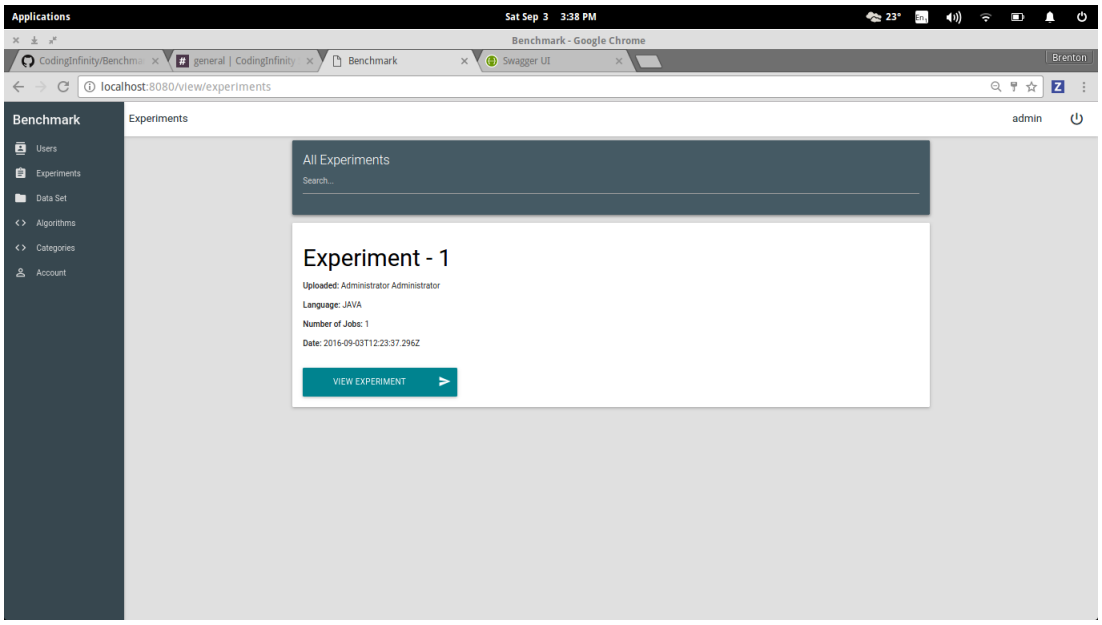

Figure 14: View Experiments page

The user can click on an individual experiment to see more detail surrounding the experiment as seen in Figure 15. If the test has finished executing a chart will display providing the user with a quick graphical representation of their results.

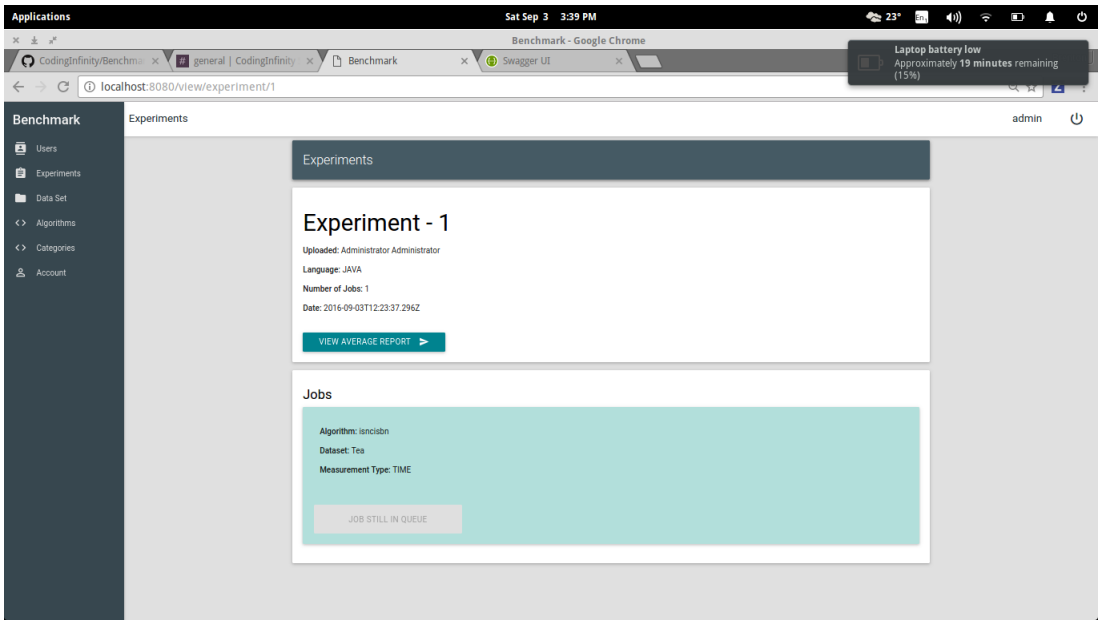

Figure 15: View experiment page

A user can also create new experiments as seen in Figure 16, there are a variety of customization options available to the user regarding the creation of the experiment.

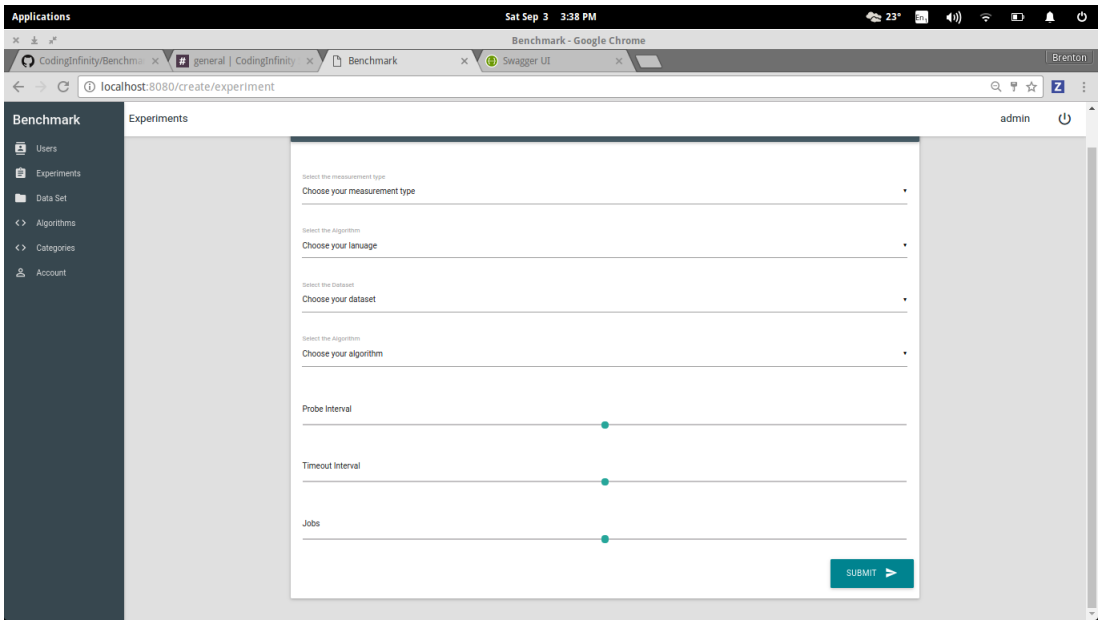

Figure 16: Create experiment page

7.1 Measurement Type

The measurement type specifies what the user would like benchmarked. The options are

- CPU - Measure CPU usuage of the application
- Memory - Measure the memory usuage of the application
- Wall Clock - Measure the time it takes an algorithm to execute

7.2 Language

The user will need to select the language of the application they are benchmarking. The options are

- C++
- Java
- Python

7.3 Datasets

The user must select all datasets the chosen algorithm must be benchmarked against. At least one dataset must be selected.

7.4 Algorithm

The user must select the algorihtm that must be benchmarked.

7.5 Probe Interval

Value specified in seconds indicating the interval between consecutive probes. Minimal probe value is 1 with an no upper bound.

7.6 Timeout

The timeout specified in seconds indicating the maximum allowed time an algorithm may run on the monitor node before it must be terminated, this is a safeguard feature.

7.7 Jobs

Indicates how many runs of each algorithm, dataset and measurement pairing must be scheduled.

8 Category

In order for a user to view this section they need to be logged in as an administrator. By clicking the category drop down item in the navigation menu, the user has access to view all algorithm categories as seen in Figure 17.

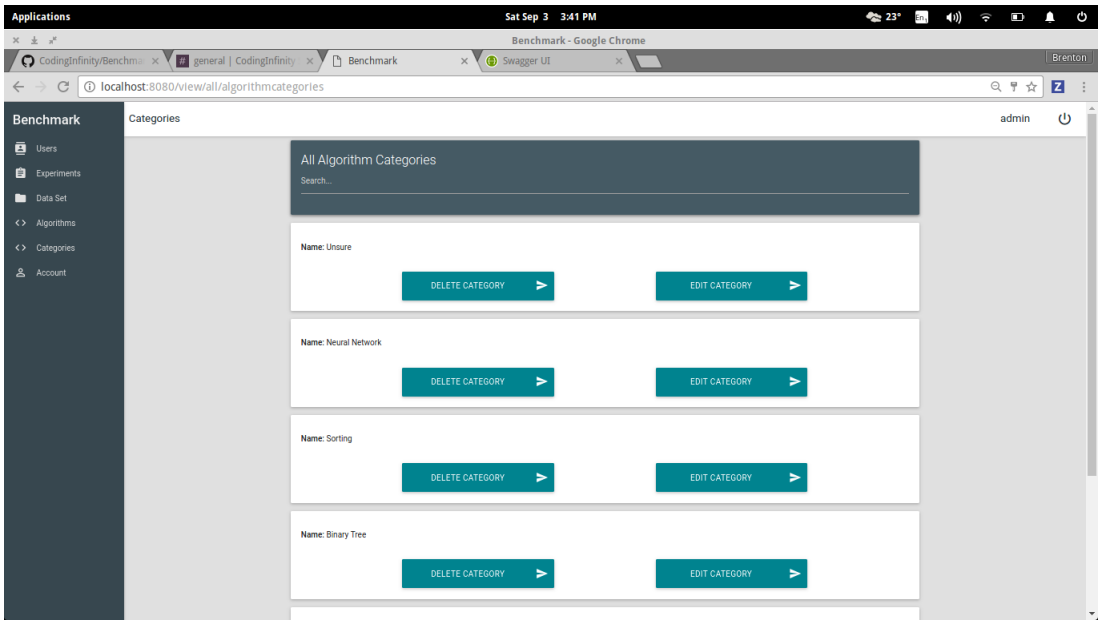

Figure 17: View all algorithm categories page

Create new algorithm categories as seen in Figure 18.

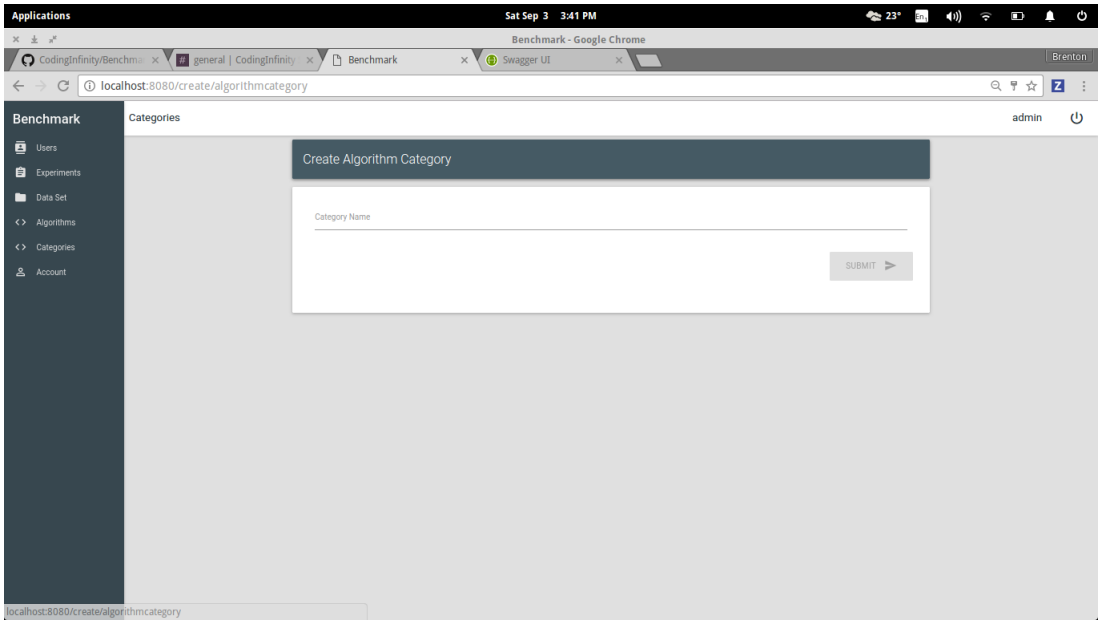

Figure 18: Create algorithm category page

View all dataset categories as seen in Figure 19

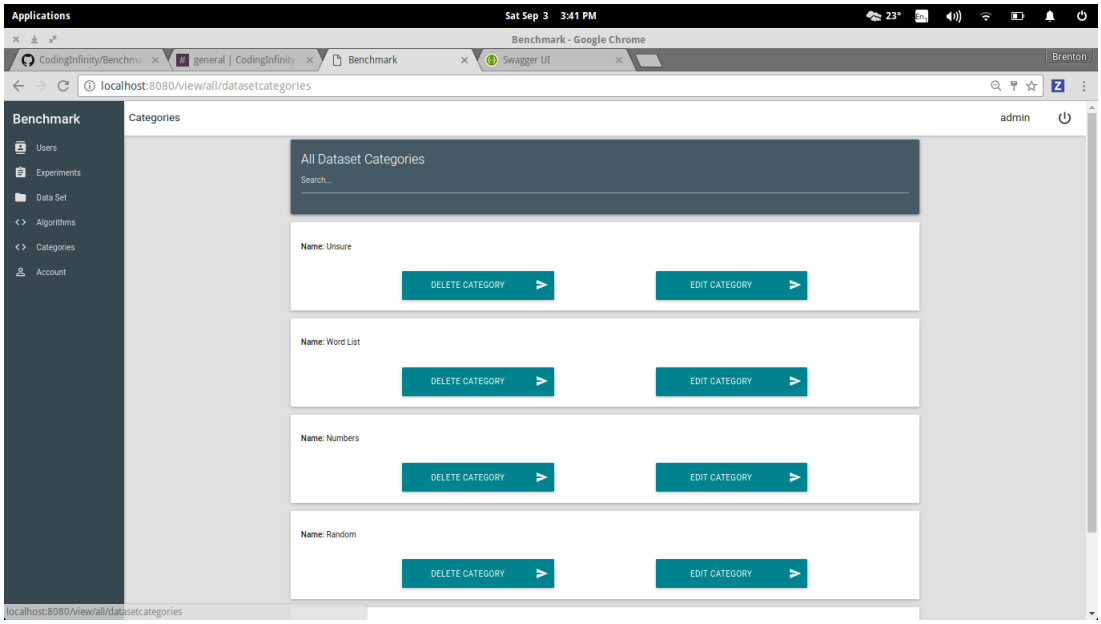

Figure 19: View all dataset categories page

Create new dataset categories as seen in Figure 20. On the respective viewing pages, a user can delete and edit certain categories.

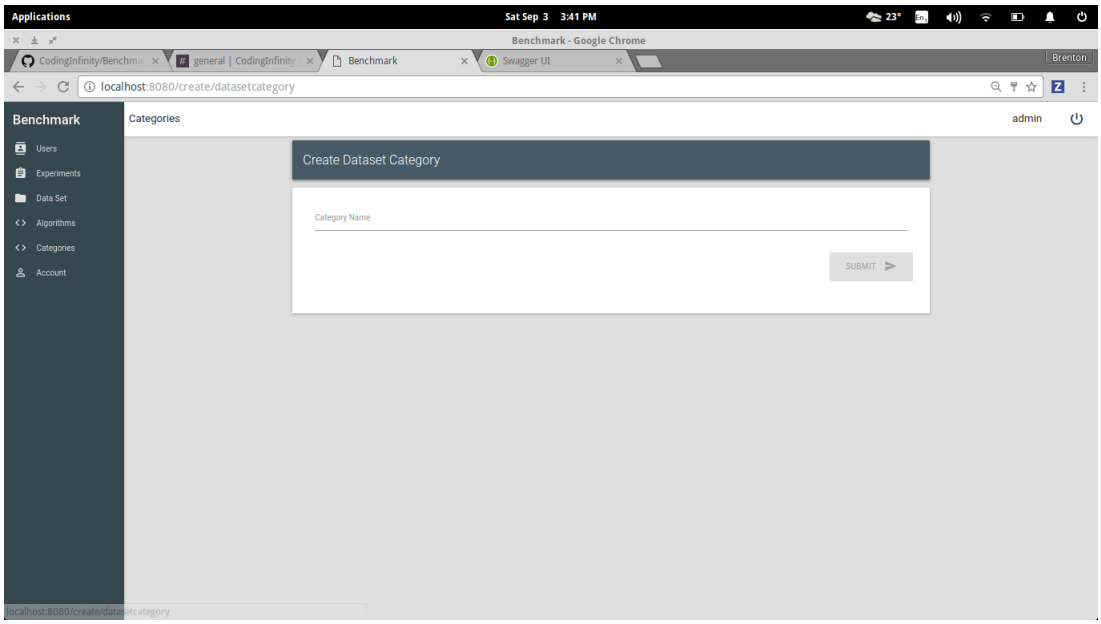

Figure 20: Upload dataset category page

9 Dataset

This section can be accessed by expanding the data set item in the navigation bar, from here a user has the ability to navigate to pages that will allow them to view all data sets as seen in Figure 21.

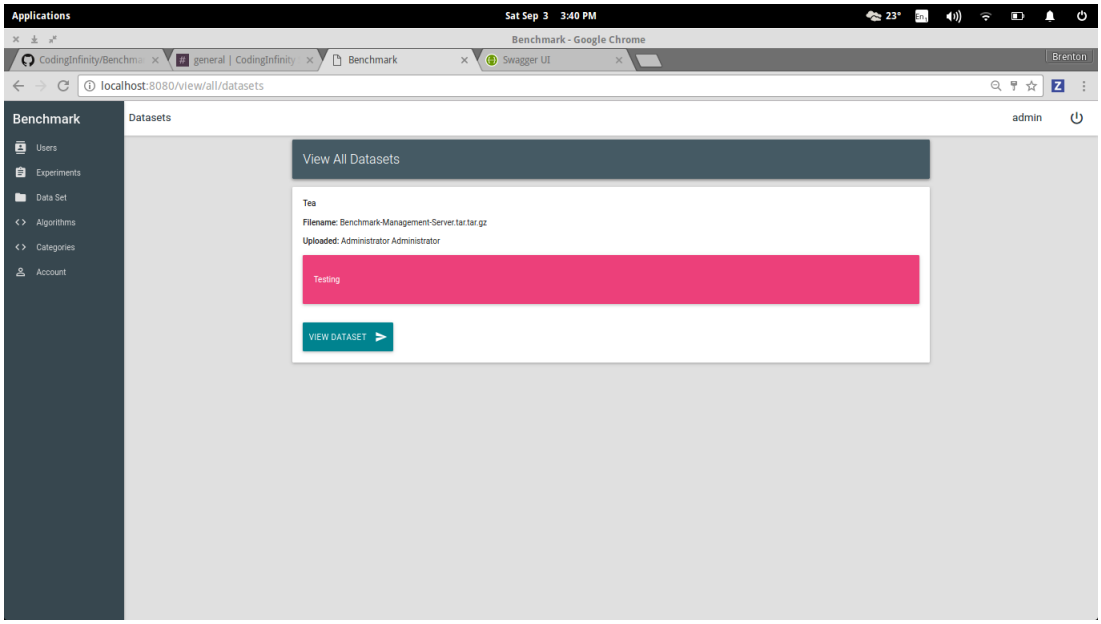

Figure 21: View all datasets page

Simply view the data sets they have created as seen in Figure 22

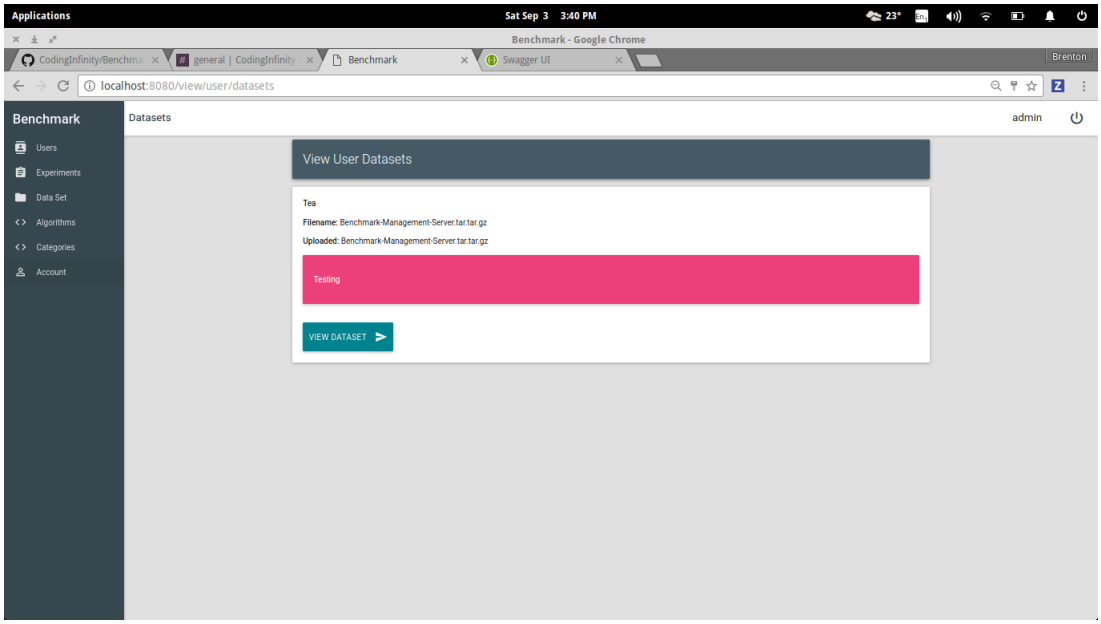

Figure 22: View user datasets page

From either of the above mentioned pages they can choose to view the data set in more detail as seen in 23

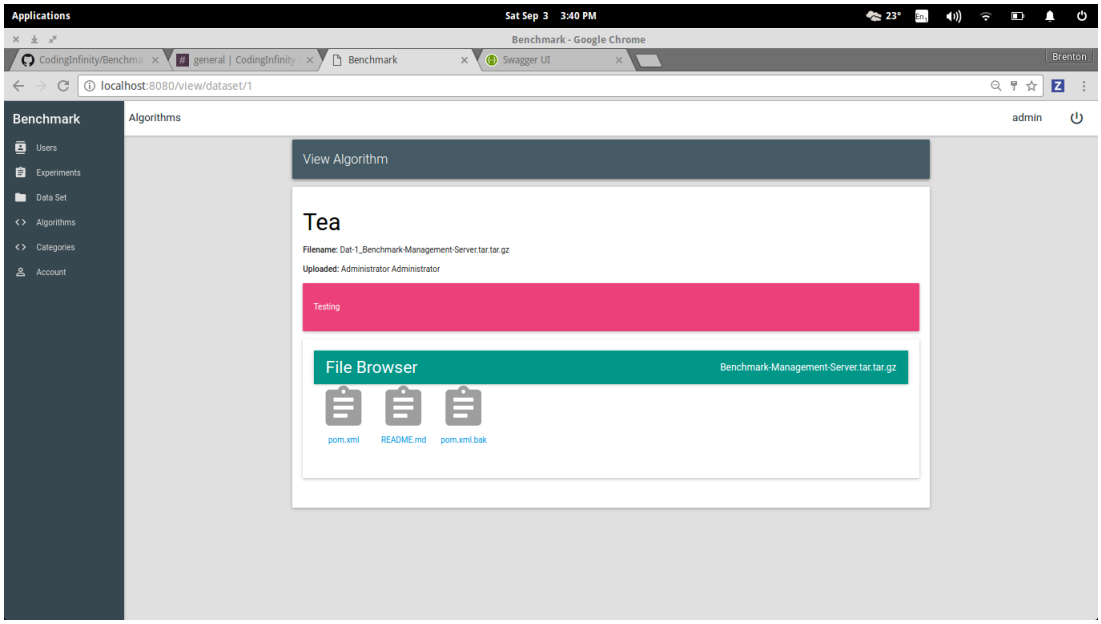

Figure 23: View dataset page

Or they can upload a new data set as seen in Figure 24.

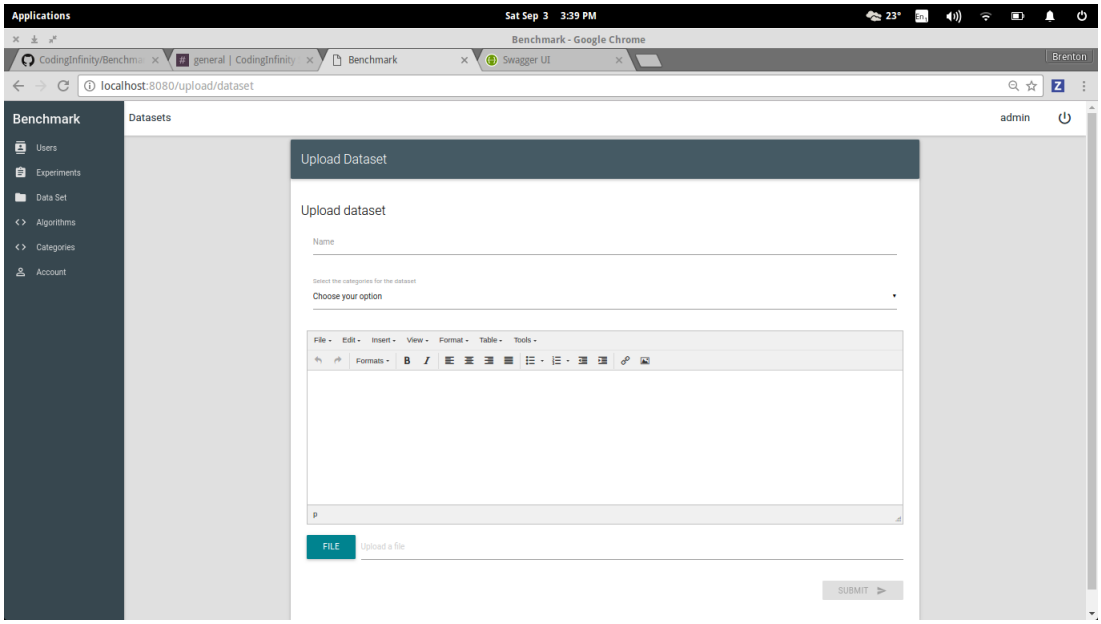

Figure 24: Create dataset page

10 Algorithms

This section is mutatuis mutandis as the Dataset section. See above mentioned section and figures.