

**Visual  
And Identity Update  
for the Hawk Questionnaire Bank**

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## **OVERVIEW**

The Hawk Questionnaire Bank (HawkQB) is a question database used by the computer science department to test students on their knowledge of different subjects so they can better tailor their courses. The website consists of a courses page where students can add a course via the provided course code from the professor. Then they can answer the questions that have been laid out by the professor for this specific course. The data from this website goes onto to really help professors and teachers understand where their students are at in terms of their knowledge of certain subjects. My interest in Web Development and visual identity led to the creation of my capstone project for the Digital Art Major.

## **PROJECT DESCRIPTION**

A visual and identity update to allow the website to function better and be better for user experience. I'm working with the site's owner Dr. Yang Song in order to maintain his vision for the site while doing this update. Throughout the semester I will have multiple meetings with Dr. Song to discuss the various changes that will be happening to the website. The changes coming to the website are as outlined below:

- Updated fonts and color schemes

- Clarity added to web pages to improve user experience
- New visualizations for course scores
- Rearrangement of website flow
- Adding necessary additions for website improvement

**Purpose:**

- The purpose of this website is to allow professors and teachers to test the skills of their students in a more easy and straight forward manner. We want them to be able to create the courses that they want to test and be able to see the results in an easy to understand way. We also want the website to be non-distracting so that the students answering the questions can focus on the learning and not be taken away by extra features across the page. The results from these courses should help instructors improve their class by understanding where their students are at in terms of the course material.

## Site Access:

- Users will access this webpage by first being connected on a university computer or a personal computer with VPN access. Once that has been completed the students and professors can use the HawkQB link to access the website.

## Features:

- Website Layout:
  - Home
    - Home page with a welcome message. Directs new users to create a new account (Figure 1).
  - Student Dashboard

This page allows the students to view the current courses they have and add a new course using a token provided by the professor in the top search bar. Once a token has been entered the course will pop up asking if the student wants to confirm this selection to their account. When the student confirms it will be added to their courses page (Figure 2).
  - Courses/Questions Page

- Students can view their courses and select various questions. Students will have to select a course before being able to view the questions related to the selected course (Figure 3).
- Student Page
  - Students and instructors can edit their user profile information like password, name, and profile picture (Figure 5).
- About
  - Users can see more information about the website and what it's all about (Figure 6).

**Audience:**

- The intended audience the students and instructors at UNCW. We would like instructors to use this website as a resource to further help them improve their class instruction. While at the same time helping the students by making the instructors more aware of the level of knowledge the students possess on a specific subject.

Overall better communication and improved class structure is the goal of this website.

**Functional Specification:**

- The website will guide users using straightforward design:

- Navigation bar will contain five tabs:
  - Home Page: HTML/CSS and generated with Ruby on rails. With graphics made with Adobe XD (Figure 1).
  - Student Dashboard Page: HTML/CSS and generated with Ruby on rails. With graphics made with Adobe XD. Data visualizations made with JavaScript (Figure 3).
  - Courses Page: HTML/CSS and generated with Ruby on rails. With graphics made with Adobe XD (Figure 2).
  - Student Page: HTML/CSS and generated with Ruby on rails (Figure 5).
  - About Page: HTML/CSS and generated with Ruby on rails (Figure 6).
- I want the website to look modern and fresh while also not being a large distraction for the work people are trying to get done on it. I hope that instructors and students can really focus on the material and not get lost while using the website.
- Visual Design:
  - Modern and easy to understand
  - Colors:

- Mint Green/Light and Dark Green
- Black/White/Gray
- Font: Poppins
- Visual Prototype: Created on Adobe

### **Related Work:**

There are a lot of similar websites. Any website that allows questions and answers in quiz type format would be relevant to this websites work. A really good website I think would be Duolingo since they have a clean way of presenting information and having the user answer those questions. Another website that I found a lot of inspiration was udemy's website. Their course selection and search are really well made and I really liked framing my courses screen in a similar format. They didn't really have a question page related to their courses, but they did have individual lessons laid out in a readable format when you selected the course. I wanted to arrange my questions page in a similar way.

## Issues Encountered:

The challenges I encountered during this project were:

- Implementing previously made d3.js graphs into an active database. Code modification was needed in order to make the graphs work fully with our data. Most of the time when we needed to transfer the code from author or from the local file into the database the variables would be wrong. So, it was very time consuming to go through and modify the code in order to get it working again. This was also the reason why we couldn't get the last visual graph working correctly. It was just taking too much time and ended with it being incomplete (Figure 9).
- One of the most notable issues I encountered with the actual website design was with the question and answers page in the dashboard. Throughout the semester I went through several different designs of this page. Never truly settling on a design that I was satisfied with. Even with feedback it was hard to get an arrangement that actually matched the rest of the aesthetic (Figure 3).
- The final issue that I had was just overall not enough time to complete the things I wanted too. I originally wanted to port this design into a website and get it functionally working so that users could access it from anywhere on the web.

Constraints with the server was one issue as the college is hosting it and therefore the information on it is secured and hard to access outside of the college. Making the website not really that useable outside of the campus. Along with having to dedicate a lot of time to get the relatively simple looking data visualizations to work, which had a lot more code involved with them than you would expect by looking at them.

## **FUTURE WORK**

In the future there are a number of different things I would like to add and improve upon for this project. The first thing would be to obviously finish my heat map grid graph since that's still unfinished. The second thing would be to improve the questions page since I'm still not satisfied with the way it works and looks. Maybe adding some different shapes for the boxes and making them more condensed. I also want to add a logo officially to the site since I never was able to finish the one that I was working on. I could never get one that looked unique enough for me to want to use it as the database logo so I ended up just not using one. I would also like to change the home page vector art to use a color scheme more like the rest of the website. I feel like at the moment it looks too random with the colors. It stands out quite a bit.

## **FINAL THOUGHTS**

To wrap things up I have some final thoughts about the project. I enjoyed getting to create all the things that I did and I really appreciate the opportunity that Dr. Song gave me with helping his research and being able to create this design. I learned a lot about coding in a professional environment and it's made me consider a career relating to web development or computer science. When I first started there were things, I thought I would enjoy a lot more like the user interface design and then as I went about, I realized I didn't like it as much as I thought I would. While at the same time I thought I was going to hate having to use JavaScript and Ruby on Rails to develop these graphs and I really loved being able to figure out the issue and modify code to get it work in an already functioning environment. Also being able to work on code as team rather than working on it by myself made me realize that experience was better for me to learn than the ways I had been doing it previously. I've gained a lot of information from being able to use the variety of tools that I did as well so it's nice to be able to add that to tool box. Adobe XD seemed like it was a more daunting tool than it actually was. The software is really well put together and I never realized how much I could create within besides just apps and web layouts. While at the same time I also didn't know how easy it was to incorporate j3.ds code into projects. I had seen a

lot of people talking about it, but I never really knew what it was and assumed it was too complicated for me to learn. But I was wrong as we were able to use it to add the three graphs into our database. With this experience I'm excited to be able to use it in my portfolio and see what opportunities I can get using it.

## Works Cited

1. Dianat, Iman, et al. "User-Centred Web Design, Usability and User Satisfaction: The Case of Online Banking Websites in Iran." *Applied Ergonomics*, vol. 81, 2019, p. 102892., doi:10.1016/j.apergo.2019.102892.
2. Kwok, R. Web design: Webcraft 101. *Nature* 506, 255–257 (2014). <https://doi-org.liblink.uncw.edu/10.1038/nj7487-255a>
3. Schrepp, M., Pérez Cota, M., Gonçalves, R., Hinderks, A., & Thomaschewski, J. (2017). Adaption of user experience questionnaires for different user groups. *Universal Access in the Information Society*, 16(3), 629-640. doi:<http://dx.doi.org.liblink.uncw.edu/10.1007/s10209-016-0485-9>
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5. Chesnut, Donald, and Kevin P. Nichols. *UX for Dummies*, John Wiley & Sons, Incorporated, 2014. ProQuest Ebook Central, <https://ebookcentral.proquest.com/lib/uncw/detail.action?docID=1674223>.

**Timeline Goal:**

<b>Week 1 (1/14)</b>	<b>Week 2 (1/21)</b>	<b>Week 3 (1/28)</b>	<b>Week 4 (2/4)</b>
Begin with ideas	Narrow ideas with advisor	Start on project	Individual Meetings
<b>Week 5 (2/11)</b>	<b>Week 6 (2/18)</b>	<b>Week 7 (2/25)</b>	<b>Week 8 (3/3)</b>
Prototype 1	Public Display	Faculty Visit	Prototype 2
<b>Week 9 (3/10)</b>	<b>Week 10 (3/17)</b>	<b>Week 11 (3/24)</b>	<b>Week 12 (3/31)</b>
Spring Break	Extended Spring Break	Update Week	Present to faculty
<b>Week 13 (4/7)</b>	<b>Week 14 (4/14)</b>	<b>Week 15 (4/21)</b>	<b>Week 16 (4/28)</b>
Meeting with Gene	Capstone Projects Due	Capstone Online Gallery Live & Final Capstone Project Critique	Schedule Oral Defense

Figure 1 (Home Page)

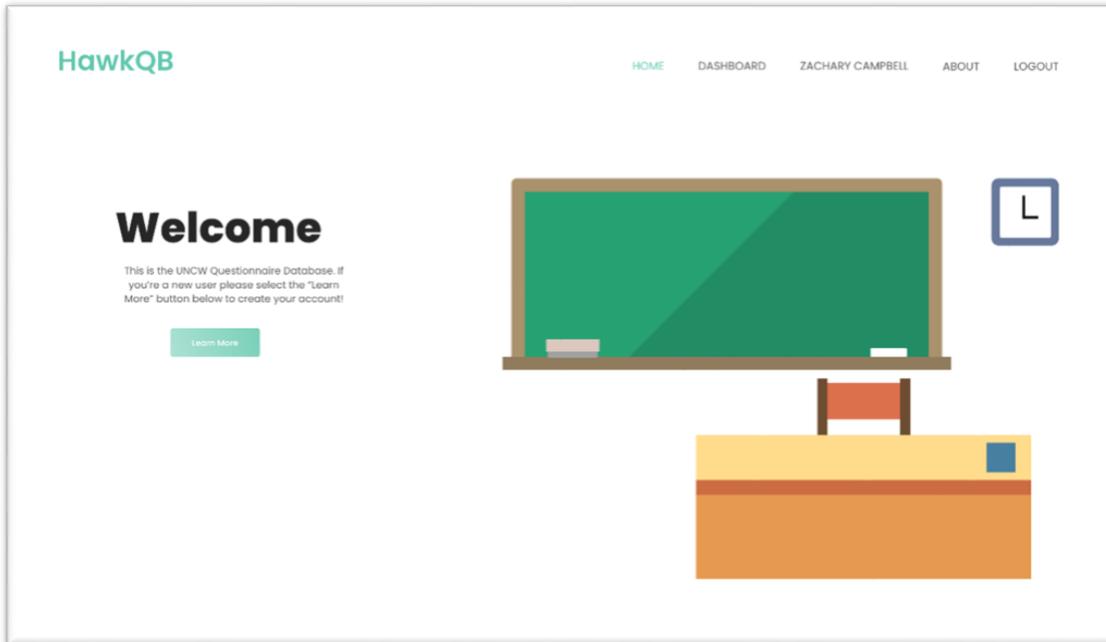


Figure 2 (Courses Page)

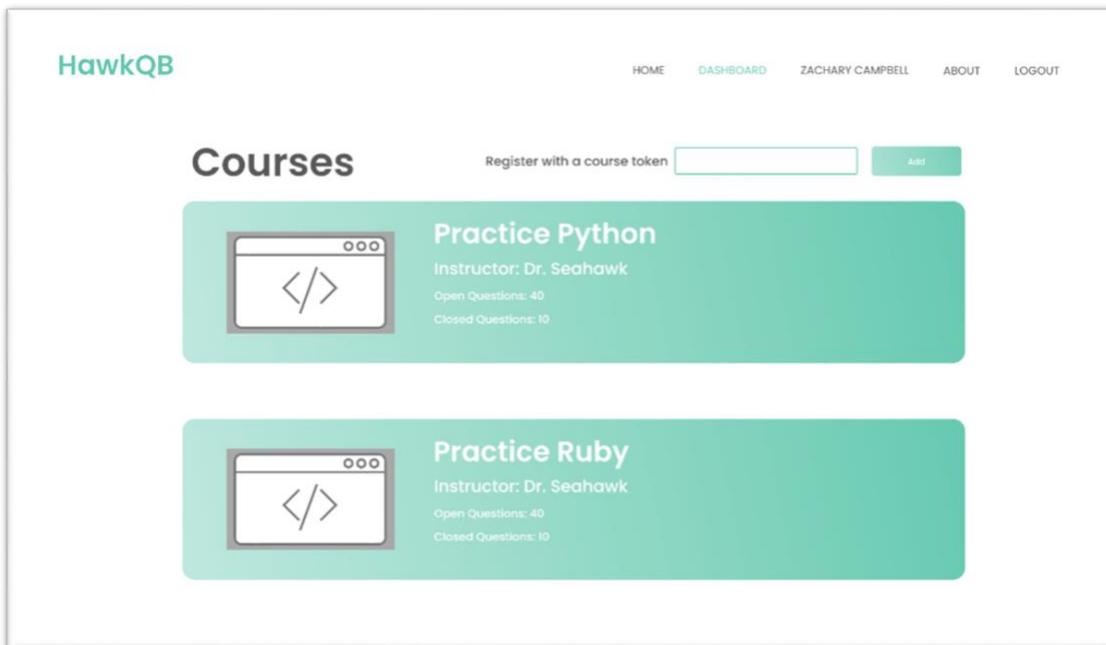


Figure 3 (Question Page)

Question	Type	Updated	Attempt	Score
How do you make a for loop?	Multiple Choice	1 day ago	2	✓
How do you make a while loop?	Multiple Choice	1 day ago	2	✓
How do you make if statements?	Multiple Choice	1 day ago	2	✓
How do you declare an integer?	Multiple Choice	1 day ago	2	✓

Figure 4 (Answer Page)

How do you make a for loop?

For

If

While

Else

Submit

Figure 5 (Profile Page)

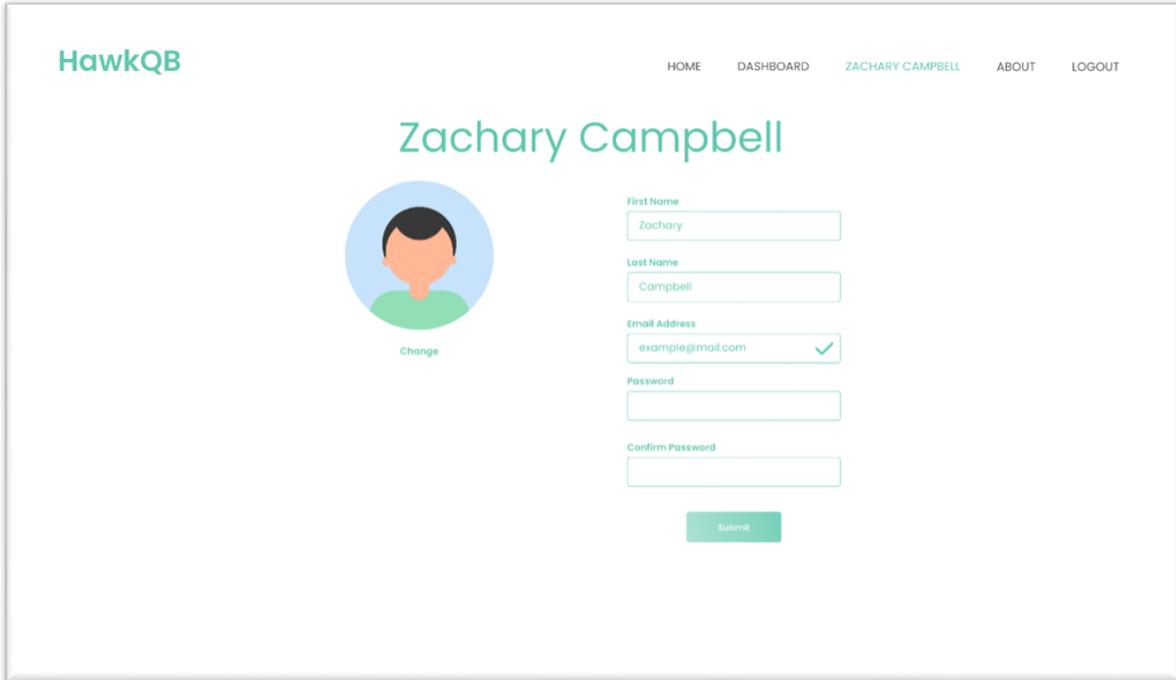


Figure 6 (About Page)

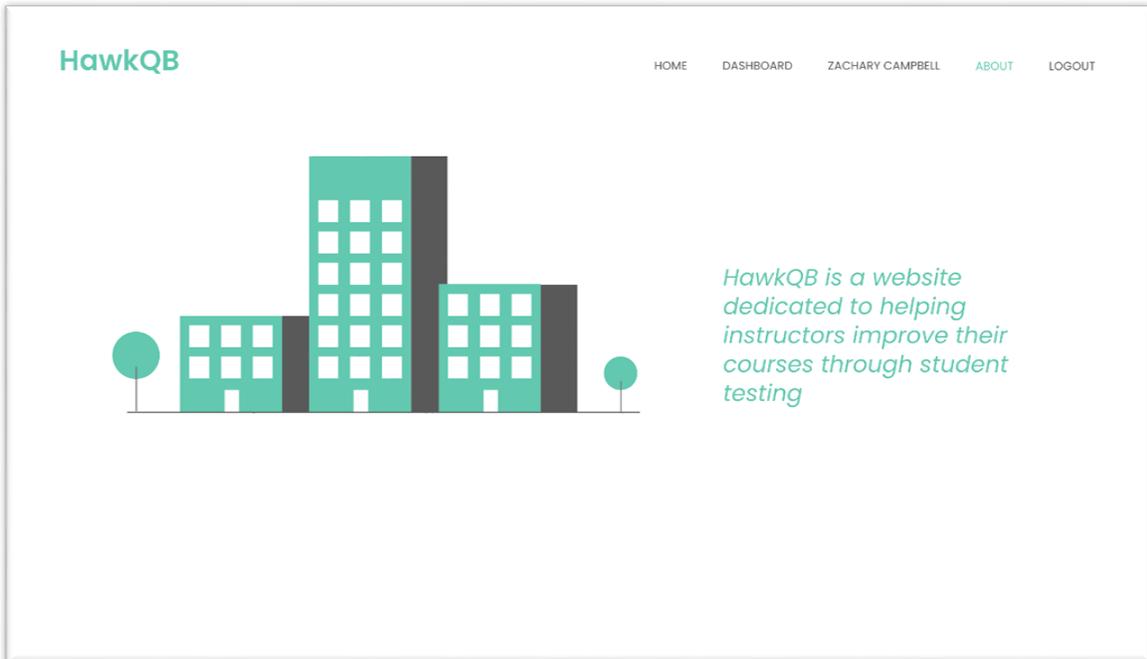


Figure 7 (Liquid Gauge Graph)

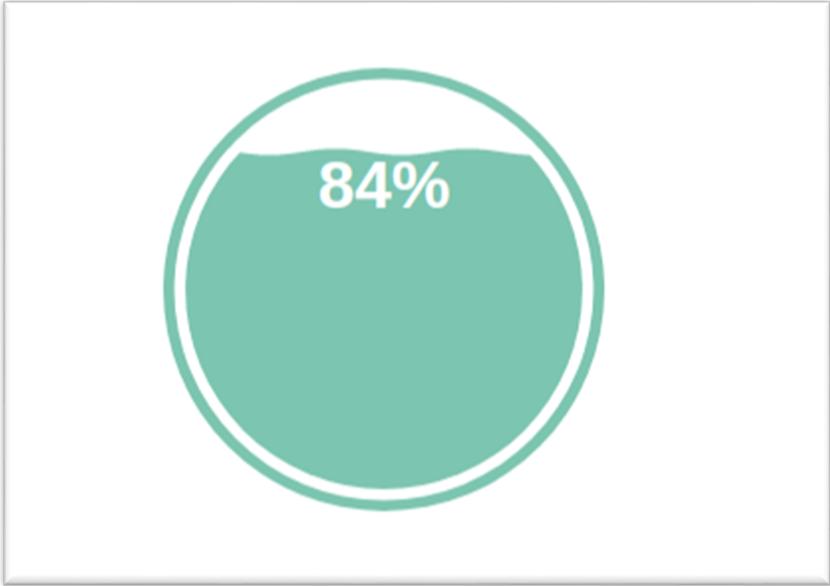


Figure 8 (Aster Plot)

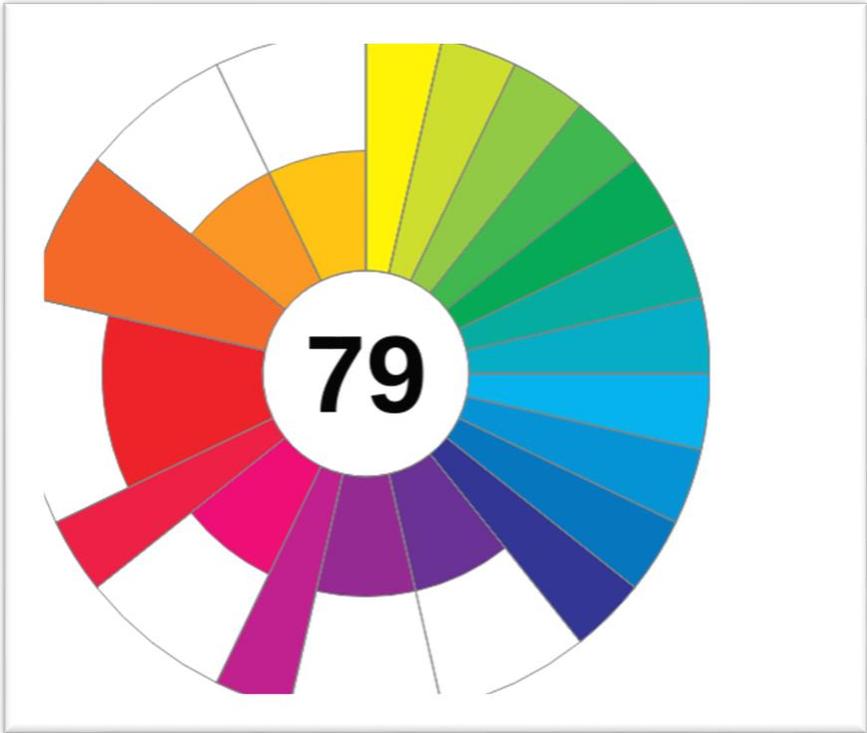


Figure 9 (Unfinished Heat Grid Graph)

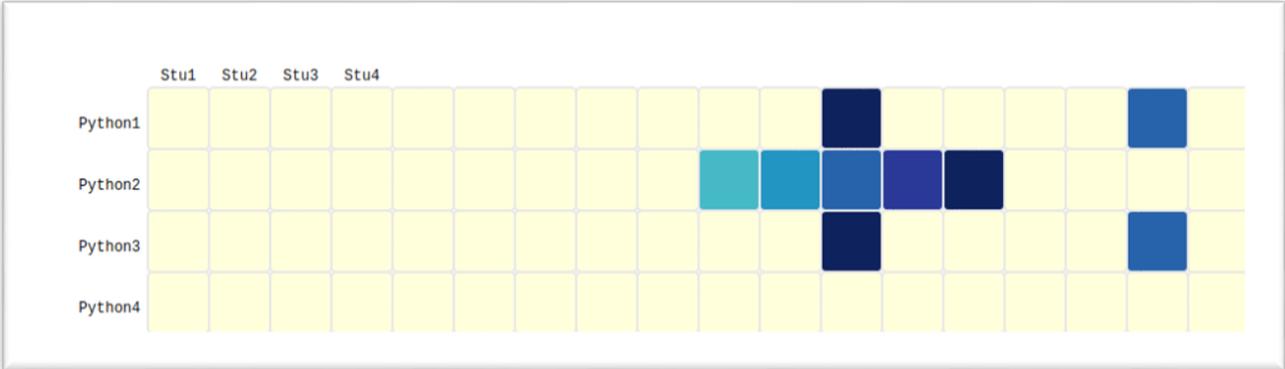


Figure 10 (First Demo Home Page)

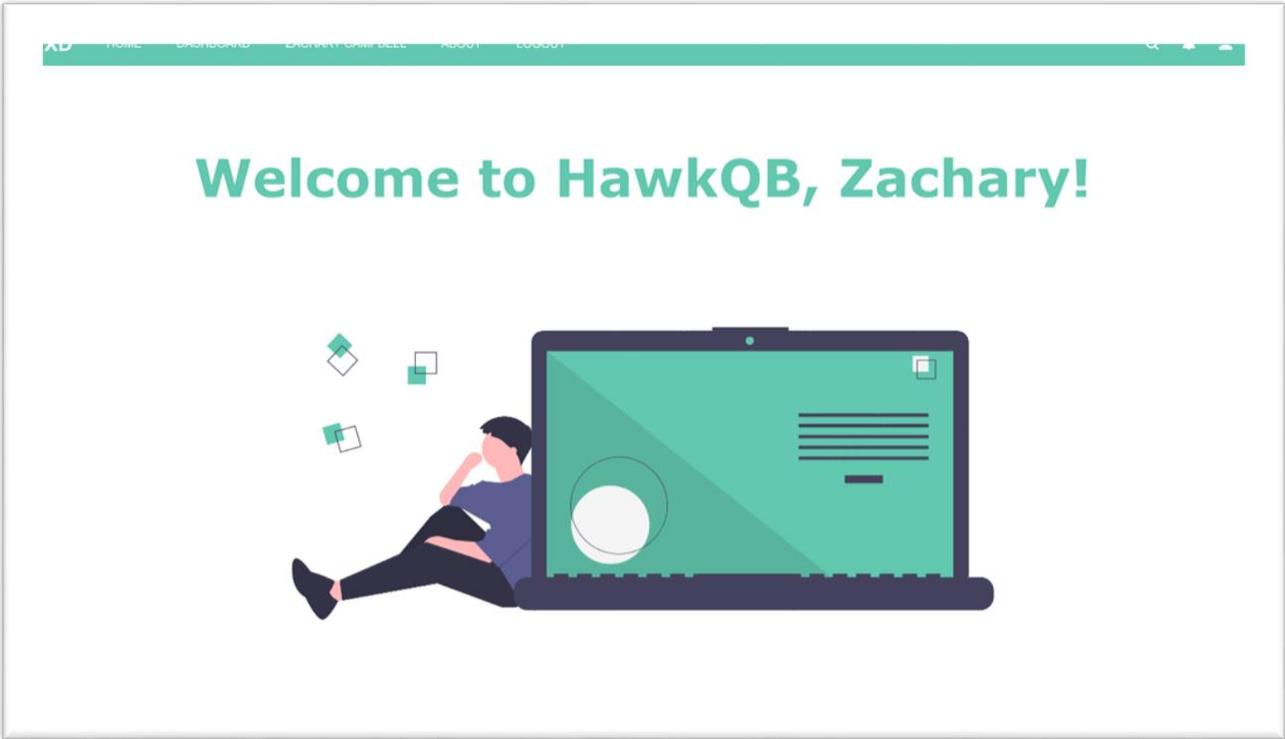


Figure 11 (First Demo Courses Page)

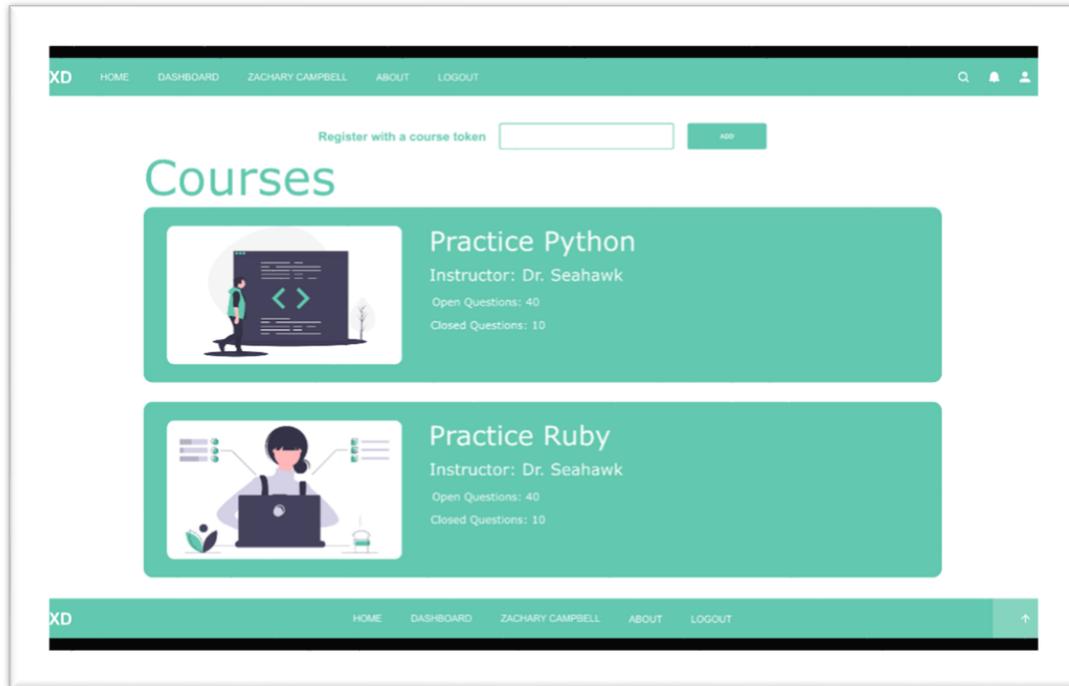


Figure 12 (First Demo Profile Page)

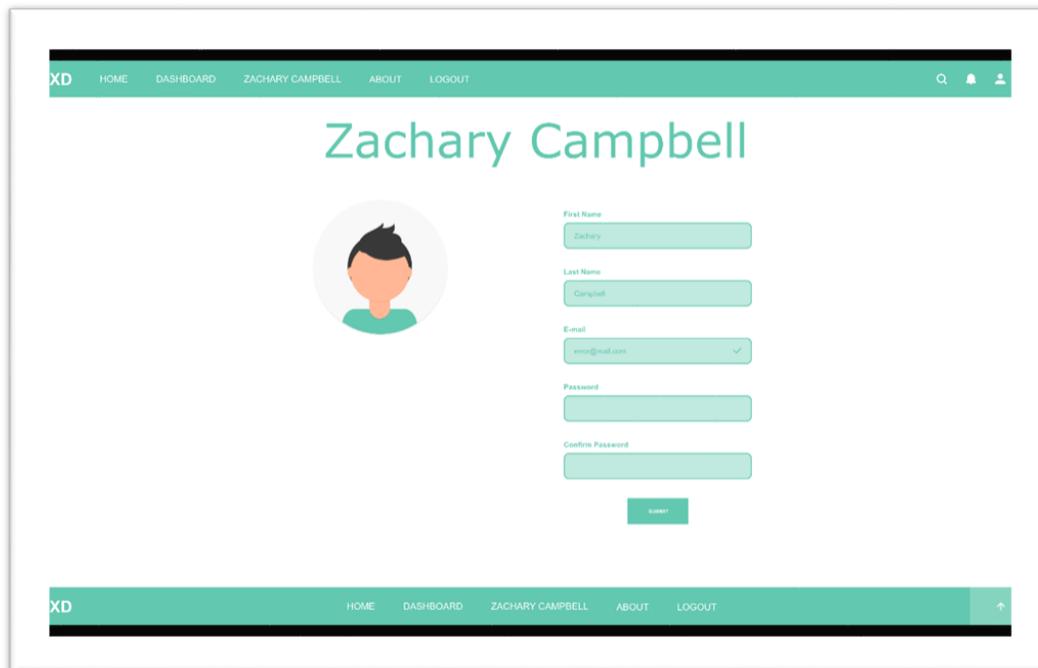


Figure 13 (First Demo About Page)



Figure 14 (Original Style Guide)

