INTRODUCTION

Hello, my name is Jesse Dalton, and I am presenting my Capstone Project, Aviation Index.

Aviation Index is a study tool for pilots.

It functions as a library of fundamental aviation information, presented in an organized and structured way. Users can view things like aviation topics, questions, and study flash cards. Study information can be filtered in various ways if the user would like to focus on a specific topic. The user can also track and review their personal progress as they learn the material.

First, I'll show the home page, or landing page. This page provides a brief description of the application and is designed to entice the user to create an account by displaying the benefits of studying using the application.

SECURITY

Aviation Index uses a current, safe, and robust security protocol to authenticate users. Most of the application assets are only accessible once the user creates an account. Additionally, some features are only accessible to users who have been given admin privileges.

Here is the Login page. If you are a new user, you can navigate to the register page to create a new account. The user is prompted for their username and password. If these credentials do not meet the security requirements, an error message is displayed.

Once a user account is created, the user is prompted again to enter those credentials to log in and begin their secure session.

Once authenticated, a user can access the protected assets of the application. Let's navigate to the profile page to view the user's new profile.

Right now, the only piece of public information associated with a user account is the username.

From this page, a user can update their username or password.

Let's change this user's username to something else, and then view that update on the profile page.

Let's also update the user's password. This function requires the user to verify their current password. As a side note, all passwords are hashed before storage using BCrypt.

Let's now log out and end the user's secure session. This will take us back to the home page. If I attempt to log in with the old password, I will not be granted access. Using the new, correct password, I can again gain access to my account.

TOPICS AND QUESTIONS

Ok, let's dive into the aviation content.

The place that users will typically begin is the topics page. All of the aviation information is organized into topics. The topics are organized hierarchically, meaning that each topic can have subtopics, and users can navigate this topic tree to narrow the focus of their session.

From a subtopic page, we can navigate to any parent of that topic, as well as any further subtopics belonging to that topic.

We can also view the questions that are associated with the given topic. That brings us to the next page, the questions page. This page allows users to view all the questions that the application provides, regardless of topic.

It also provides a search bar here, where the user can filter the questions using a search term. Let's search the library for TAF. Now we can see all the questions about TAFs. Notice that the search feature looks at both the question and answer parts of each question when performing the search.

From either the topics page or the questions page, the user can view both the questions and answers to study the information and become familiar with the format.

STUDY SESSIONS

Next is the Study page. This is the bread and butter of the application. This page presents each question as a flash card, allowing the user to quiz themself on the presented information. The page provides an input box for the user to jot down their answer (if they would like, it's not required). Then the user can click the show answer button, which will reveal the correct answer to the question. From here, the user can compare their answer to the provided one. The application does not restrict the user to any specific answer. Instead, it provides its interpretation of the correct answer, but allows the user the freedom to decide whether their answer matches.

Once ready for the next question, users can use these buttons on the sides to cycle through all the questions that are currently in their study session.

Users can also track their progress on each question as they study using the study status feature. Each question that is shown on the study page includes a status field, indicated by these buttons at the bottom. The user can mark each question with one of four statuses: New, Focused, Learning, or Mastered. These can be changed at any time and to any status.

Whenever the user revisits a question, this status is persisted.

Study question statuses are intended to be used as a way for users to indicate how comfortable they are with their mastery of each question; however, the user can use them in any way they see fit.

The next feature of the application that I will demonstrate is the filters feature. Let's navigate to the filters page. Here we see two filter options that the user can adjust: study topic and study status.

The study topic filter allows users to filter their session by a given topic, which will limit the questions that the user sees on the study page to only questions that belong under the specified topic. This filter can be set on that given topic's page.

This filter will include questions that belong to any subtopic of the specified topic in the user's study session. For example, if I navigate to the Weather topic page, we can see that questions belonging to the weather topic include general questions about weather, as well as more specific questions like these ones about TAFs, which belong to a subtopic of weather. When I head back to the study page, I will see all of these questions are available for study, given the current topic filter.

The same applies to the study status filter. Any question that matches the given topic filter, AS WELL AS the given study status filter, will be available from the study page.

Again, to demonstrate, let's set the study status filter to learning, and we will see that each question has been marked with the learning status.

The user can clear these filters at any time from the filters page. Any time the filters are changed, the available study session questions automatically update.

If no questions match the user's chosen filters, they will see this message from the study page.

REPORTS

Moving on to the reports section. This page is a report of the user's overall progress and shows the percentage of all the questions that have been marked with each study status.

If I mark a bunch of questions with a different status, we will see that change reflected here on the reports page.

A user can reset their progress with this button, setting all of their questions back to New. We can see that change reflected here as well from the study page.

ADMINS

The final set of features that Aviation Index provides is a toolbox for admin users designed to allow them to curate the aviation content.

Let me log in to an admin account.

Admins have access to all the same features that base users do, with the addition of these features on the topics page.

These buttons allow admins to make changes to the aviation content.

Let's add a new subtopic to the weather topic. How about Weather fronts? Save. Now we can see that the newly created topic is available as a subtopic of weather. We can also navigate to the new topic page. Let's say I made a mistake and wanted to capitalize the word fronts. I would click Edit, enter the corrected topic name, click Save, and then see the change here. I can also delete this topic if it is no longer needed, and we will see that it is not in the list of subtopics anymore.

If a topic has any subtopics or associated questions, the application will deny the user from deleting the topic. We don't want to be able to delete too much information all at once, and this mitigates that.

Questions can also be created, edited, and deleted from this page.

This concludes my demonstration of Aviation Index.