USER'S MANUAL

Path Finder - Web Application

for Questionnaire Services

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Revision Sheet

Release No.	Date	Revision Description
Rev. 0	4/20/23	User's Manual Created
Rev. 1	4/25/23	Added Flask Installation Tutorial

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1.0   GENERAL INFORMATION

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1.1   System Overview

Path Finder is an immersive web application that utilizes an intuitive user interface for answering questions in a questionnaire that is efficient and fast. This program provides a graphical user interface that allows a user or guest to choose an answer to each question and then view generated results. The results are generated from question features that pertain to UNCG majors.

This program uses a client/server based model. The client is what the user uses to take the questionnaire. The client program will communicate with a MySQL server that saves all the questionnaire answers. The question answers are the features used to generate resulting majors. Logged in users can optionally save results. To sign up one must provide a name, email, and password.

1.2   Acronyms and Abbreviations

XAMPP – The X stands for Cross-Platform, A stands for Apache, M stands for MYSQL or MariaDB, and the Ps stand for PHP and Perl, respectively.

HTML – Hypertext Markup Language

CSS – Cascading Style Sheets

PHP – Hypertext Preprocessor

JS - JavaScript

MySQL – This is a free SQL database used to store all information for each user.

DBMS – Database Management System

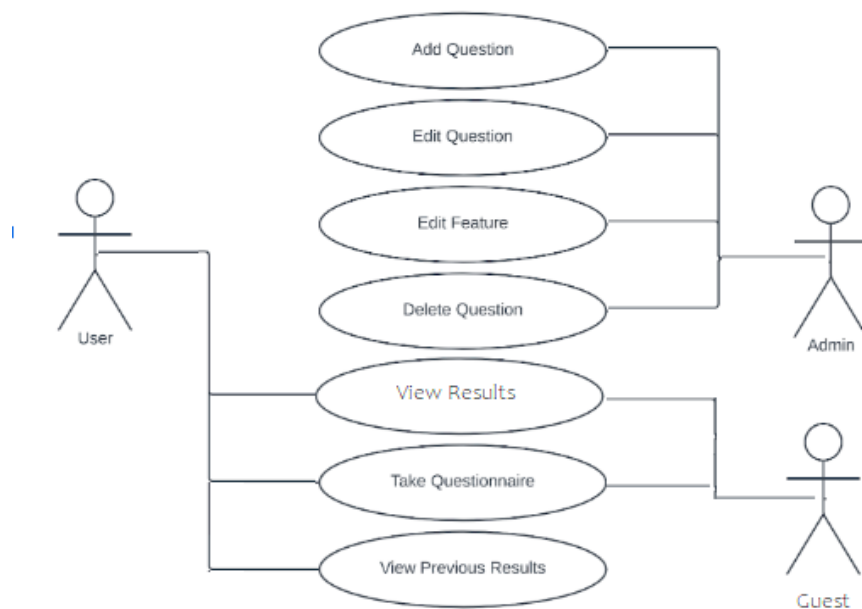CSV – Comma Separated Values (plain text file that contains a list of data)

2.0   SYSTEM SUMMARY

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2.1   System Configuration

The person can run the web application in any internet browser with Localhost, and the webapp will connect to a database management system in MySQL software (XXAMP). Apache may be uses apart from MySQL to run the webapp, but parts where the program interacts with the database will not function properly. The database management system protects passwords by hashing them.

2.2   User Access Levels

There are three different types of users as depicted in the image above. Admin Users have authority to view and change questions along with question features within the database. Guests can take the questionnaire view results, and the User which must be logged in can save results.
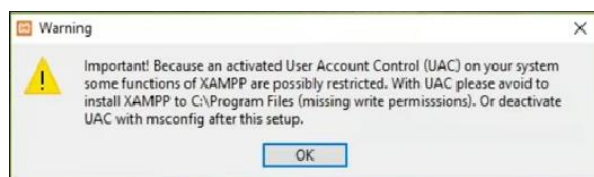
3.0   GETTING STARTED

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3.1   Setting up MySQL, Apache with XAMPP

We first start by going to [Download XAMPP (apachefriends.org)](apachefriends.org) and selecting an installer based on our operating system.
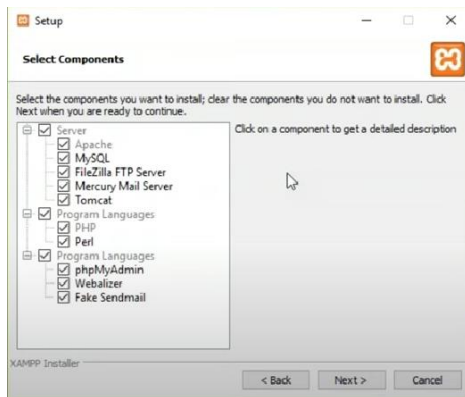

Next, open the executable file. For example, "xampp-windows-x64-8.0.28-0-VS16-installer.exe". This will begin the setup and installation instructions for XAMPP with MySQL and Apache.
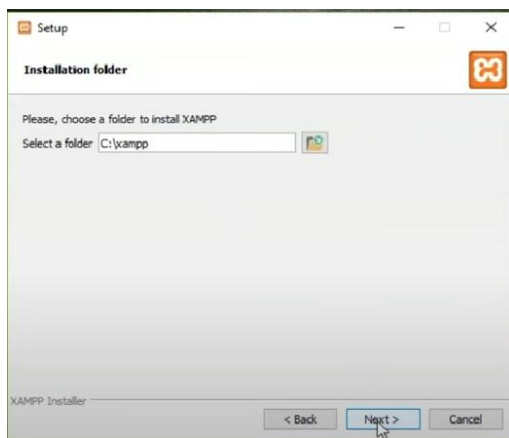

-Select "OK" then click the "Next >" button

-Now make sure to the check boxes "Apache," "MySQL," "phpMyAdmin," and click the "Next >" button
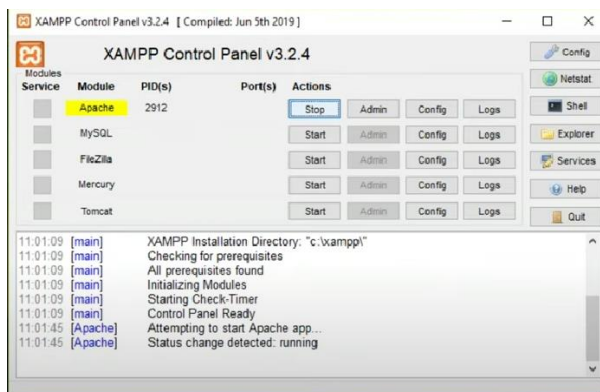

-Choose an installation folder then click "Next >" three times to begin installation

-Once the installation is complete press "Finish"

After the installation is complete you must open the XAMPP Control Panel.

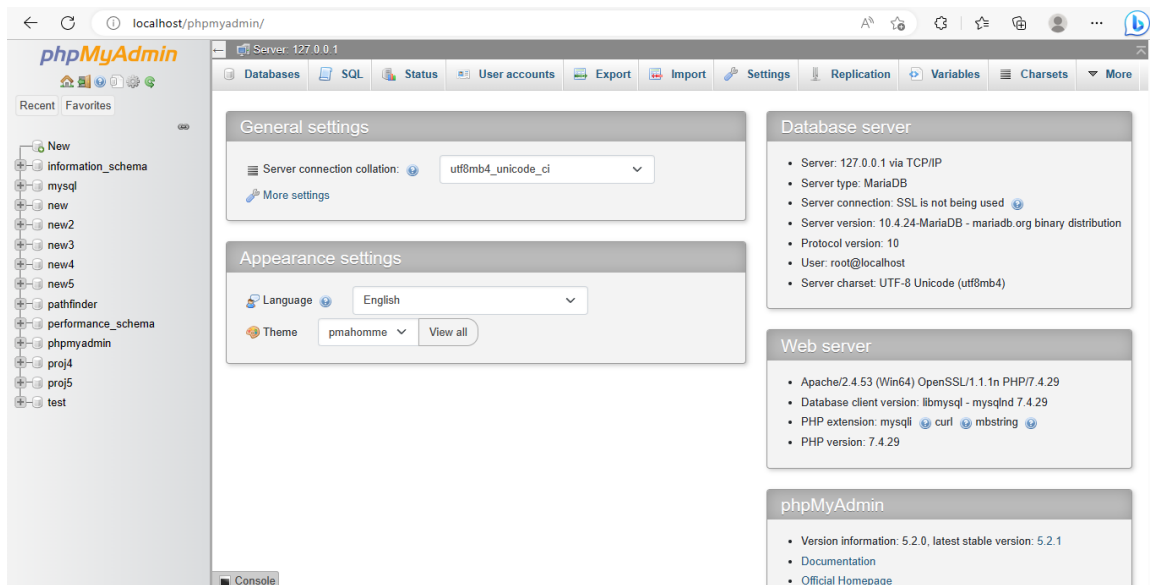-Click the "Start" buttons for Apache and MySQL

-Click "Allow Access" for Windows Defender Firewall

Note: Everything for the DMBS have been installed at this point. Now, both Apache and MySQL are running in the background until you click "Stop."
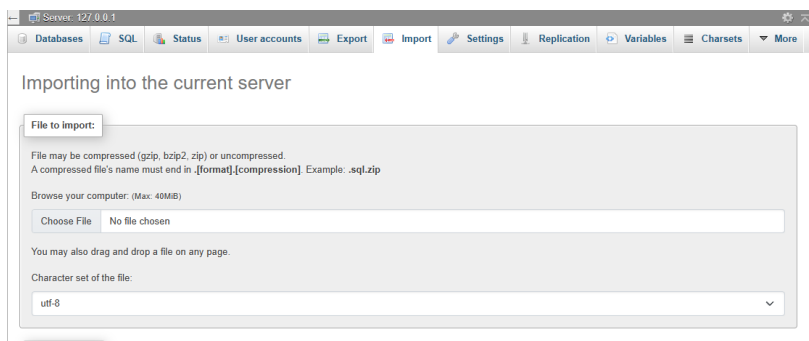
3.2   Create the database in PhpMyAdmin

Our first step to setting up the database is to open PhpMyAdmin. One way to do this is through the XAMPP Control Panel. Simply open the XAMPP Control Panel. Alternatively, you can type "localhost/phpmyadmin" in the browsers address bar.

The database is like a container for all of the information used in this application. We must first find the header navigation bar at the top.

-Click the "Import" tab.

-Click "Choose File" and locate "path_finder.sql"
-Scroll down to the bottom and click "Import"

Once found, the SQL file contains all the necessary code to create the database, tables, and insert data (already implemented within the code provided in the application).

3.3 htdocs and Localhost

We must ensure that the location of PathFinder is set up to work properly with XAMPP and the browser. The PathFinder application folder must be placed in the 'htdocs' folder found in the 'xamp' folder. An example directory 'C:\xamp\htdocs' would be where the application folder should go.

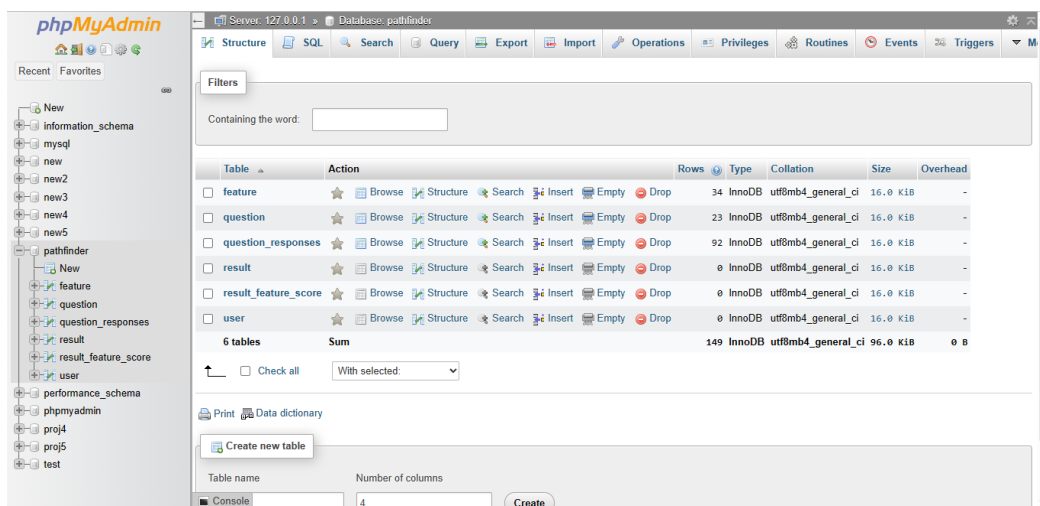Note: PathFinder's application folder is named "CSC-490-Senior-Capstone"

Now that we have gone through setup, let's open a browser to test the application. Type, 'localhost/CSC-490-Senior-Capstone/'
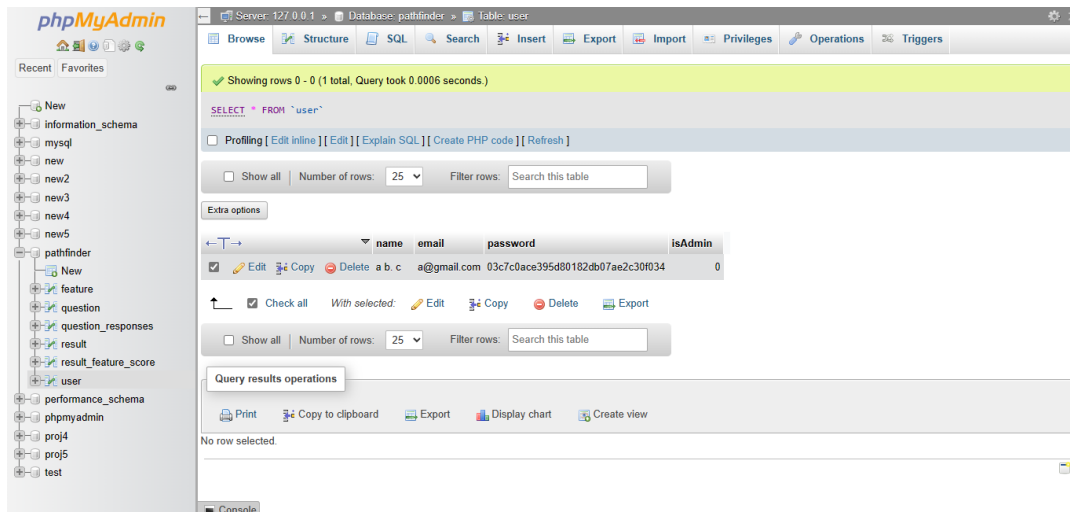
3.4 Creating Administrators

Database modification is one of the things that must be done for there to be administrators. As you may have already noticed, there is a 'users' table. Now, this table stores the information once an account is created, and consists of 'name,' 'email,' 'password,' and 'isAdmin' as attributes. The 'isAdmin' attribute has a length of one integer. The system checks for 0 or 1 in this attribute. The default value for new user accounts is 0. To become an administrator, one must be an existing user (for more information on how to create an account, go to section 4.1.3).
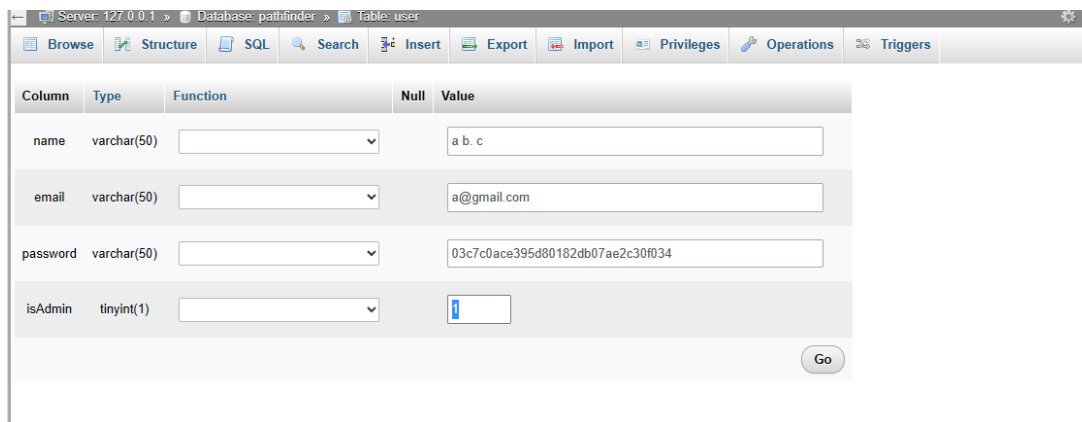
Open "PathFinder" in PhpMyAdmin
-Click "Structure" from the top navigation bar

-Click "user" then you will see the table entries

-Check the box for the account or accounts to be promoted from user to admin
-Click the "Edit" tool

Change the value from the last input field by typing a 1 for administrator.
-Click "Go"

3.5   Flask Installation

The results for Path Finder may require this setup tutorial. Set up for Flask involves using the terminal in VS Code or another integrated development environment. Using terminal commands will install it, and to run it, activate the environment from the terminal.

-Run the command 'pip install flask'

-Next, run the python file 'app.py'

If anything needs installation such as Pandas, NumPy, Scikit-Learn, an error message will come up in the terminal. Please make sure to install whatever needs to be installed, indicated by the error messages.
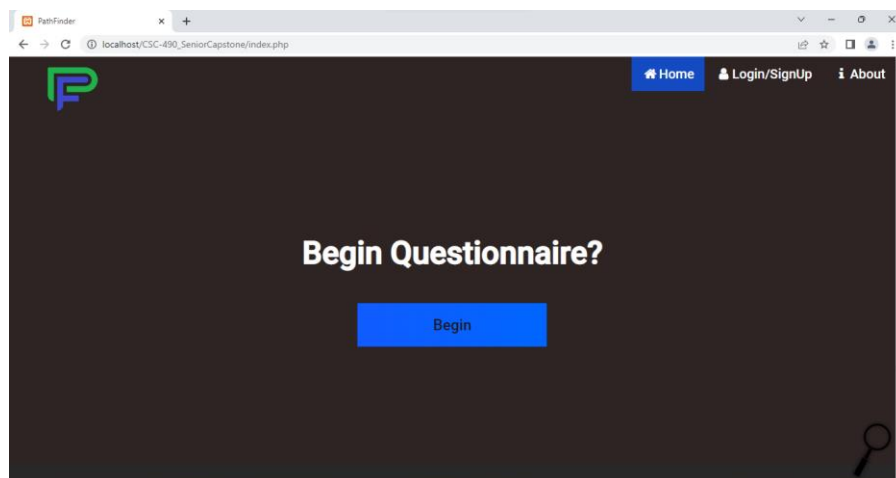
For information on installing Flask, please visit: https://flask.palletsprojects.com/en/2.2.x/installation/

4.0   USING THE CLIENT APPLICATION

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4.1   Basics

When you open the web application, you will see the words "Begin Questionnaire?" The default page is the home page or 'index.php.' The user may click the "Begin" button to start the questionnaire. If the user does this without logging in, they will be referred to by the system as a guest. A guest has no option to save results, nor do they have the option to view previous results.
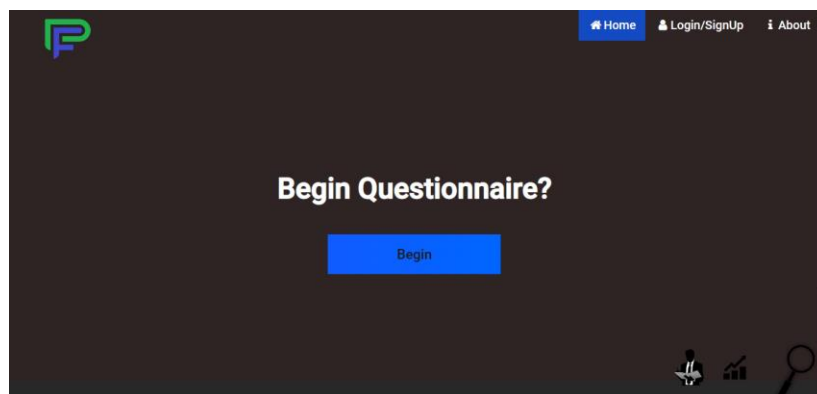

The Navigation Bar inside the header displays the 'Home,' 'Login/Signup,' and 'About' buttons. The PathFinder logo, if clicked, will redirect the current page to the home page.
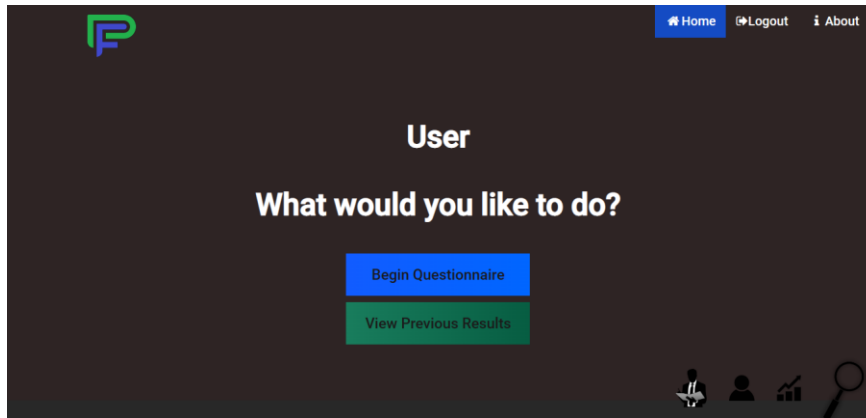
4.2   Questions

The guest/user questions are multiple choice with four answer choices, and a total of 24 default questions.
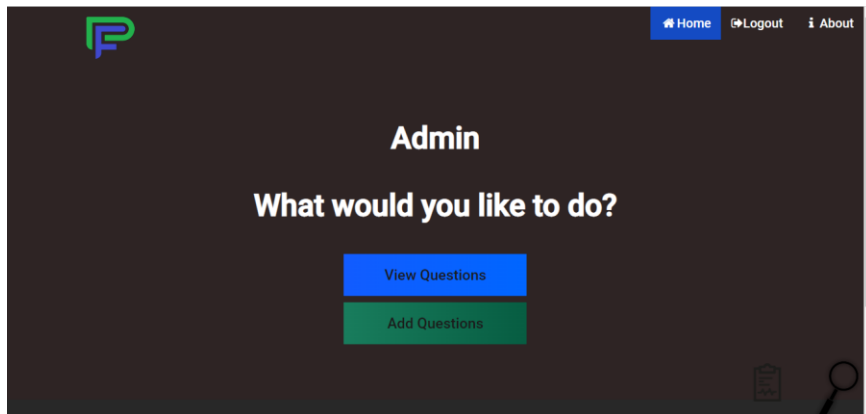
4.3   Magnifying Glass Widget

The widget, located in the bottom right corner, will open a set of tools that pertain to the user/guest/administrator. For example, the guest does not have the 'User' icon.

The man icon will make the user/guest take the questionnaire, and the graph and arrow icon will allow them to view results.
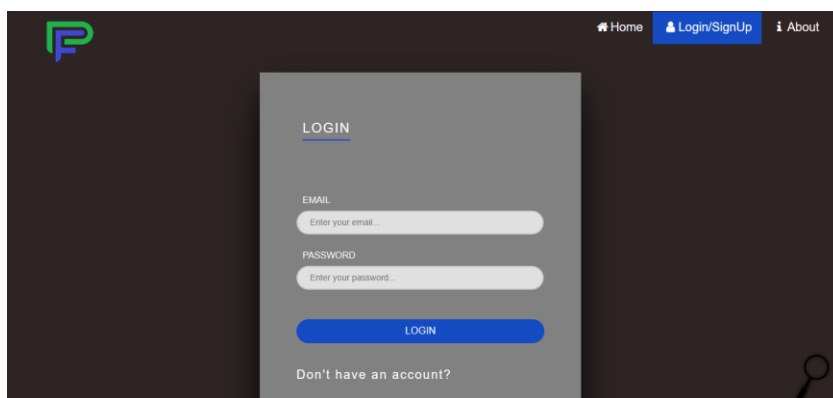

The user widget brings the user back to the User page.

The clipboard widget brings the Administrator to the Admin page.
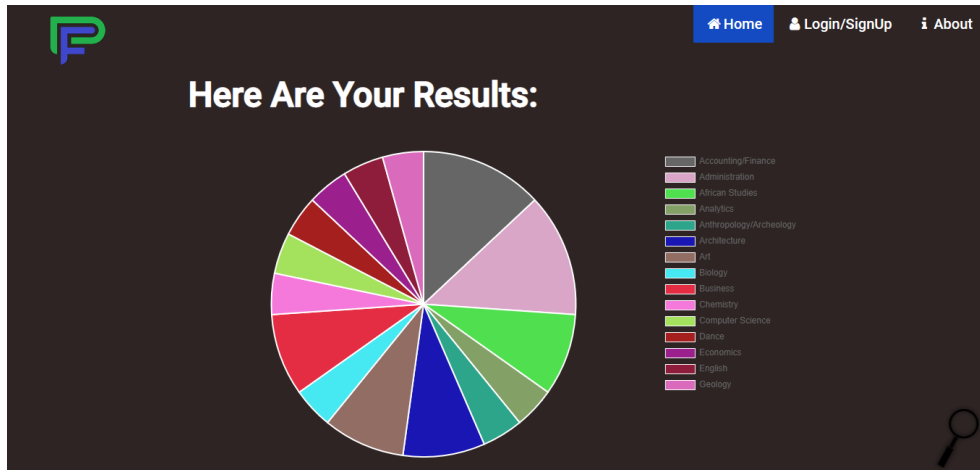
4.4   Signup and Login

The Login page is the first page that comes up when the "Login/Signup" button is clicked. First we will create an account.

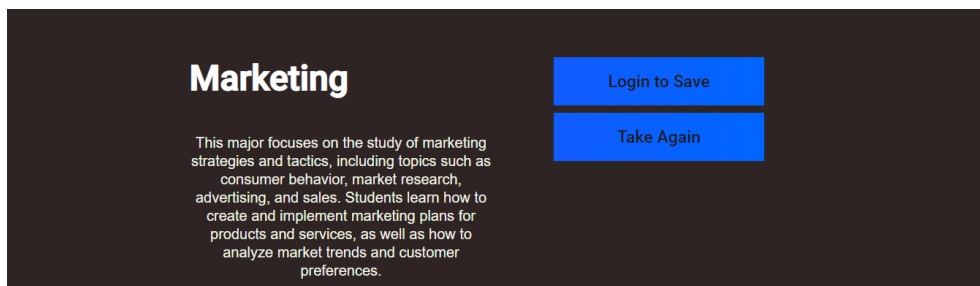-Click the "Don't have an account?" link, located below the "Login" button

4.5   Results

The results generated are based on UNCG majors and courses, and with the question answers, the machine learning system finds majors that are most relevant to the questionnaire results.
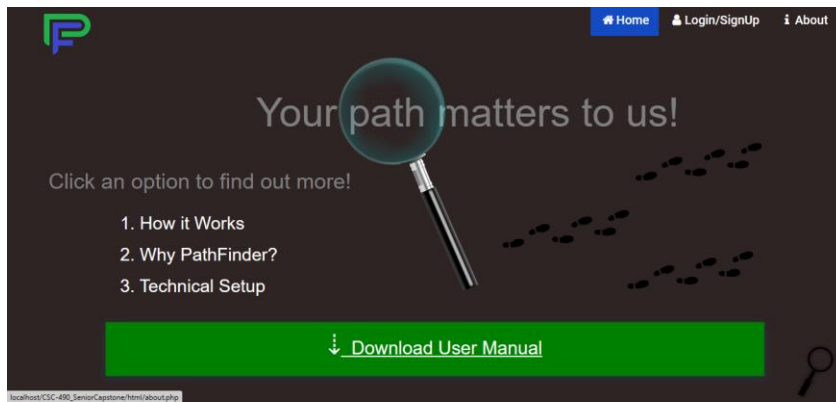

A pie chart is shown upon completion of the questionnaire, along with a list of majors.

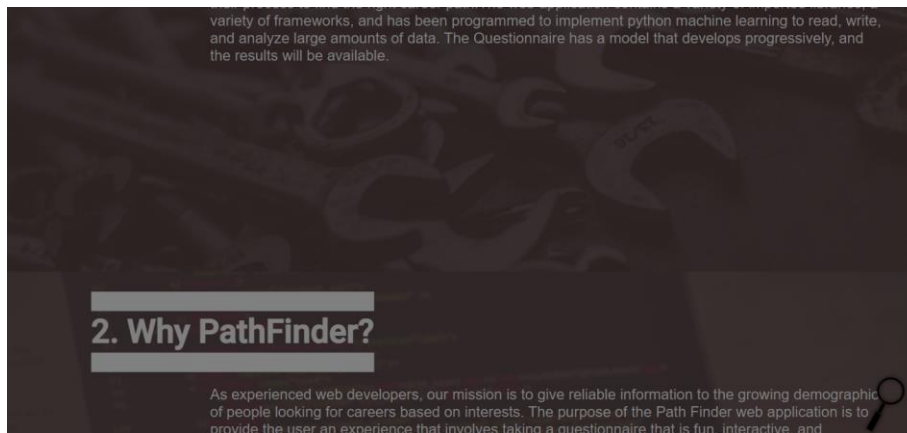Bottom of results with Flask and Python running:

4.6   About Page

The About Page is a brief page about why we chose PathFinder. To download the User Manual there is a "Download" button. There will be a confirmation message that comes up before the file download starts.
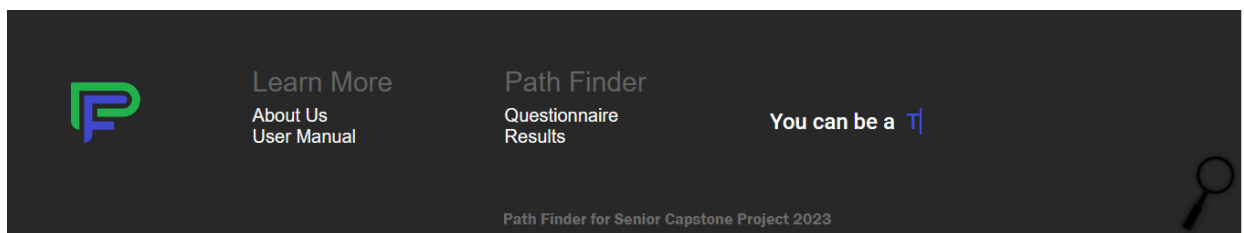
The options are links that allow you to explore the about page by simply scrolling the page down to the section when clicked.

4.7   Footer

The Footer has several links to click.

The "About Page" link navigates to the about page. The "User Manual" link downloads the user manual with a prompt message. The "Questionnaire" link navigates to the home page. The "Results" link bring the user/guest to the results page.