

Team Name: Teenage Mutant FullStack Turtles

College Application Tracker

By: James Castro, Joseph Spivack, Nathaniel Chan, Deanna Liu

CSE 416

DESIGN

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System Architecture

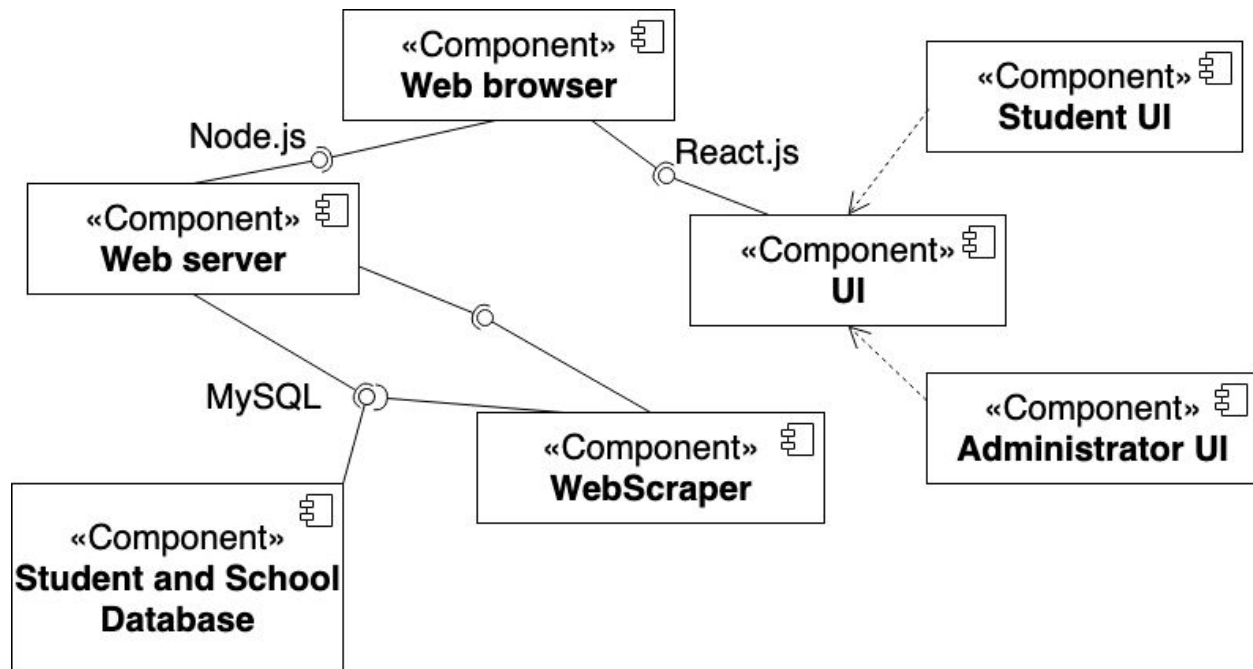


Figure 2: c4me UML component diagram showing the main components

Components Include:

1. Web Browser: The common browsers (Chromium-based browsers & Firefox) will be used to access the webapp. This is done by performing get requests to the React server (Labeled UI) for each website. It will then (according to the sties design) perform get or post requests to the Node.js Web Server to obtain specific data or modify data.
2. UI: Website will be designed using a React server that uses Materialize.css and Bootstrap as the frontend frameworks. The User's web browser uses get requests to obtain html files for each webpage.
 - a. Student UI: The Student UI is the part of the website only accessible to Students. Authentication using cookies containing session IDs issued on login will be performed on each sensitive request to confirm that the user performing the action is allowed to.
 - b. Administrator UI: The Administrator UI is the part of the website only accessible to Administrators. Authentication using cookies containing session IDs issued on login will be performed on each sensitive request to confirm that the user performing the action is allowed to.
3. Web Server: Node.js server that deals with all front end requests and database interactions. It serves requests from the browser by using both the web scraping component and database using MySQL. It will also read files directly on the web server.
4. Web Scraper: College rankings will be obtained from the college ranking site by accessing the site using Puppeteer. It will take requests to perform the web scraping from the Web Server and save the results to the Database.
5. Database: Uses MySQL to store data from the student information Web Server component and school information web the WebScraper component.

Class Model

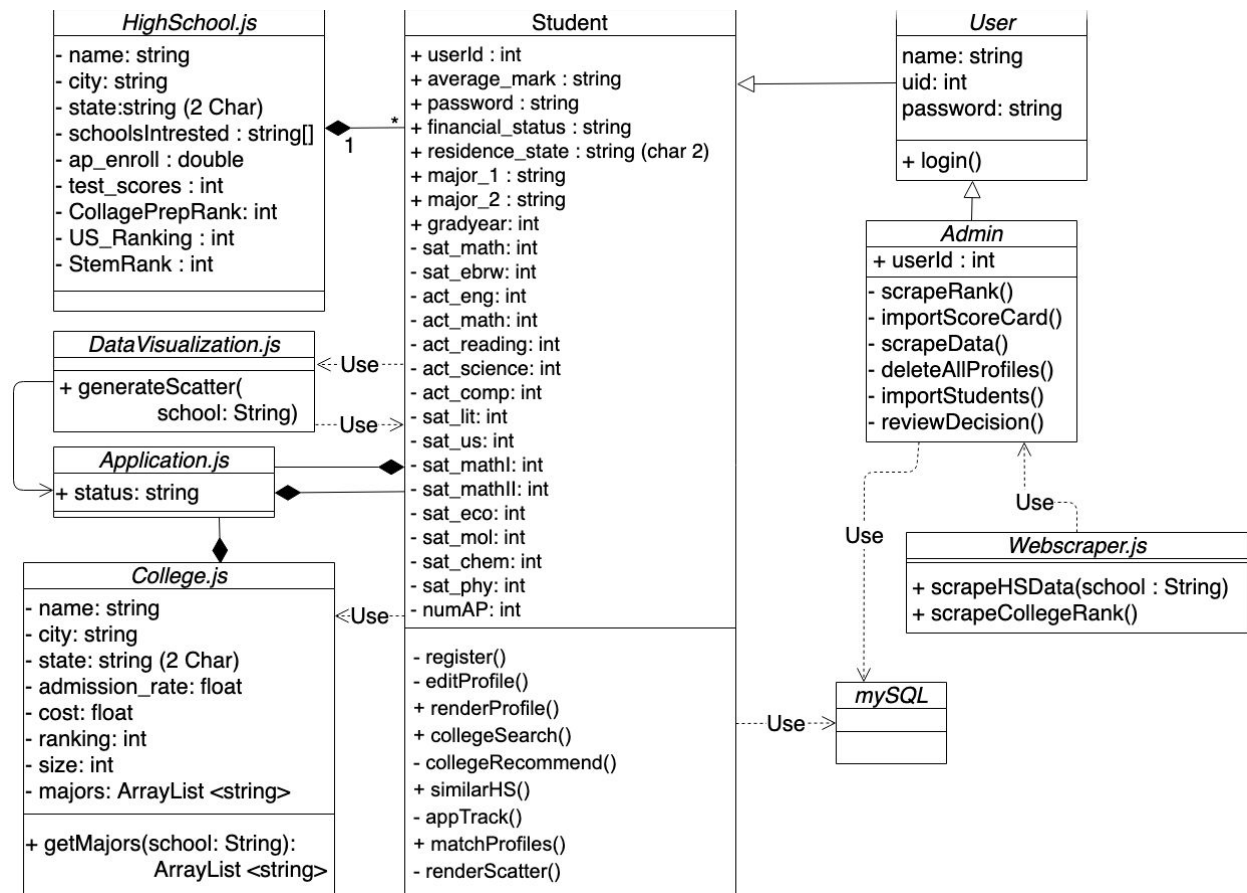



Figure 3: c4me class diagram showing all the application domain classes and other significant classes and their relationships

GUI & System Flow

○ ○ ○ teenagemutantfullstackturtles.com/login

Login



username - [forgot your username?](#)

password - [forgot your password?](#)

☒ remember me

Need an account? Register [here](#)

GUI Wireframe 1: Login Page This is the basic login screen. When the “login” button is pressed (with valid credentials), the UI will redirect to **GUI Wireframe 3: Similar HS Page**.


teenagemutantfullstackturtles.com/register

Information

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc maximus, nulla ut commodo sagittis, sapien dui mattis dui, non pulvinar lorem felis nec erat Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nunc maximus, nulla ut commodo sagittis, sapien dui mattis dui, non pulvinar lorem felis nec erat.

Aliquam egestas, velit at condimentum placerat, sem sapien laoreet mauris, dictum porttitor lacus est nec enim. Vivamus feugiat elit lorem, eu porttitor ante ultrices id. Phasellus suscipit tellus ante, nec dignissim elit imperdiet nec. Nullam fringilla feugiat nisl, ut pretium, metus venenatis dictum viverra, dui metus finibus enim, ac rhoncus sem lorem vitae mauris. Suspendisse ut venenatis libero. Suspendisse lorem felis, pretium in maximus id, tempor non ipsum.

[Already have an account?](#)



Register Form

First NameLast Name

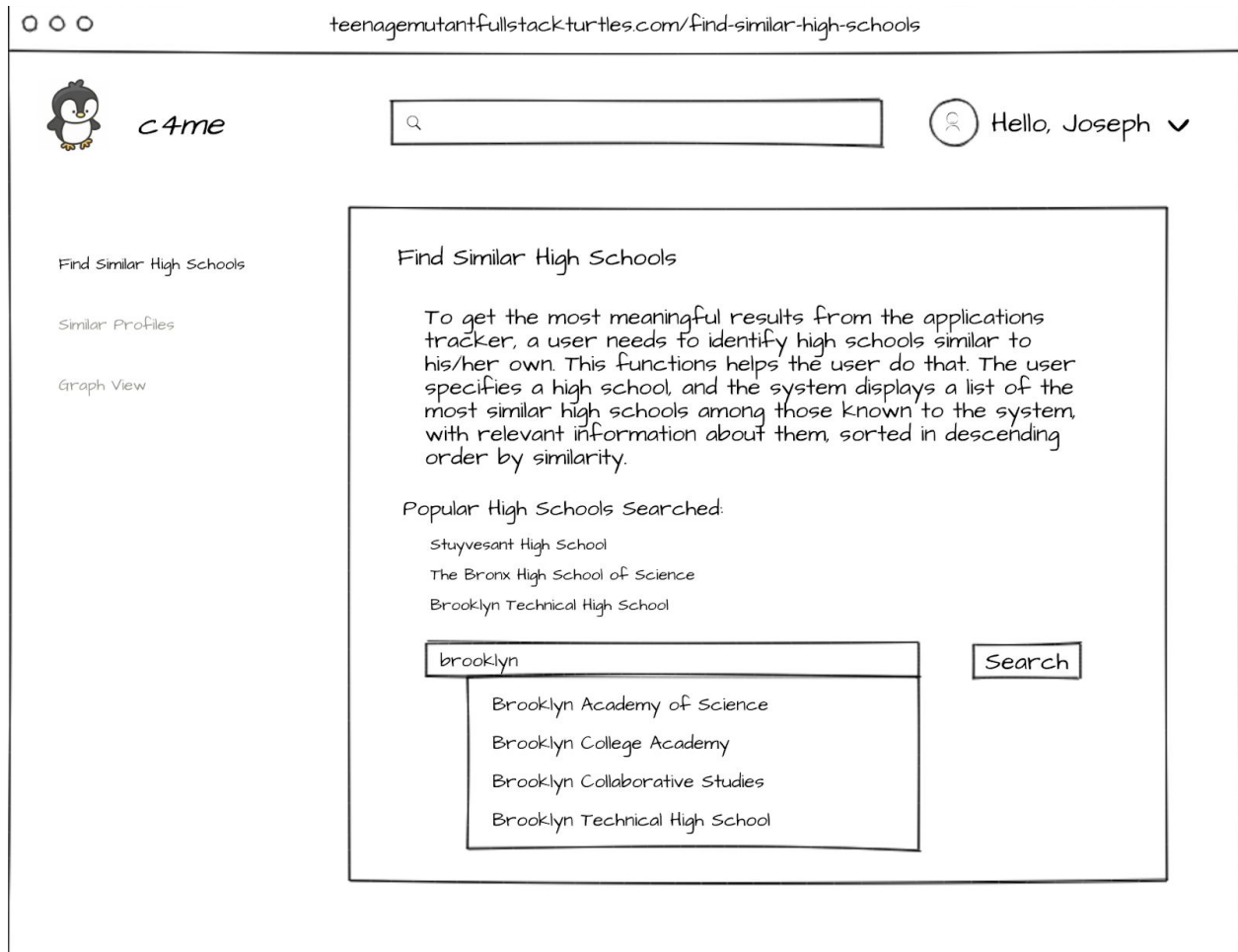
Email

Username

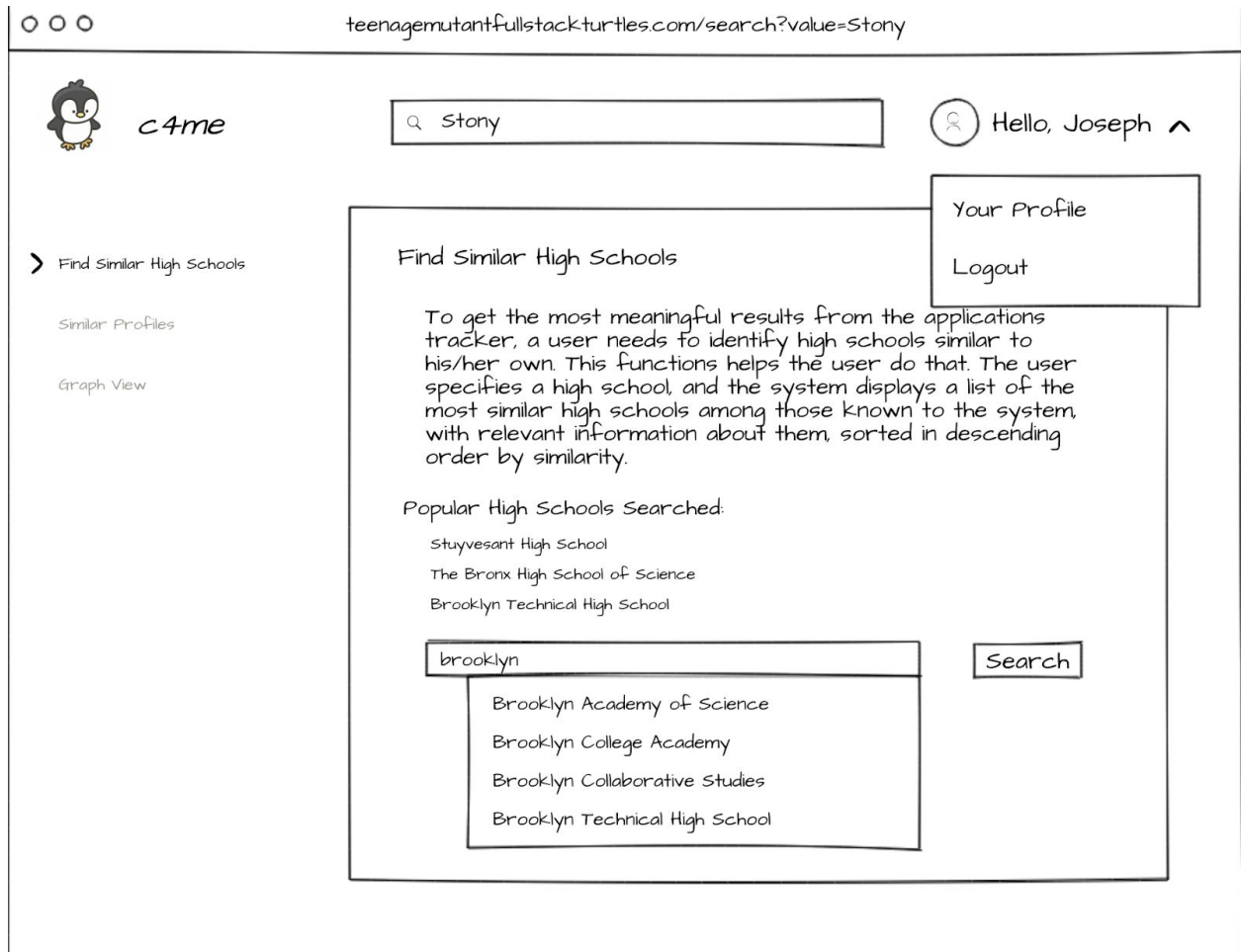
PasswordConfirm Password

☒ I agree with the terms & conditions

GUI Wireframe 2: Registration Page This is the registration page. When the “Already have an account” hyperlink is clicked on the UI will redirect to **GUI Wireframe 1: Login Page**. If the user does not have an account and wishes to create one, then they need to fill out the form on the right and once the “Register” button is clicked (with everything properly filled out), the page will direct you to **GUI Wireframe 3: Similar HS Page**



GUI Wireframe 3: Similar HS This is the page after the user is able to login. The page is simple and has the functionalities that the user is able to do as a side navigation bar. The top right corner welcomes the user and when the arrow down is pressed (next to the Joseph), a drop down will appear (refer to *GUI Wireframe 4: Dropdown*). When the search button is pressed (with a valid high school name typed), the page will replace the long paragraph with a list of high schools. The search bar on the top will redirect to another page that will allow you to filter search (refer to *GUI Wireframe 7: Search Page*). The side navigation bar has this page, Similar Profiles Page (*GUI Wireframe 5: Similar Profiles Page*) and Graph View (*GUI Wireframe 6: Scatterplot Page*).



GUI Wireframe 4: Dropdown This just shows what happens when the user clicks the arrow next to their name. Clicking “Your Profile” will redirect users to their profile (*GUI Wireframe 8: View Profile Page*) and Logout will allow the user to log out of their account.



c4me



) Hello, Joseph ✓

Matching Student Profiles

Find Similar High Schools

- Similar Profiles

Graph View

[illegible]


GUI Wireframe 5: Similar Profiles Page This page shows a list of matching student profiles that match with the user. The arrow on the top right is a drop down menu and looks the same as *GUI Wireframe 4: Dropdown*. The search bar on the top will redirect to another page that will allow you to filter search (refer to *GUI Wireframe 7: Search Page*). The side navigation bar has this page, Find Similar High Schools (*GUI Wireframe 3: Similar HS*) and Graph View (*GUI Wireframe 6: Scatterplot Page*).



GUI Wireframe 6: Scatterplot Page This page shows a scatter plot with data from students. The graph will have different colors to represent the student's application status. There is a dropdown on the X axis because the user's are able to view the plot based on the student's ACT's and/or SAT's. The arrow on the top right is a drop down menu and looks the same as *GUI Wireframe 4: Dropdown*. The search bar on the top will redirect to another page that will allow you to filter search (refer to *GUI Wireframe 7: Search Page*). The side navigation bar has this page, Find Similar High Schools (*GUI Wireframe 3: Similar HS*) and Similar Profiles Page (*GUI Wireframe 5: Similar Profiles Page*).



Q


Hello Joseph ▾

Admission Rate

Min

0%

Max

100%

Tuition

Min

\$0

Max

\$9999€

Location

Region ▾

Major

Major ▾

Size

Small

-1

Show 10 entries

Search:

Name ↑↓	Type ↑↓	Admission Rate ↑↓	Completion Rate ↑↓	Cost of Attendance ↑↓	Average Student Debt ↑↓	Ranking ↑↓	Size ↑↓	Score	Recommend
Stony Brook University	Public	50	75%	10000	20000	34	Large	Calculate	Recommend

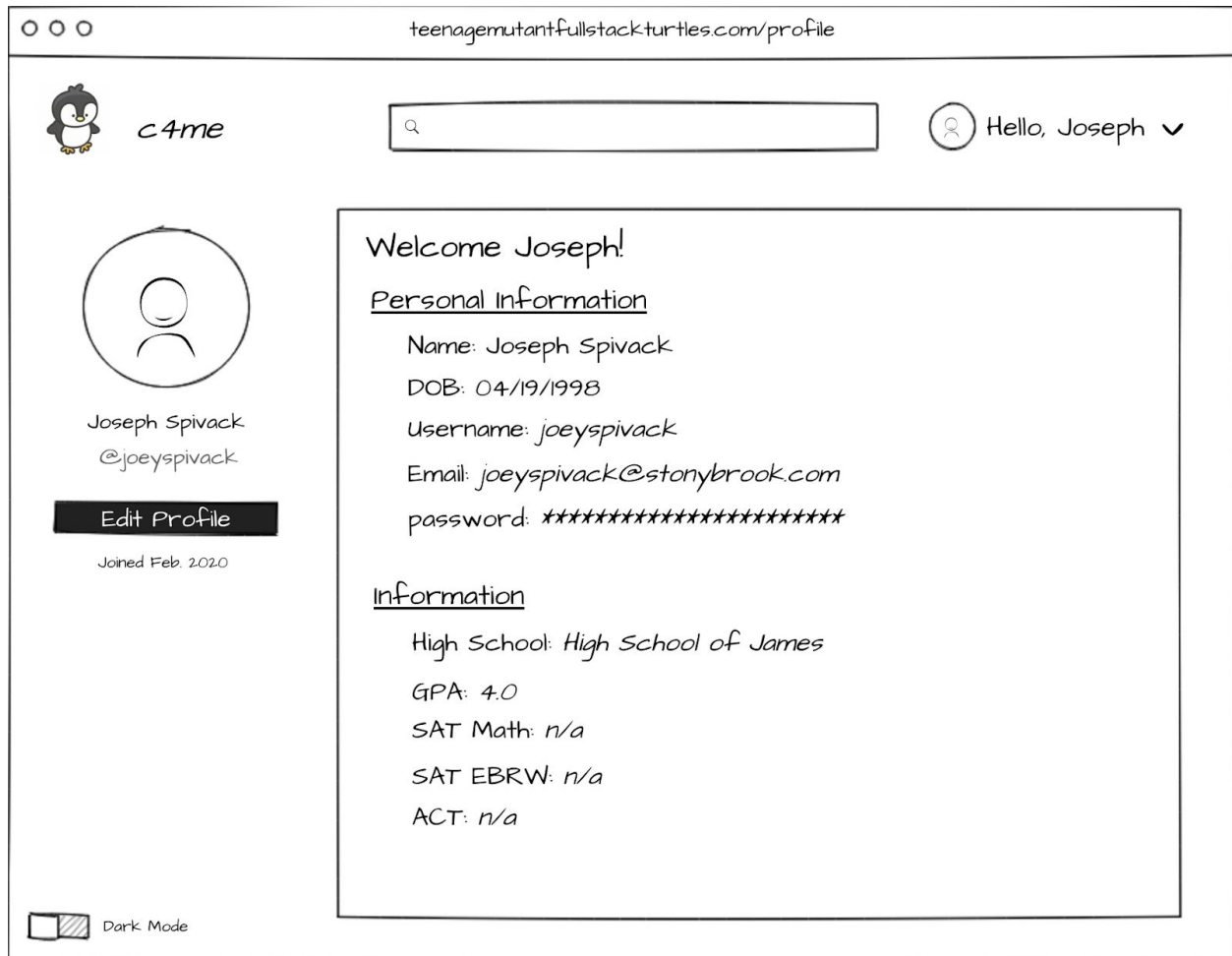
Showing 1 to 1 of 1 entries

Previous

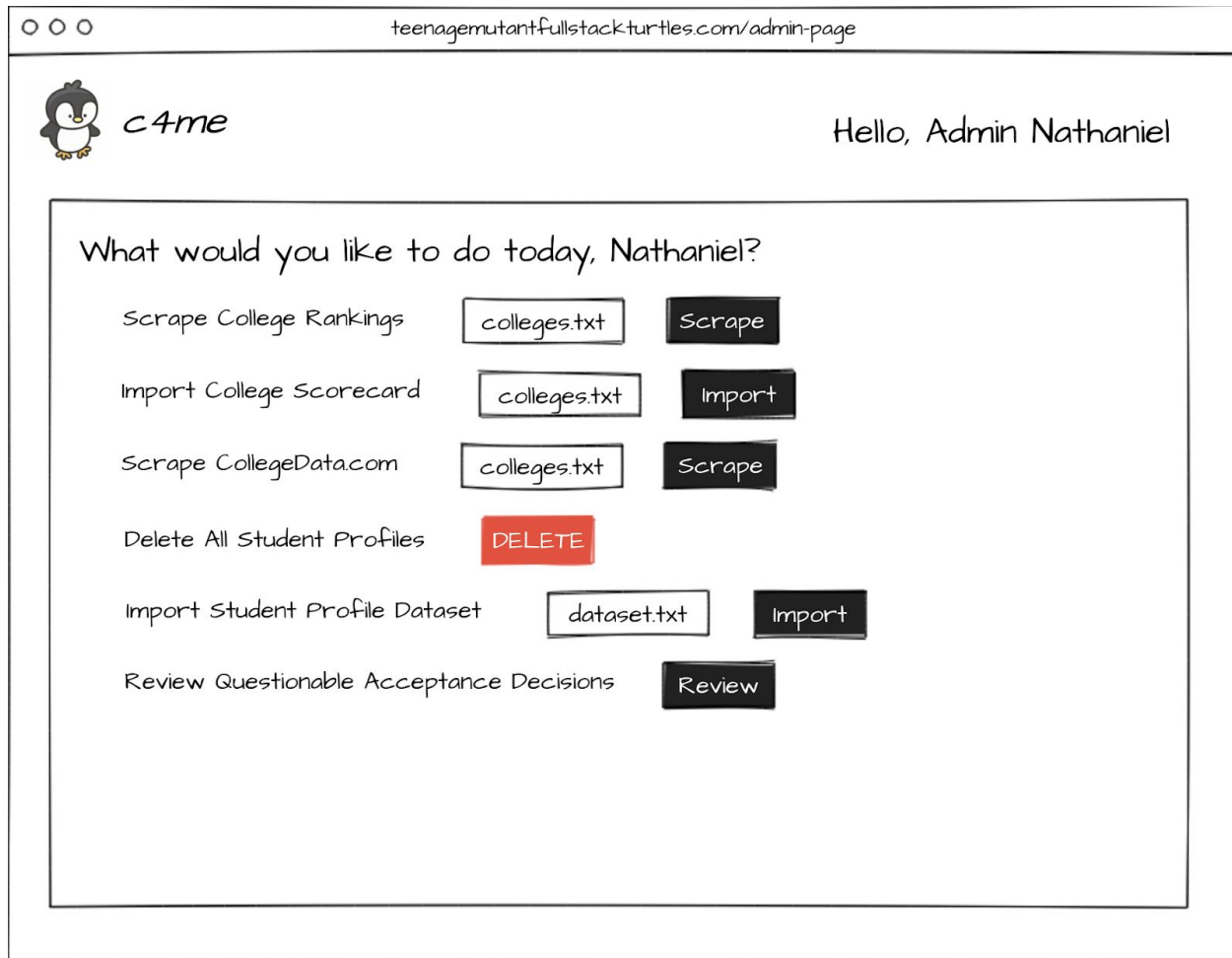
1

Next

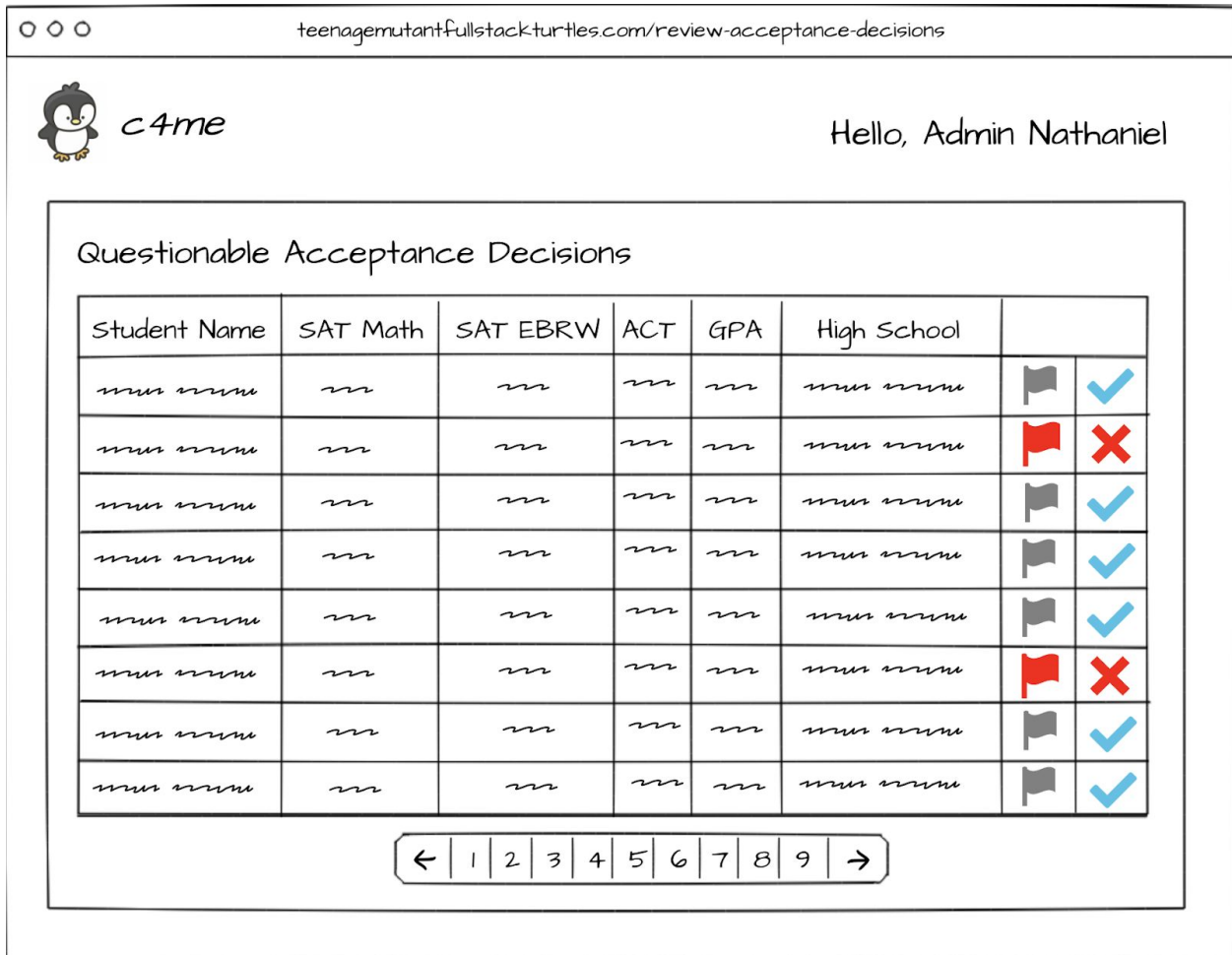
GUI Wireframe 7: Search Page This page shows a search page where users are able to search colleges/universities with certain filters on the left. The right area will show results based on the search terms and the filters. The arrow on the top right is a drop down menu and looks the same as *GUI Wireframe 4: Dropdown*. The search bar on the top will redirect to this page for a new search. There are two buttons: Calculate Score and the College Recommender Button.



GUI Wireframe 8: View Profile Page This page is the user's personal data, account settings, general information. There is a button on the left, called Edit Profile. Once clicked, it will lead to *GUI Wireframe 9: Edit Profile Page*, where users are able to edit certain information. The arrow on the top right is a drop down menu and looks the same as *GUI Wireframe 4: Dropdown*. The search bar on the top will redirect to another page that will allow you to filter search (refer to *GUI Wireframe 7: Search Page*).



GUI Wireframe 10: Admin Page This page has the functionalities that the administrators are able to do. There are 5 buttons. The first “Scrape” button will scrape WSJ/THE 2020 rankings of all colleges in colleges.txt. The second “Scrape” button will scrape information about all colleges in colleges.txt. The first “Import” button will import information about all colleges in colleges.txt. The second “Import” button will import student profile’s dataset. The big red “Delete” button will allow the administrator to delete all the student profiles. The “Review” button will redirect to another page where it will list out questionable student profiles for the administrator to review (refer to *GUI Wireframe 11: Questionable Page*)



GUI Wireframe 11: Questionable Page This page lists out questionable profiles for the administrator to review. If they are okay, then they can click the check mark, otherwise flag them for being questionable.

Languages, Technologies, and Tools

- UML diagrams - *draw.io*
- Wireframe - *wireframepro.com*
- Languages - *Javascript*
- Database - *mysql*
- Libraries - *node.js, react.js, express.js*