CS4116 Final Report

UL Singles

Group 4

Members

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Introduction

UL Singles is the first dating platform designed exclusively for UL students. Students can match with each other based on their profiles which include pictures, hobbies and a bio. Students can also browse other users and perform filtered searches to find the perfect match (e.g. list all men under 23 who are enrolled in computer science).

High Level Functionality

UL Singles is comprised of two account types, an Administrator and a User.

Our website will allow Users to:

- Register an account through the registration page.
- Log in to their previously created account.
- Add personal information to their profile such as:
    - Photo
    - Name
    - Age
    - Gender
    - Hobbies
    - Bio
    - Course & Year of Study
    - Pursuing status
    - Looking for type of relationship

- Access the Home page:
    - Containsevent box where a user can view events posted by admins. These will be date ideas focused within the college

- Access the Explore Page:
    - Users can view other user's profiles to find potential matches that are suggested based on what the user has selected in their own profile. (e.g. a user who is male,

pursuing females will be suggested to a user who is female, pursuing males.)
    - Users can then choose whether to adore or to ignore other users' profiles based on the information they have provided. Once two users 'adore' each other's profiles, they have 'matched' and can now send messages to each other through the messages page.

- Access the Search Page:
    - Users can search for individual profiles using the search bar. They can click on a name to bring up that person's profile.
    - They can also use a variety of filters; gender, looking for, college year, age and hobbies

- Access the Messages Page:
    - User can message their matches

- Access the Matches Page:
    - Users can access messages, report or remove their matches.

- Jump between pages with ease through the use of a dropdown menu.

Our website will allow Admins (that have extended functionality that is not available on user accounts) to:

- View all user profiles.
- Add / Update information on the Home page.
- Remove profile pictures and edit information on any profile.
- Temporarily suspend or permanently ban any user account with reason.
- Delete user accounts.

Web Page Mockups

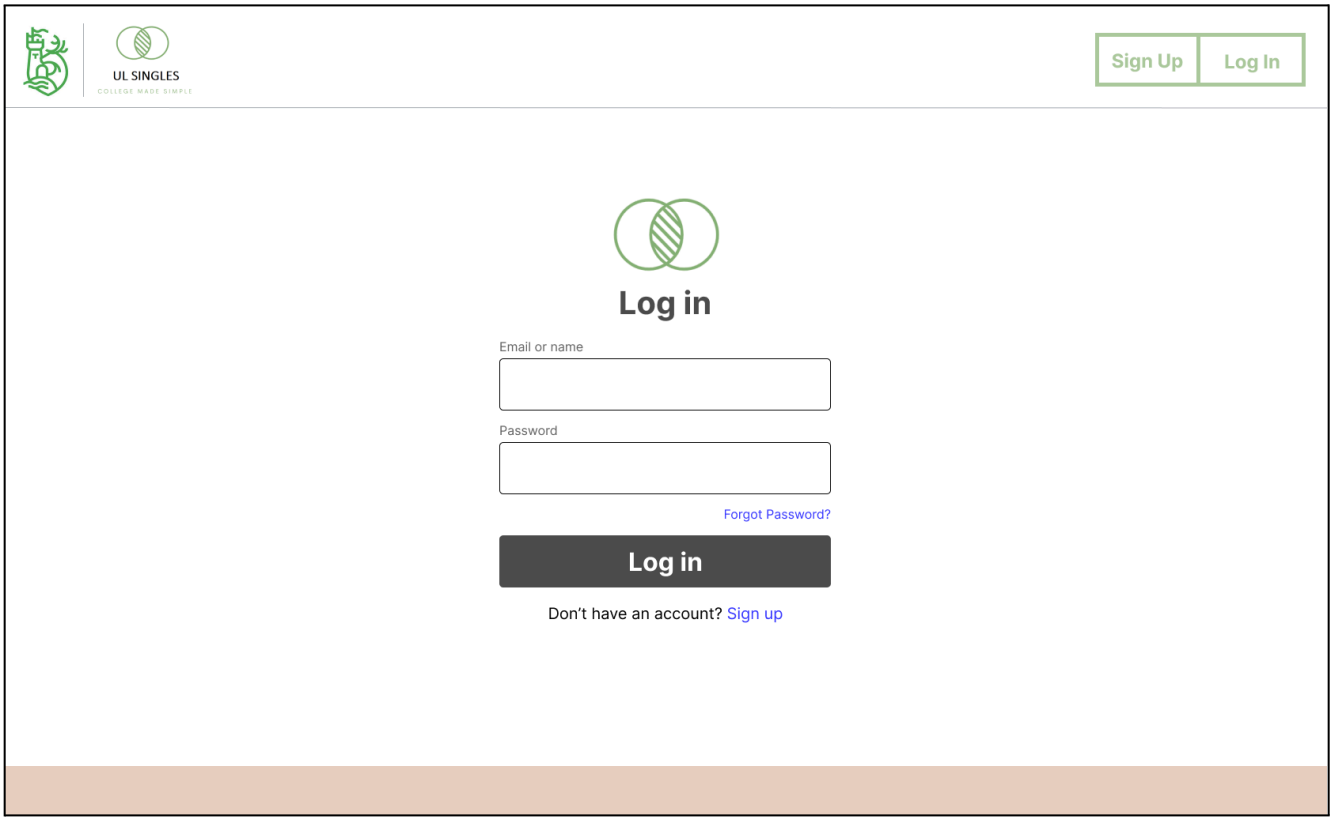

Figure 1 Login Page. The user can login if they have an existing account.

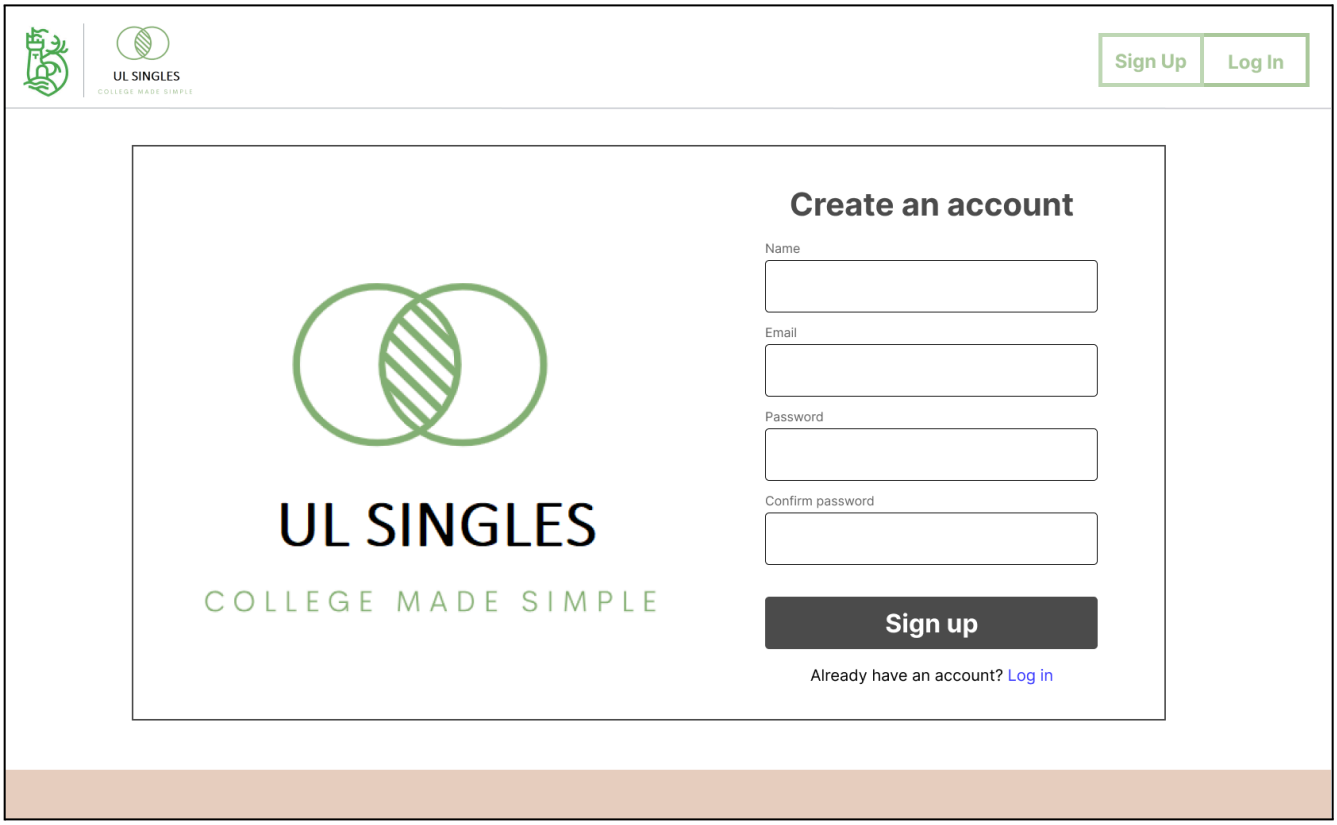

Figure 2 Sign Up Page. The user can sign up if they do not already have an account.

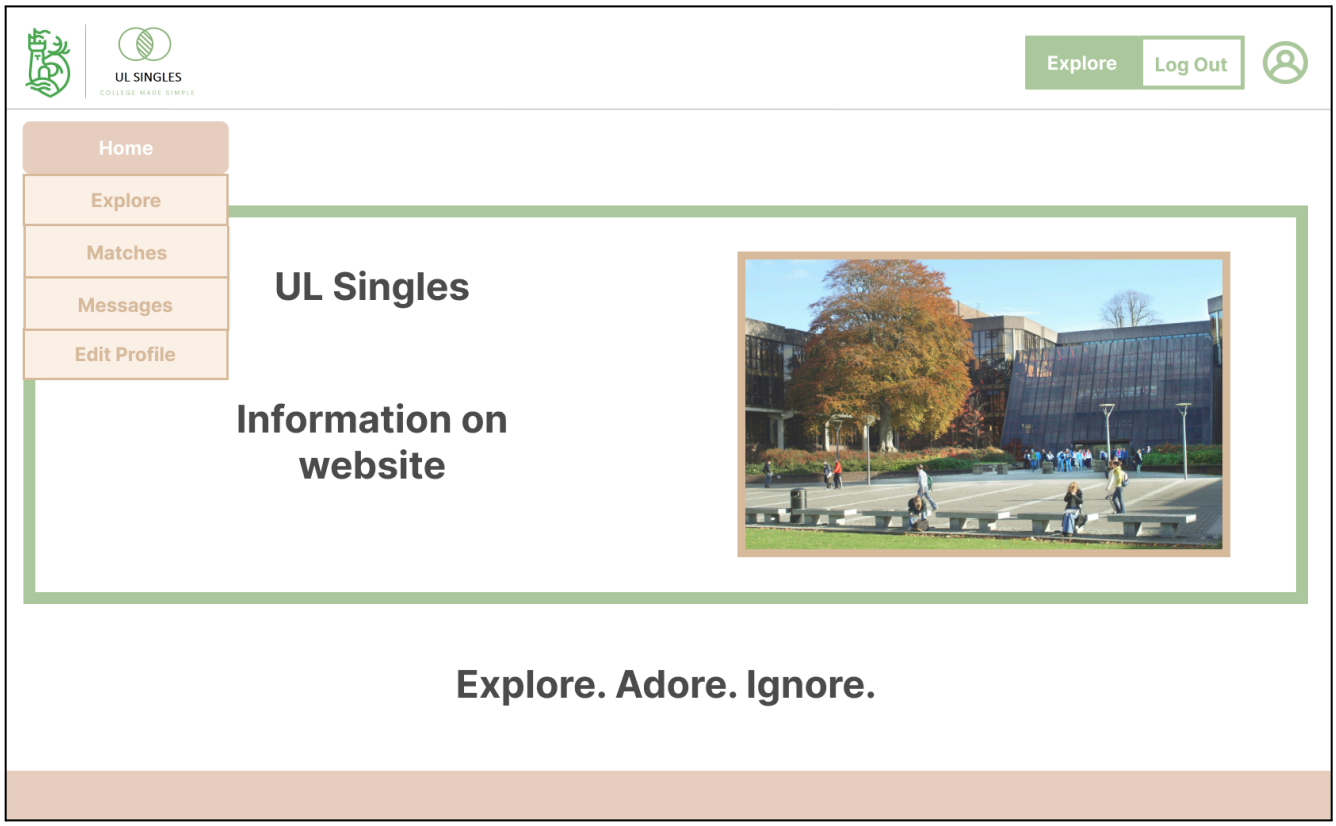

Figure 3 Home Page. Information about the site will be displayed here along with various options to different pages.

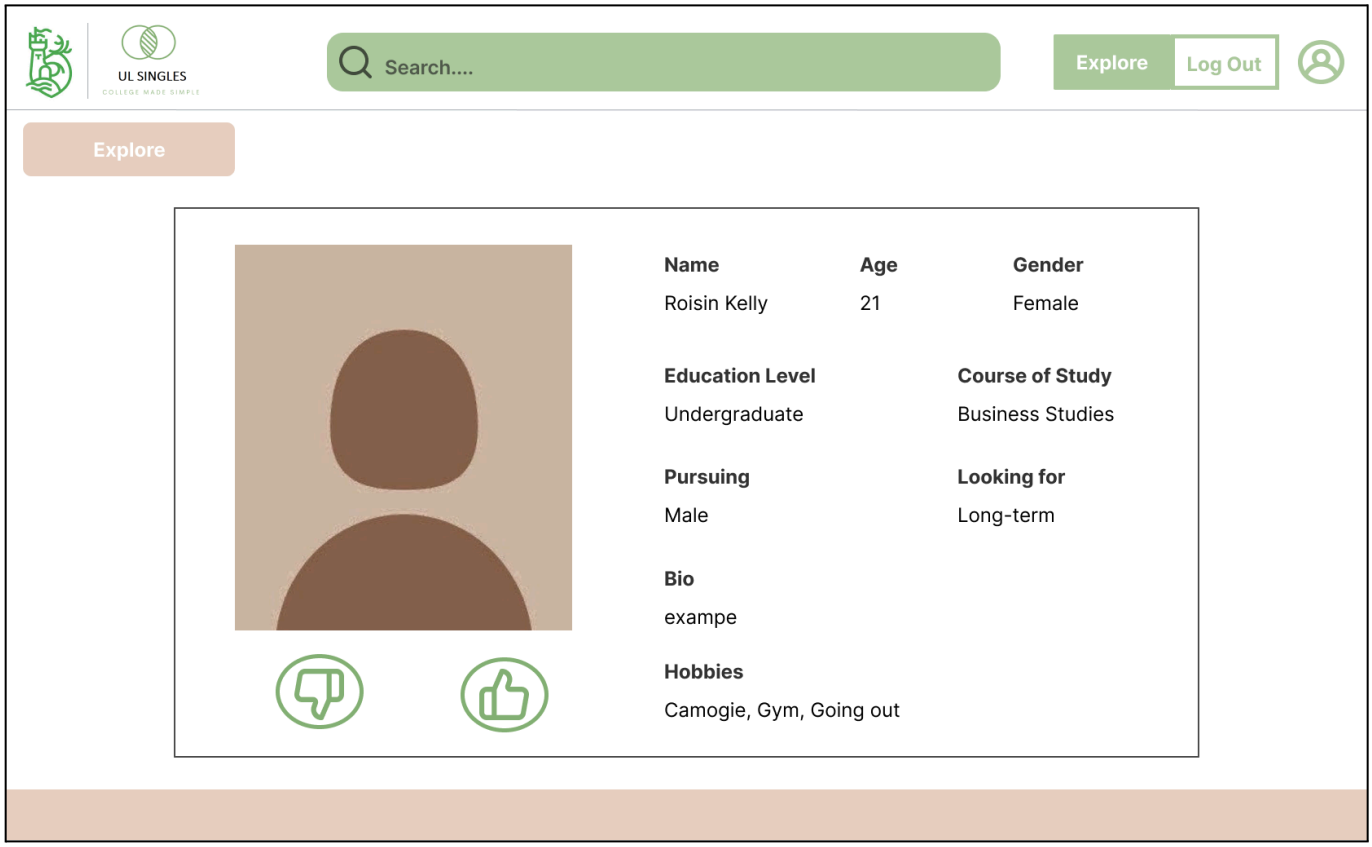

Figure 4 Explore Page. Once logged in, the user can navigate to the Explore page where they will be shown other users and information about them. The user can then "Adore", or "Ignore" them.

Figure 5 Matches Page. Here, the user can view all the other users that they have matched with.

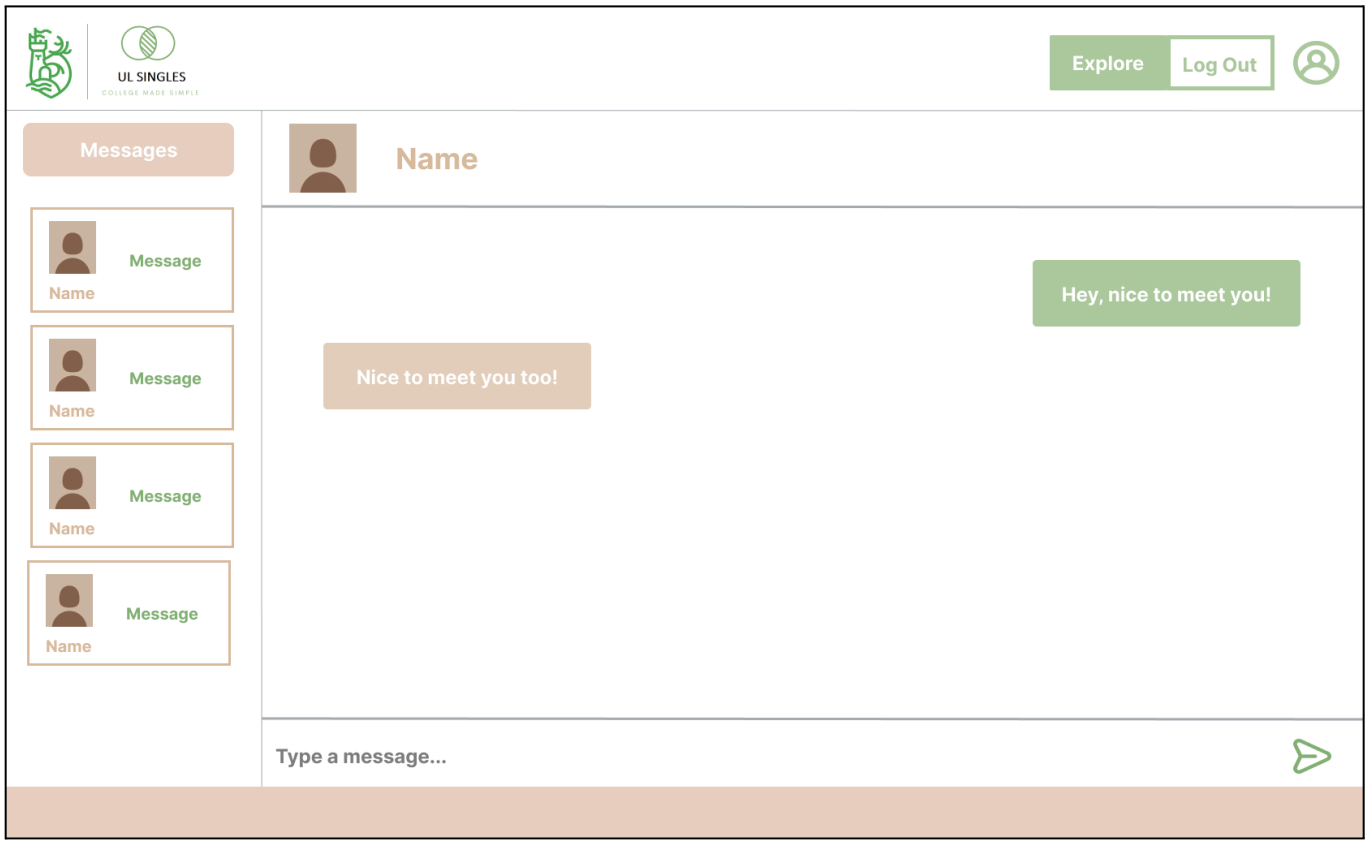

Figure 6 Messaging Page. Here, users can message other users they have matched with.

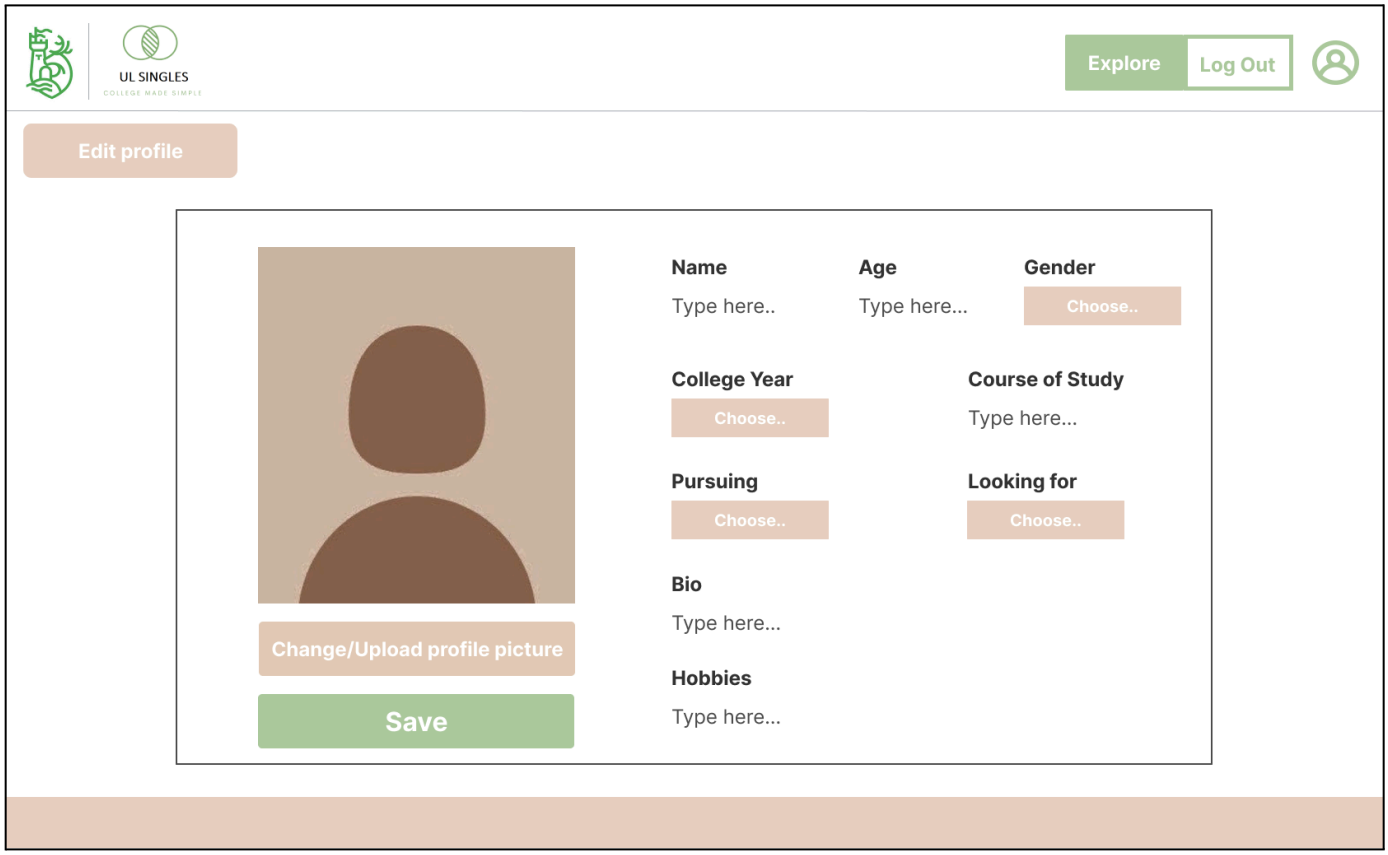

Figure 7 Profile Page. The user will be able to update profile information.

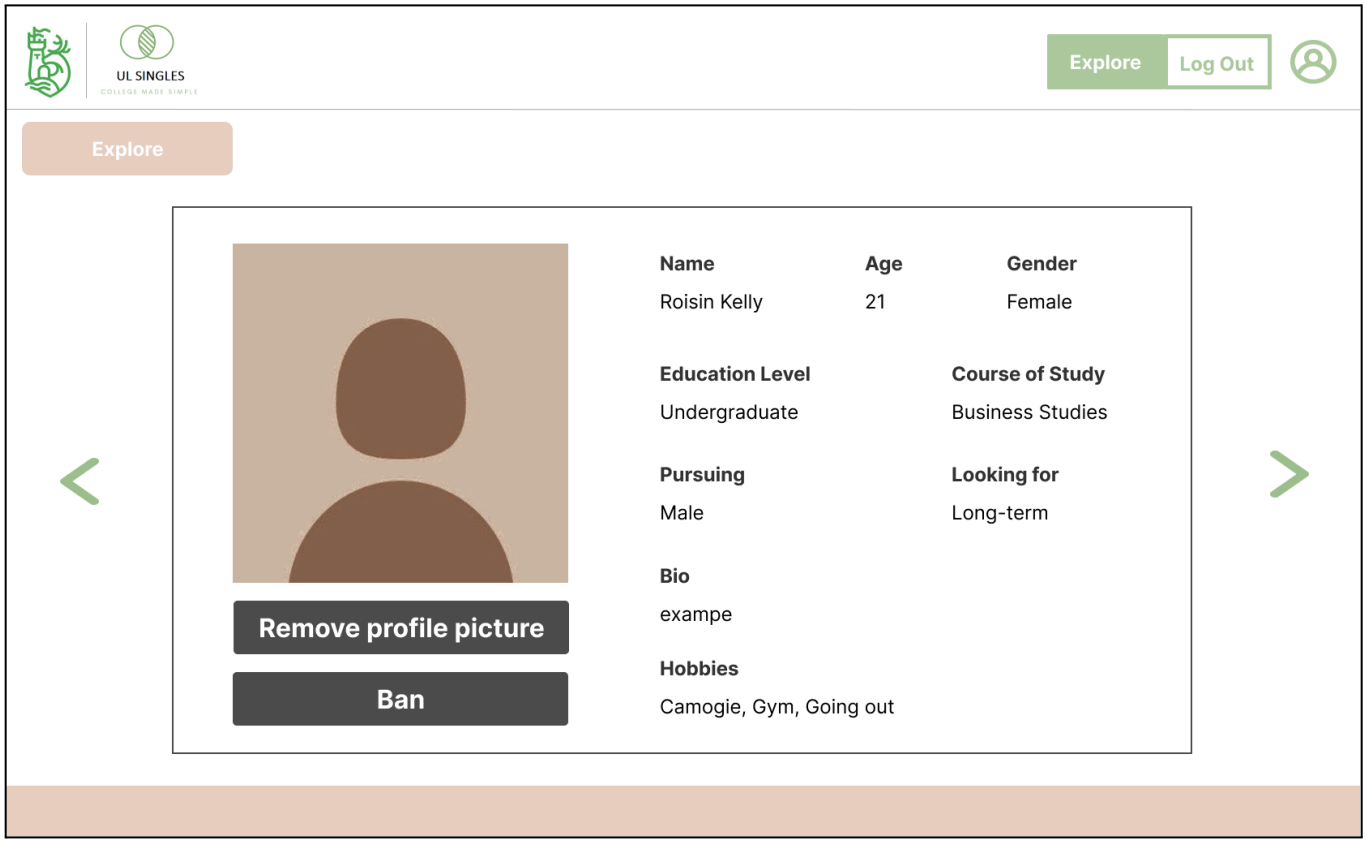

Figure 8 Admin Explore Page. This mock-up was later adapted as we decided to create a separate admin side of the website.

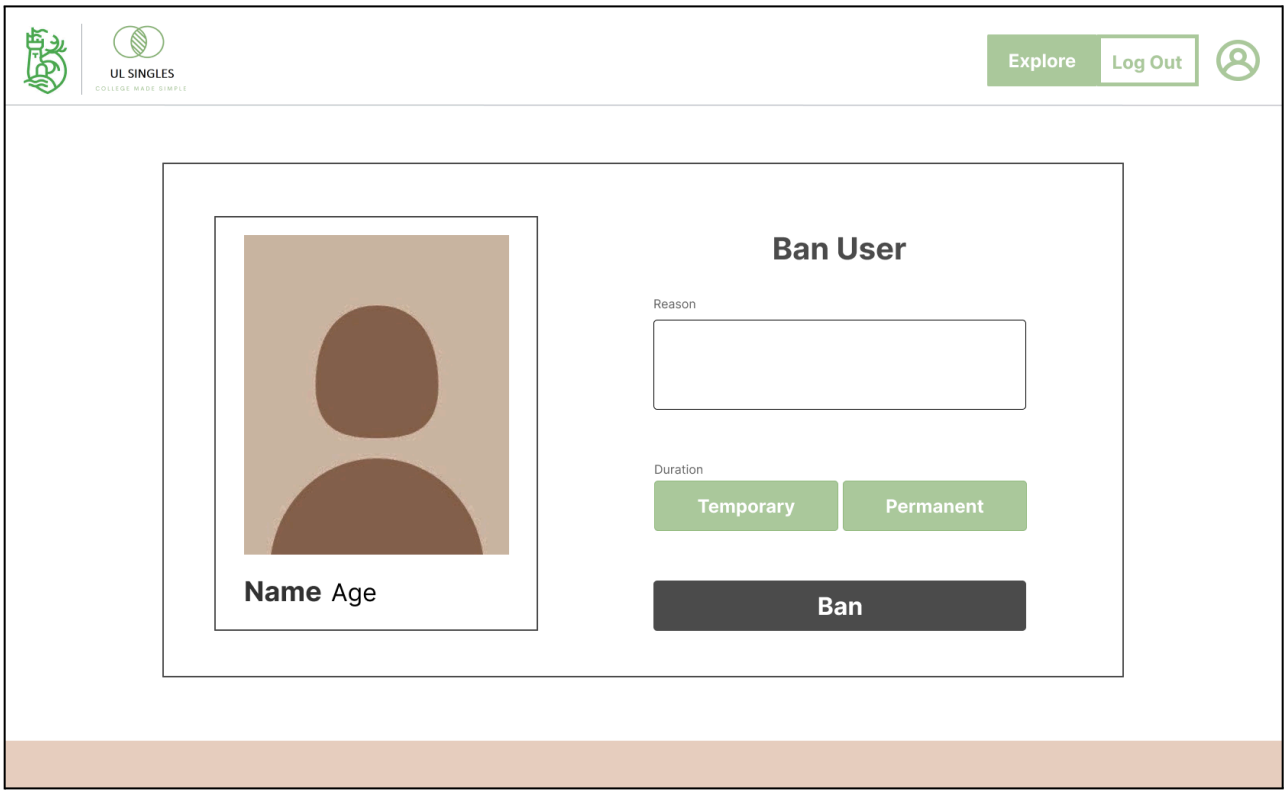

Figure 9 Admin's Ban Page. If an Admin chooses to ban a user, they will be directed to this page. They will provide a reason and will be able to either permanently or temporarily ban the user. Such functionality is not available to normal users.

Some Mobile Mockups of Website (Responsive)

Figure 10 Home Page

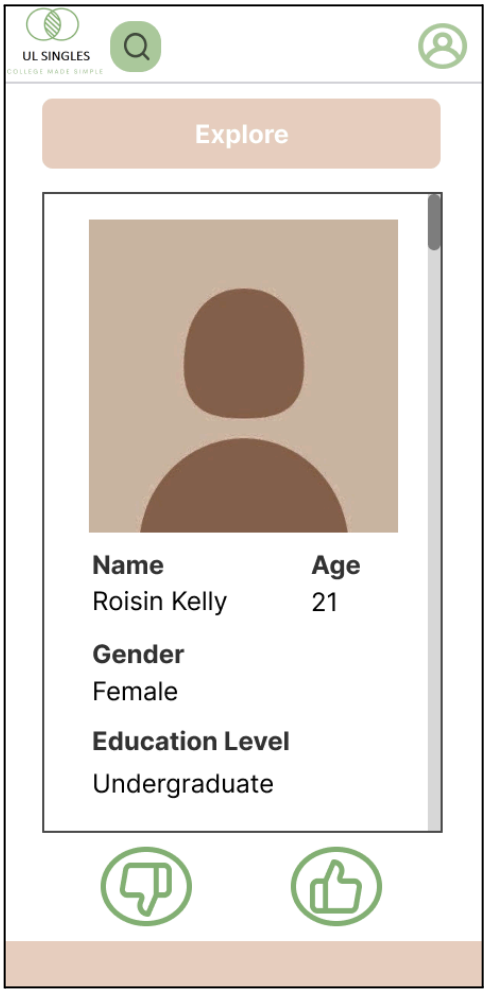

Figure 11 Explore Page

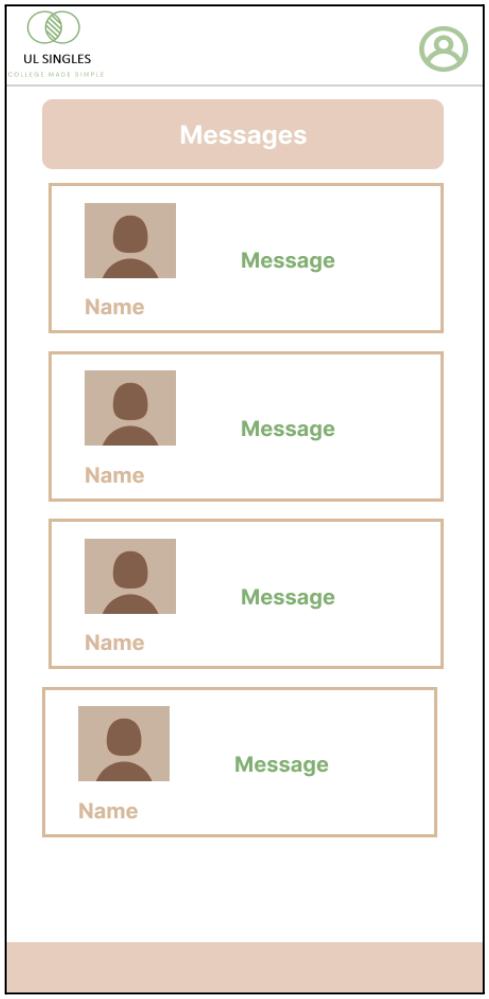

Figure 12 Messaging Page 1

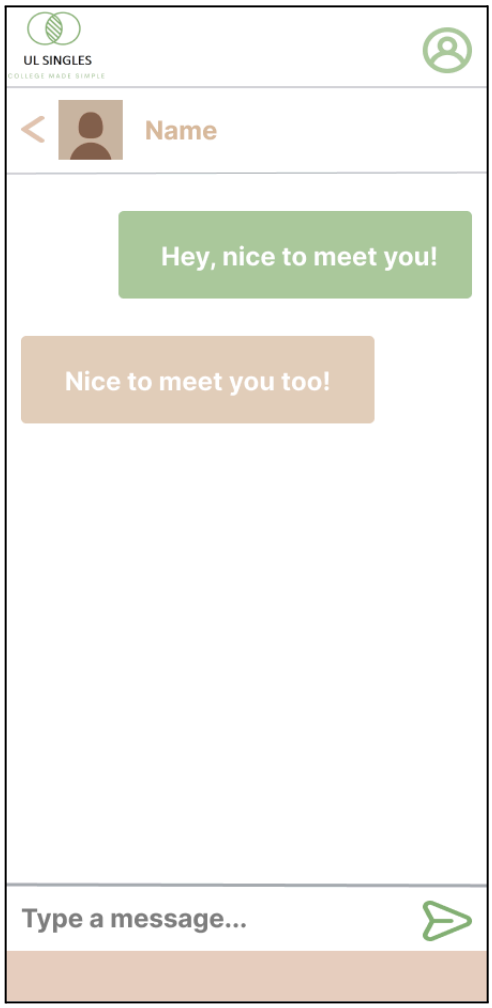

Figure 13 Messaging Page 2

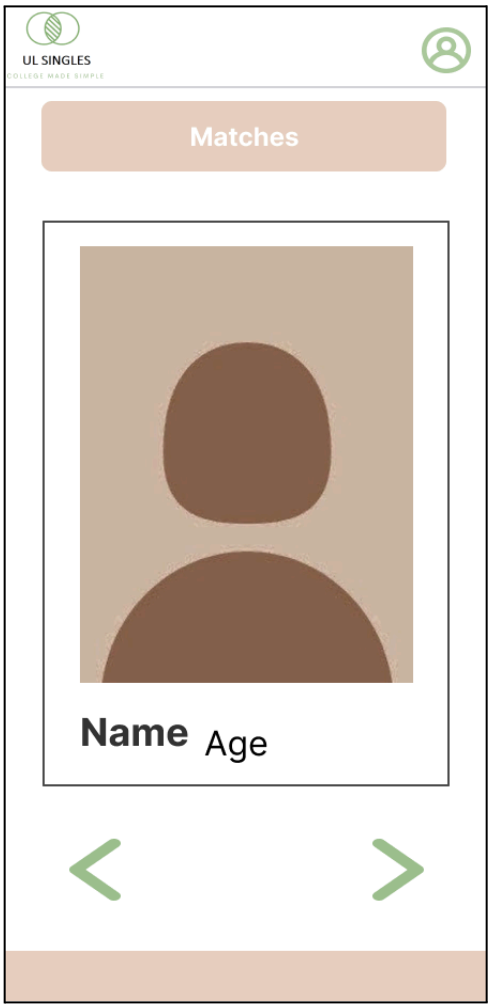

Figure 14 Matches Page

Database Tables

Table 1 Account Table.

Field	Type	Key Type
user_id	int(11)	Primary
email	varchar(255) UNIQUE	
password_hash	varchar(255)	
first_name	varchar(26)	
last_name	varchar(26)	
user_role	enum(admin,standard)	
banned	boolean(1)	
number_of_reports	int(11)	

Table 2 Profile Table.

Field	Type	Key Type
user_id	int(11)	Primary
name	varchar(26)	
age	tinyint unsigned	
gender	enum(Male, Female, Other)	
bio	text	
profile_pic	varchar(255)	
pursuing	enum(Male, Female, Other)	
verified	boolean(1)	
college_year	enum('Undergrad', 'Masters', 'PhD')	

course	varchar(50)	
hobbies	varchar(50)	
looking_for	enum('short-term', 'long-term', 'unsure')	

Table 3 Banned Table.

Field	Type	Key Type
user_id	int(11)	Primary
banned_by	int(11)	Foreign
date	timestamp	
reason	text	
dateOfUnban	date	

Table 4 Adore Table.

Field	Type	Key Type
adore_id	int(11) AUTO_INCREMENT	Primary
user_id	int(11)	Foreign
date	timestamp	
adored_user_id	int(11)	Foreign

Table 5 Ignore Table.

Field	Type	Key Type
ignore_id	int(11)	Primary
user_id	int(11)	Foreign
date	timestamp	
ignored_user_id	int(11)	Foreign

Table 6 Matches Table.

Field	Type	Key Type
match_id	int(11) AUTO INCREMENT	Primary
initiator_id	int(11)	Foreign
target_id	int(11)	Foreign
response_date	timestamp	
viewed_by_target	boolean	
viewed_by_initiator	boolean	

Table 7 Message Table.

Field	Type	Key Type
message_id	int(11)	Primary
match_id	int(11)	Foreign
receiver_id	int(11)	Foreign
sender_id	int(11)	Foreign
message_content	text	
date	timestamp	
read_status	enum(‘read’, ‘delivered’)	

How we responded to user testing.

We received very detailed and engaging software test reports from Group 3. They really helped point out some key flaws within the webpage and gave many inspiring ideas.
Some of the feedback we received that we took on was:

- Have the index file first not redirect to the login page and information page.

- Making registration cleaner so showing that you need to use @studentmail.ul.ie and the exact password constraints etc. Basically more user friendly

- Duplicate primary key: we make the primary key based on the number of the ul email. Group 3 highlighted that if tried to register with an existing email, it would error with a FATAL error duplicate primary key.

- Registration form being cleared after failing to register. Was highlighted by group 3 as poor user performance

- Make a regex check on first name and last name so only characters are accepted

- Pointed out that the Looking_for option in our search filter was breaking the filter, resulting in 0 users showing up

- Adding in functionality for when you update a profile picture for it to be automatically loaded before you can save

- A check for gender so the minimum age must be 18 years of age

- Limit the bio to certain number characters

- Being able to search for a user with an impossible age i.e min 50 max 40 years old. It results in 0 but shouldn't let a user search this

- Include hobbies as a search check as they highlighted it is included within the project spec.

- After you search for a user, no way of getting back to search or other pages without clicking back arrow on browser

- Fix ban not working from admin page

- Implement user_id is admin check as can access admin without logging in as an admin

- Adding folders to our code to better organise it.

- Bring a bit more colour to the site, adding in some more design etc

Recommendations we chose not to take on:

- There was a suggestion to move our profile setup into registration. We believe this would not be a good design choice and feel that keeping registration just to set up our account (table in db) and then our "profile setup" is a good way of engaging the users and really shows off our frontend design choices.

- could reconsider whether a name search feature is a good idea since it may be used maliciously: We are all college students. You have to be a college student to sign up and the website we feel is connected with the university. We included a searching by name option as maybe you met the potential love of your life one night out but only got her first name. You can use our platform to find this person and hopefully find love.

- Including our dropdown in our navbar: We felt this wasn't necessary and believe our dropdown is in a perfect location and makes it easier to access on all phone types. Say for example newer iphones have the camera coming into the screen so if we were to put our dropdown in the navbar, It may cover up the selections.
- Include a option in looking for unsure as its an option you can select when registering: We believed this was not needed, as if you were unsure if you are looking for short-term or long-term, then it would make sense to search for any as can see all types as you are unsure of what you want
- When I go to my profile and I try to change my own gender it isn't giving me the dropdown to change it: We did this on purpose. Users aren't allowed to change genders on site as that is why we have the other field. It might give people a false perception if someone was allowed to change their gender. Also for age we didn't want users to be allowed to change this too.

Key functionalities

Allow users to register themselves in a profile. Contain traits such as interests (hobbies) seeking (looking for) etc

We accomplished this with two main pages; registration and edit profile. When a user opens the website for the first time they will have to register for an account. The user is prompted to do this by the initial welcome (index) page.

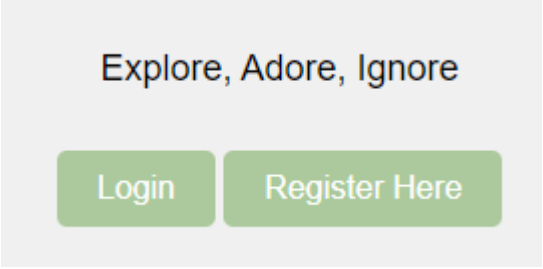

Figure 15 index page

When registering they must conform to clearly laid out restrictions. For example, the email used must conform to the ul standard email "@studentmail.ul.ie" and must not already be populated in our database. They are a variety of other checks across the form to maintain conformity.

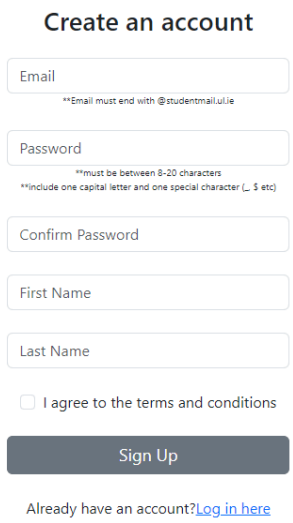

Figure 16 registration

In addition we have used password hashing for additional security. This occurs during registration when the password is set up.

Once the registration of the account is successful the user is brought to create their profile. During the creation of the account the user must fill each section of the profile. This is necessary to try to prevent anonymous or ghost accounts. Here is an example account after being set up correctly.

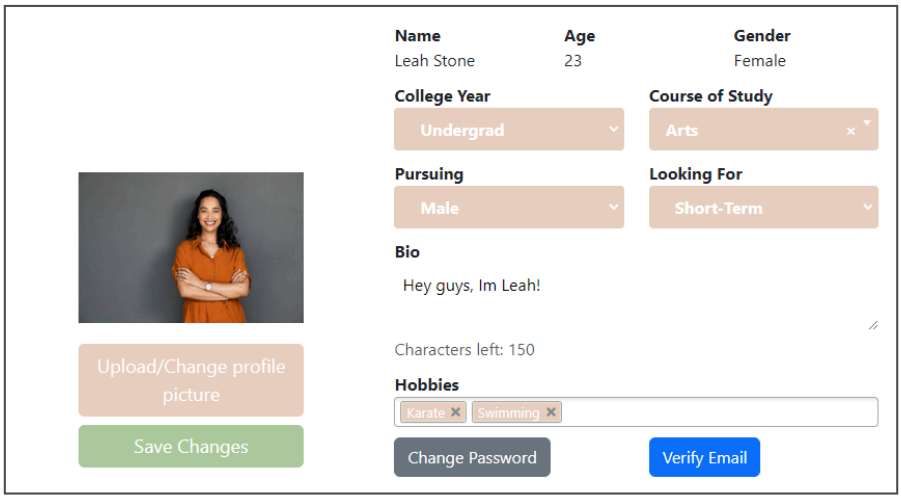

Figure 17 edit profile

We have a variety of fields here with their own requirements. For example, hobbies uses a list of different available hobbies. The user must select at least one with a maximum of four. Note, both the change password and verify

email buttons will only appear if the user has successfully saved their initial profile setup.

Allow users to connect by sending notification. So when users match notified

We accomplished notifying the user on a new match by adding a notifications system acting on new matches. This operates similarly to tinder in where when user A adores (like) user B it is added to the adore table in the database. If the user B has already adored user A then the system picks up on this and creates a match for both users. This new match then triggers a notification to appear. We show notifications in the top right corner of all pages beside the profile icon. If a user clicks on the profile icon they will see this notification.

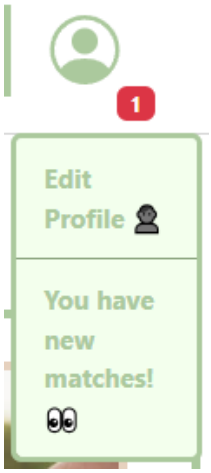

Figure 18 notification

If the user clicks on this notification they will be brought to that match on the matches page where they can continue to message that user.

Allow users to browse for other uses eg show all male users
Allow users to search eg all women over 31 with x hobby

Search is completed through the search page. This page consists of a form.

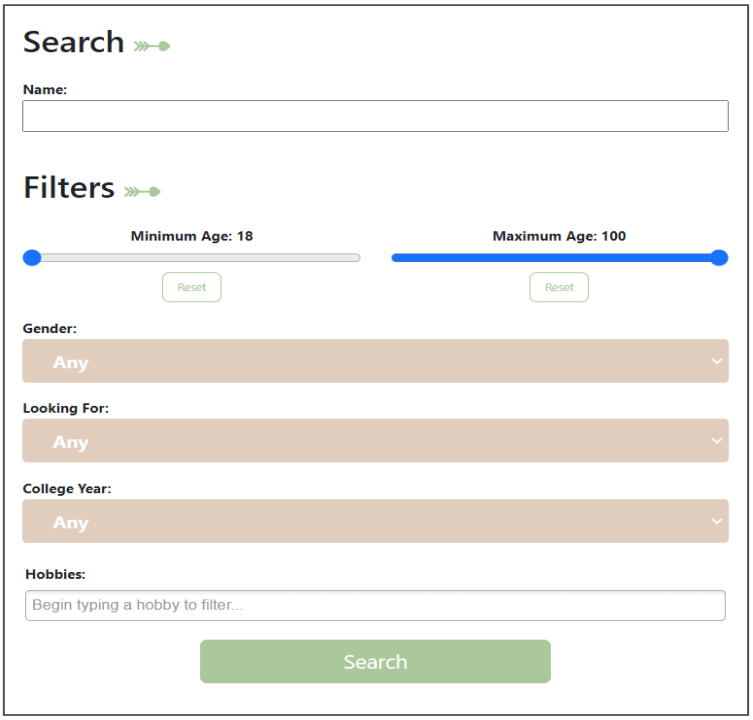

Figure 19 search

The user can search for a variety of filters. They can search for a specific user by name. The autocomplete functionality should help them find the user they are looking for. If the user clicks on the profile they are looking for it will bring up that specific account's profile card. What is a profile card? These cards are what we used to efficiently show user information across the website. Here is an example:

Saoirse Egan

Bio: Hi!
Gender: Female
Age: 24
College Year: Undergrad
Pursuing: Male
Course: Linguistics
Hobbies: Traveling, Running, Yoga, Surfing
Looking For: Unsure

Figure 20 search

However if the user just wants to browse other users they can use filters. We provide a variety from age, gender, looking for, college year and hobbies. Once a user selects their desired filters we show them all the accounts matching their search. Here is an example of searching: male, masters, short-term.

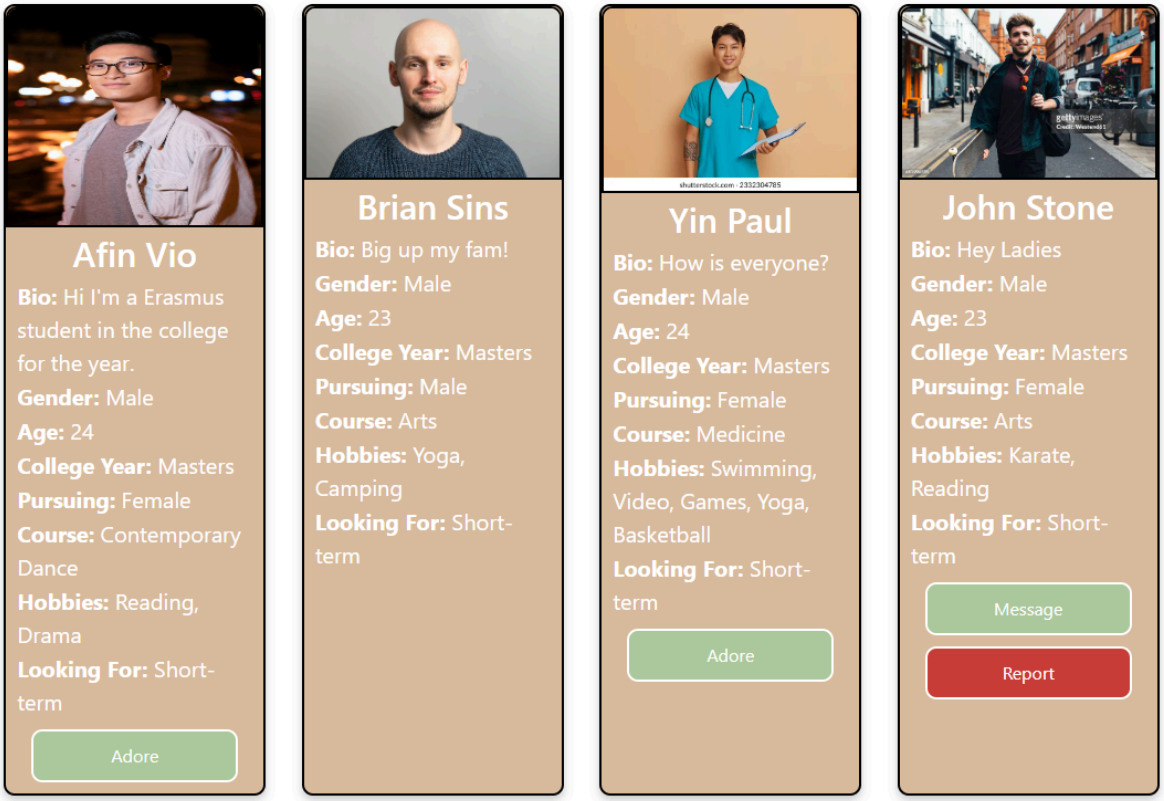

Figure 21 search

As you can see there are different options on each. To understand these we must understand the user logged in is a straight female. There are three different types of cards:

- Current Matches
  "John Stone" in this example are matches already made. Since he is already a match you can message him or report him.

- Possible Matches
  "Adin Vio" in this example the user can adore (like) and wait to see if Afin adores them in return.

- Impossible Matches
  "Brain Sins" in this example is an impossible match. Since the user logged in is a straight female and "Brian Sins" is a homosexual male they do not match each others pursuing which means they can only view each others profiles

Suggest matches for user best of a best match (explore)
For suggesting user's of "best fit" or "most compatible", a user can navigate to our explore page. This page works first by getting the user's gender, and what gender they choose to pursue. We initialise an array of users to explore but before we add user's to this array, we exclude accounts with admin status. We then get all the adores and ignores of the user, and make sure to exclude these users from the list so you can adore someone twice etc. We then only include accounts who are pursuing you too i.e a male pursuing females will only be suggested females pursuing males.

We then call a CalcMatchWeight function which calculates the match weight for all the users that would be available in explore. We assigned certain weight percentage increases to the following categories

- Age = 10%
- Hobbies = 40%
- College Year = 15%
- Course = 15%
- Looking for = 20%

Theres are then multiplied by the respective score of each category. So age score multiplied by 1.1, hobbies by 1.4 etc.

Age:
If the age difference is <=3 years, score is set to 100, if it's between 4-6 inclusive score is 50, otherwise it's set to 0.

Hobbies:
If they have a matching hobby, the score is assigned to 50. Any subsequent match increases the score by 50.

College Year:
If same year, i.e both undergrads, score is assigned to 100, otherwise it's assigned to 0.

Course:
If they have the same course, score is assigned to 100, otherwise it's 0.

Looking for:
If the have the same looking for status, i.e short-term, score is assigned to 100, otherwise set to 0

Each score variable is then multiplied by the percentage weights increase to give a match score. Every user that can potentially match with the user logged in is assigned a score and are added to the usersToExplore array, which is sorted from highest to lowest. Here are to images showing explore, so after you click the adore (thumbs up) or ignore (thumbs down), it automatically moves onto the next user

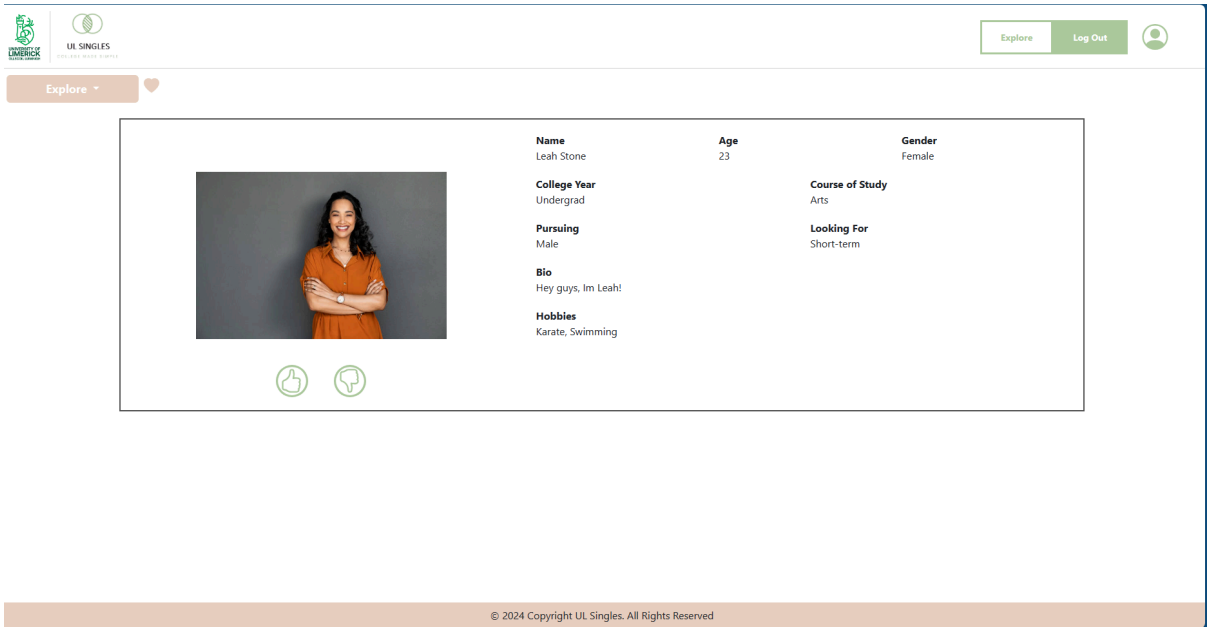

Figure 22 explore

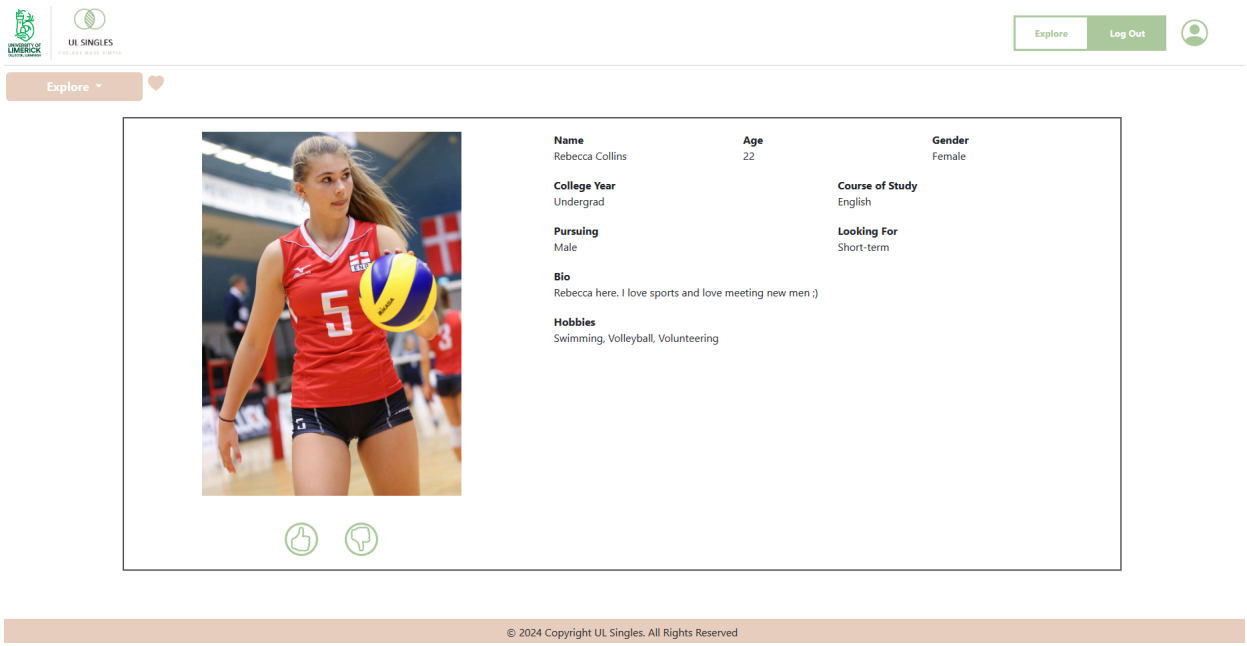

Figure 23 explore

Site admin who can delete, temp ban, remove abusive or offensive adds and edit all profiles

Site Admins have multiple controls on our website. We had initially planned on integrating admin functionality with our webpage but with the features we wanted we deemed an admin side of the website to make more sense. When an admin logs in the can:

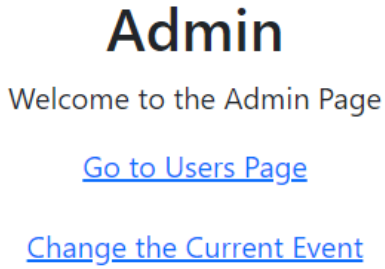

Figure 24 admin

The users page shows all the users on the website ordered by their user id:

User	Name	Email	# Reports	Banned
1230	Conor Ryan	1230@studentmail.ul.ie	1	0
2737	Test Account	2737@studentmail.ul.ie	0	0
11111	Allan de Lima	11111@studentmail.ul.ie	0	0
32132	Rachel Maguire	32132@studentmail.ul.ie	0	0
32443	Aine O' Meara	32443@studentmail.ul.ie	0	0
34342	Oliwia Smialek	34342@studentmail.ul.ie	0	0
432144	Rebecca Collins	432144@studentmail.ul.ie	0	0
3244234	Destiny Okodugha	3244234@studentmail.ul.ie	0	0
11111111	Leah Stone	11111111@studentmail.ul.ie	0	0
20251971	B N	20251971@studentmail.ul.ie	0	0
21254632	John Stone	21254632@studentmail.ul.ie	0	0
21318204	Admin Olan-H	21318204@studentmail.ul.ie	0	0
21318289	Sydeny Sweden	21318289@studentmail.ul.ie	0	0

Figure 25 admin user list

The admin can then select an account they want to view, bringing them to the admin controls for a specific user.

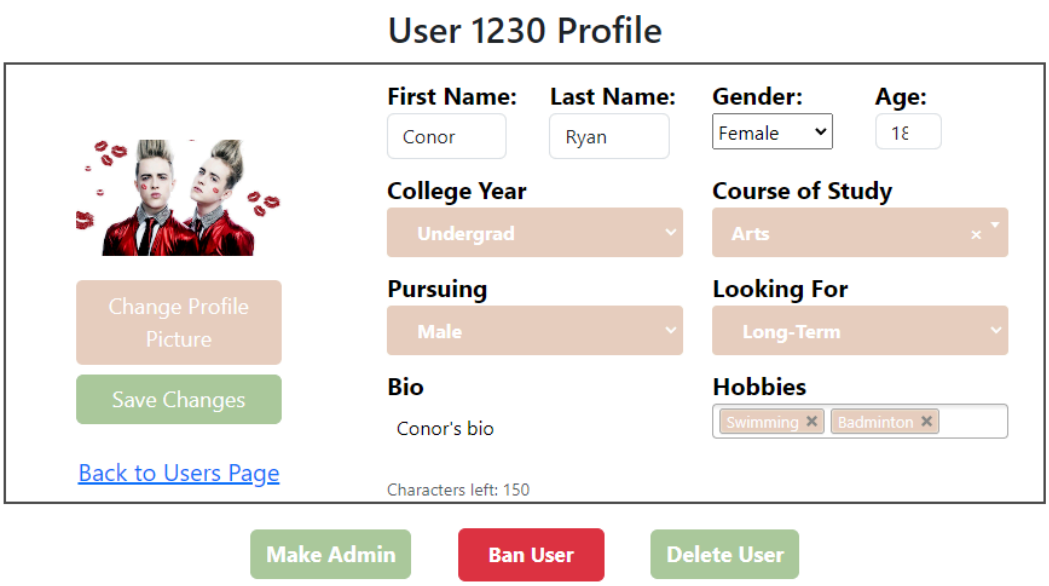

Figure 26 admin user info page

Admins can edit any of the fields in the account including name and gender which a standard user cannot. They can also make an account an admin or

completely delete a user from the database. Most importantly they can ban a user. When “Ban User” is clicked this form appears.

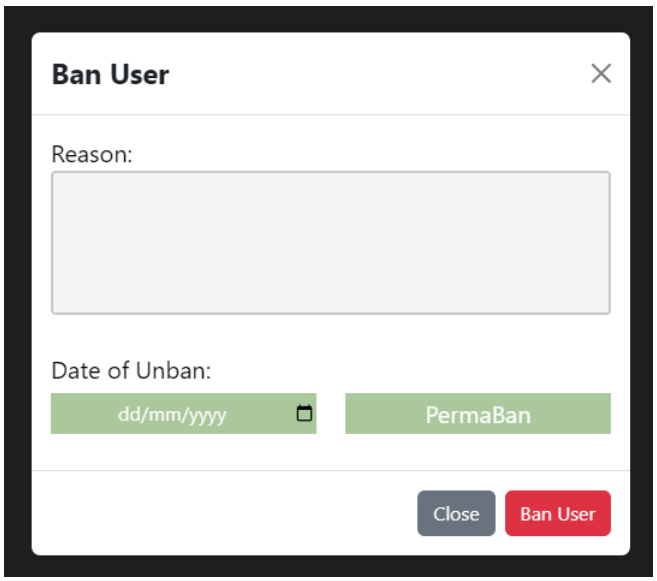

Figure 27 ban

In which an admin can permaban a user or set a date of unban. If a user is banned and tries to access the website they are informed of their ban (reason and date of unban). Once the date has passed they can access the website again.

Extra functionalities

Messages:

We created a messaging system so users could message one another.

Figure 28 messages

This page has a list of a user's matches on the left of the page. If the user clicks on any of these they messages between them are shown on screen. They can send and receive messages in real time. They can also unsend messages they have sent. If a match messages the user they will be notified similar to matches. They will also get shown in the messages page with a notification icon beside the name of the sender.

Events:

One of the selling points of our website was events and ideas personlised to UL college students. We do this through the events on the home page.

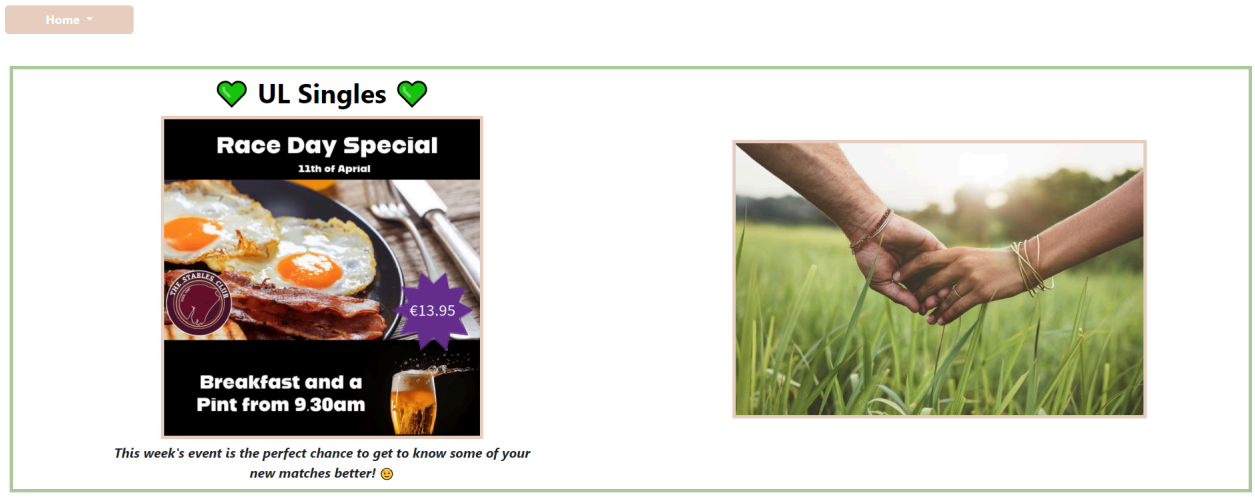

Figure 29 events

These are events that the admin can change from the admin controls.

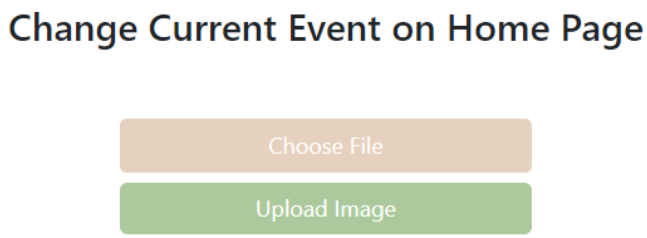

Figure 30 events

Edit Profile Additional Features:

Figure 31 additional

We added two extra buttons. One to change your account's password which brings up this menu.

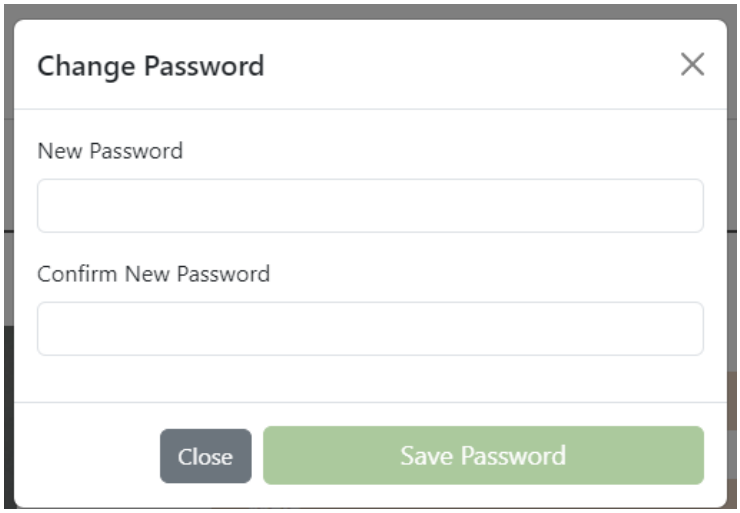

Figure 32 additional

The verify email verifies your email in the database and notifies the user. Unfortunately due to using infinityfree we could not actually send an email verification to the email.

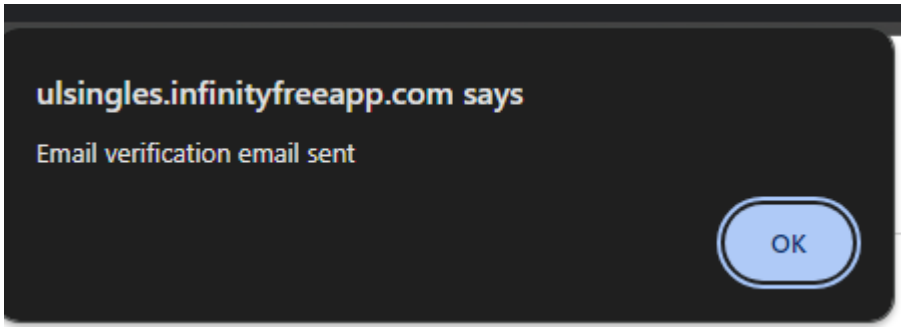

Figure 33 additional

Errors:

So we also included some custom errors. So. if a user navigates to our site and tries to access a page without being logged in, they will not get access. So say for example, a user tried to access our edit profile page without being logged in (no session in place) by typing in:
https://ulsingles.infinityfreeapp.com/src/pages/editprofile/editProfile.php
They will get displayed with this screen

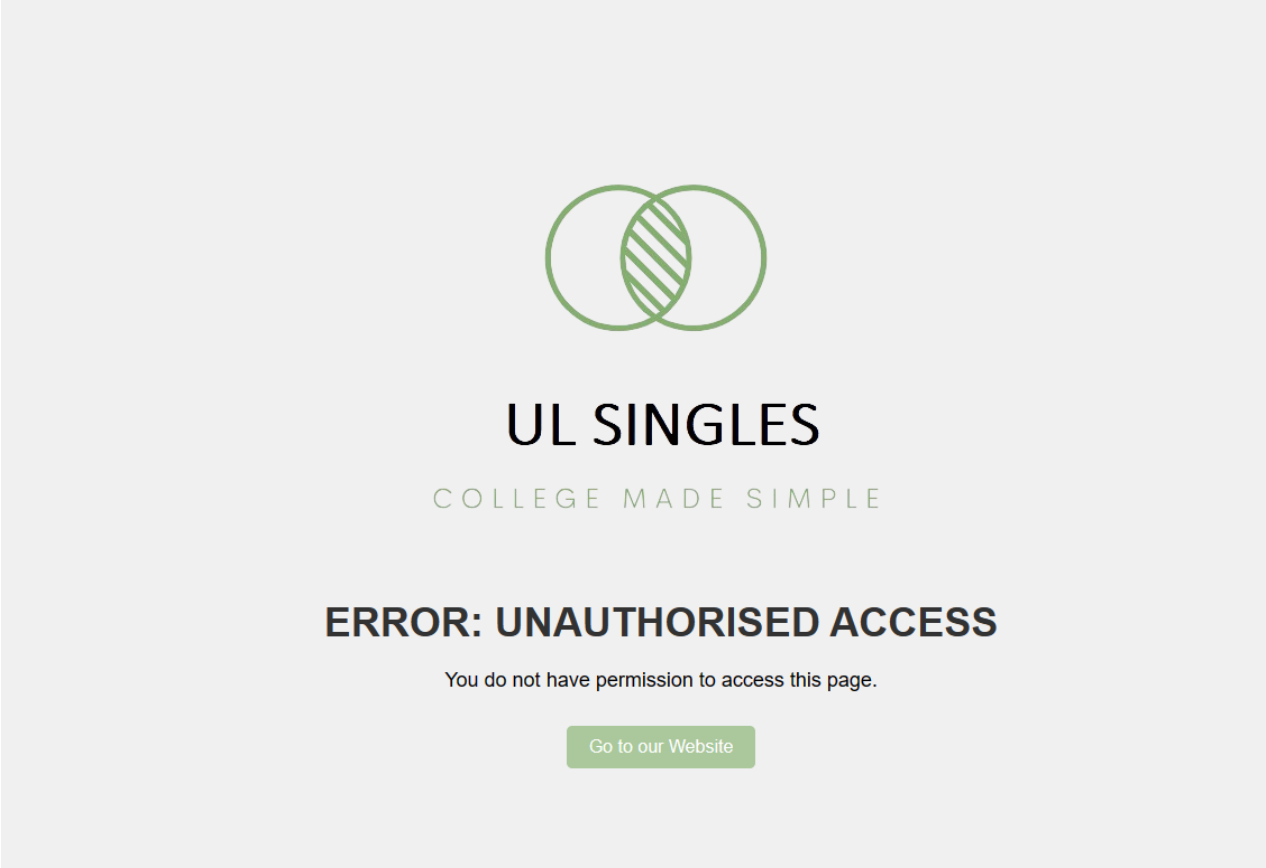

Figure 34 unauthorised access

It was particularly useful for admin pages to make sure nobody could get access to sensitive data.

Also, if a user tried to navigate to a page that didn't exist(404 Not found), they would get displayed with this message

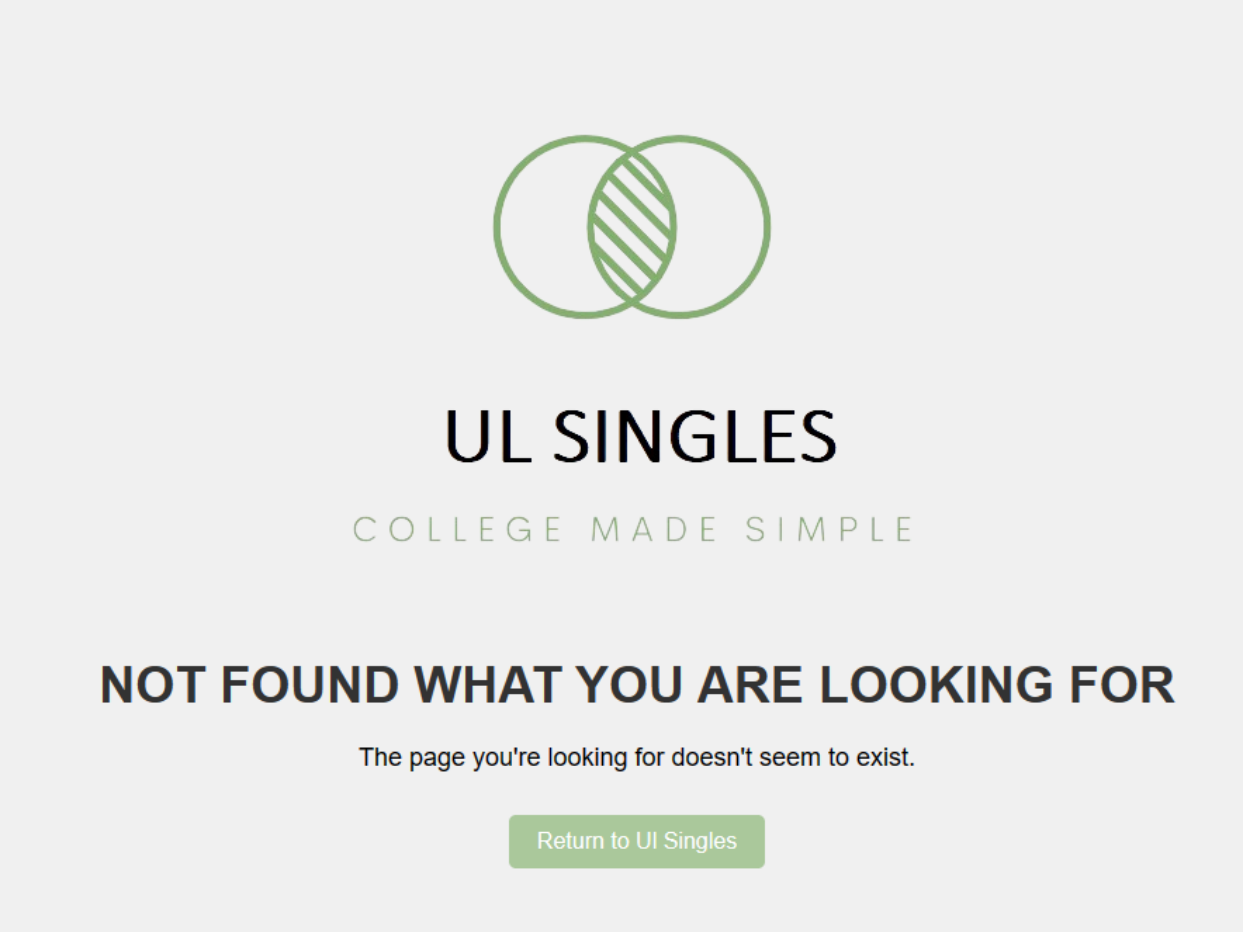

Figure 35 page doesn't exist

Site Access?

URL of our website: https://ulsingles.infinityfreeapp.com

Along with our website, our database tables are stored on the infinity free servers. How to access our database online:

1. Open infinity free: https://dash.infinityfree.com/accounts
2. Login using credentials:
    a. Email: ulsingles2024@gmail.com
    b. Password: Cs41162024
3. Navigate to MySQL Database in the Account if0_36038205
4. Finally, click on phpMyAdmin to access the database

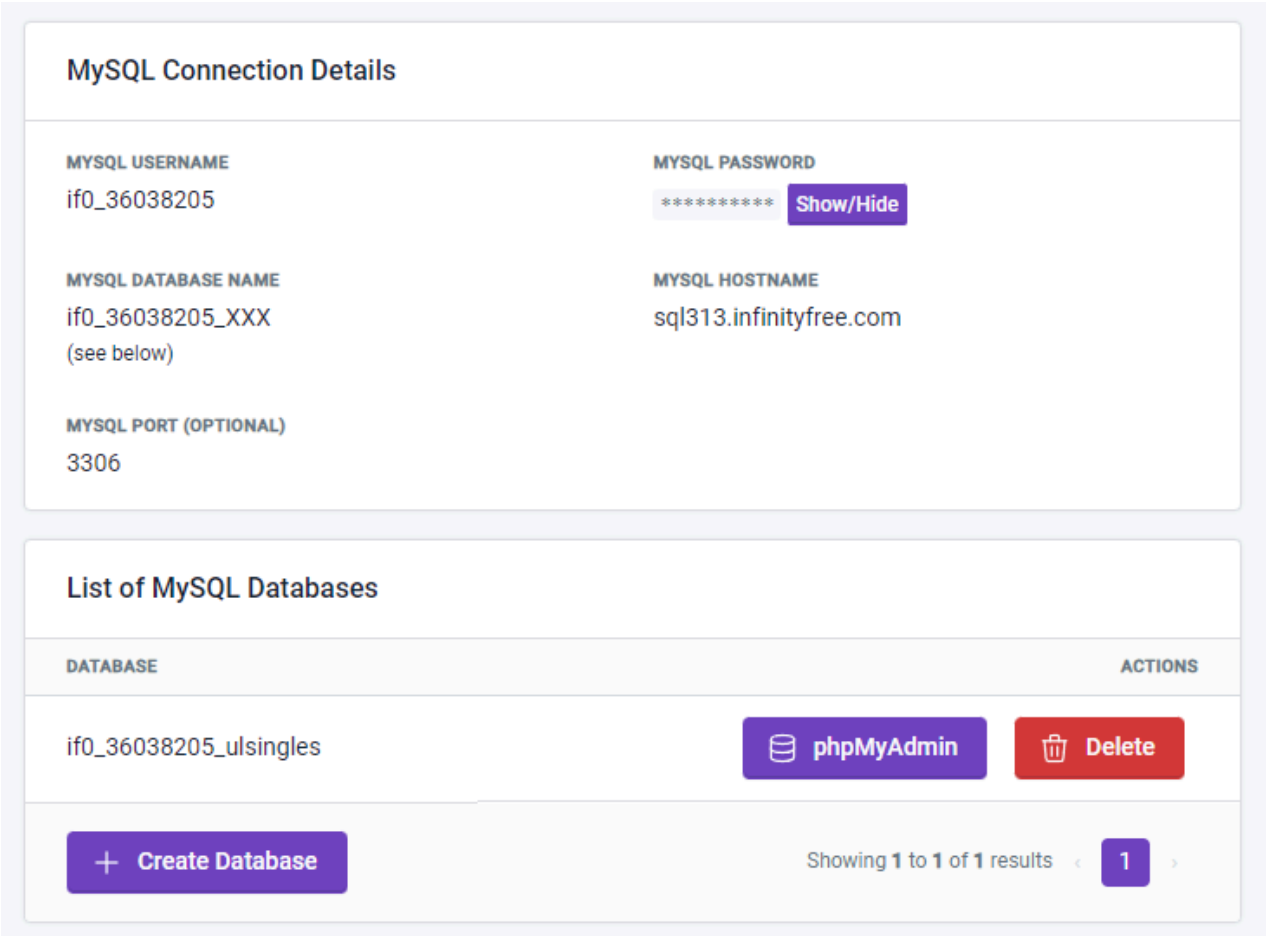

Figure 36 our database on the infinity free server

Trello board link: [CS4116 project | Trello]
Google sheet percentage breakdown: [Group 04 Grade Share - Google Sheets]

Project demo

Overall, we were very happy with how the project demonstration went. We worked hard and believe we got to show that in the demonstration. We had a code freeze a few days prior to the demo to not add any more functionality and just cleanup the frontend and fix any bugs. We believe this paid evident in the demonstration as no “website breaking” bugs appeared. However, we noticed one small bug to do with apostrophes which was a small oversight.

In one of the weekly meetings, it was suggested to include apostrophes and hyphens in our name fields. We did this but didn't test enough and in the demonstration, Conor made an account and he included an apostrophe in his bio.

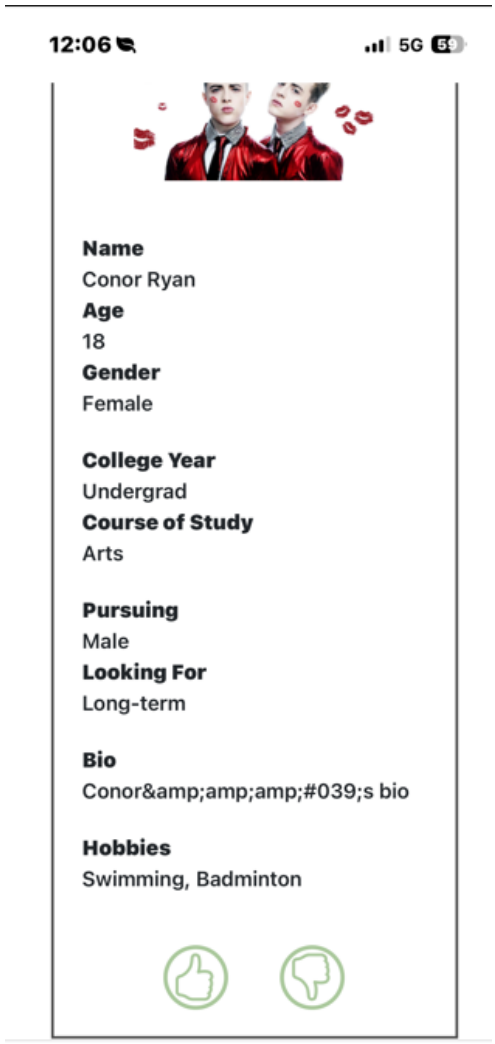

Figure 37 Conor's bio error

It wasn't picking up the apostrophe and when he pressed save changes, it would add more as the html wouldn't recognise it. To fix this, instead of using htmlspecialchars to show the name, we changed it to htmlspecialchars_decode. This was because in the database, an apostrophe would appear as '. This built in php function was used to decode this. We now have this working and here are photos of edit profile, explore, search and messages showing aprostrophes

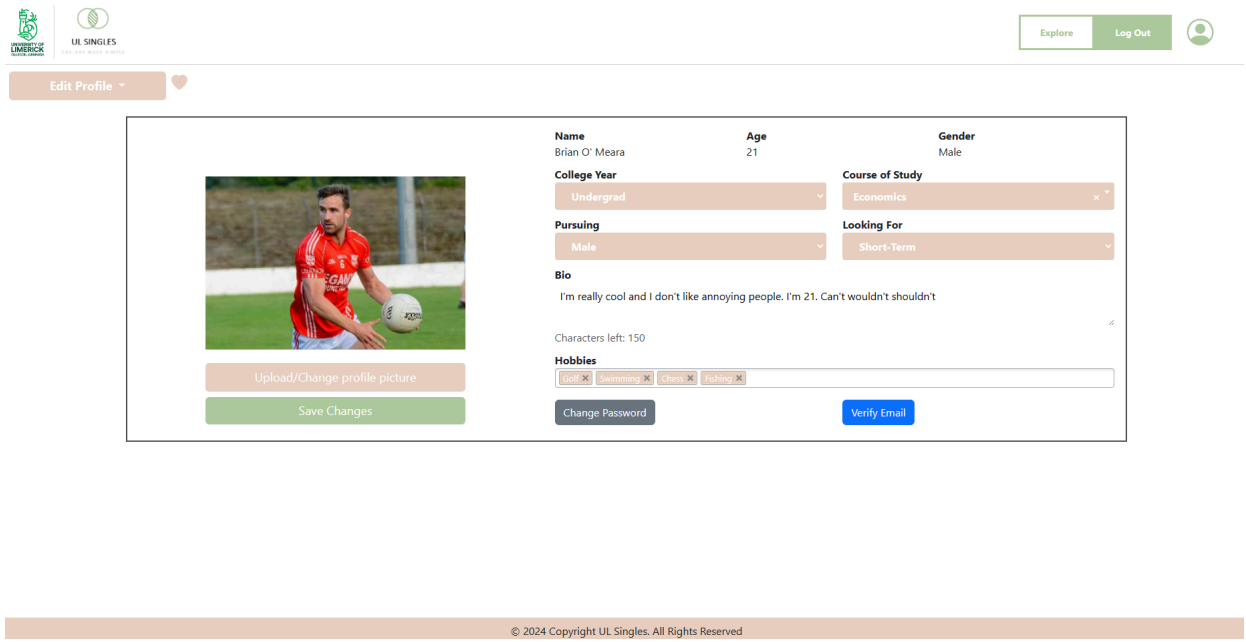

Figure 38 apostrophe fix edit profile

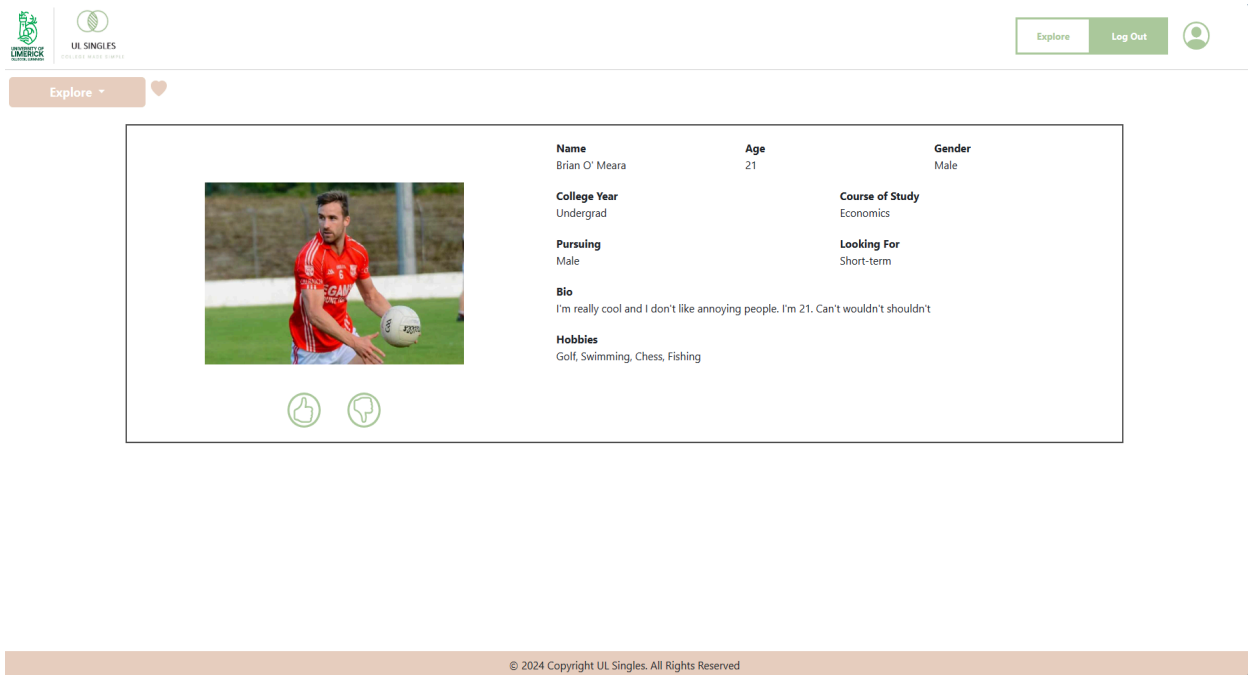

Figure 39 apostrophe fix explore

Figure 40 apostrophe fix edit profile

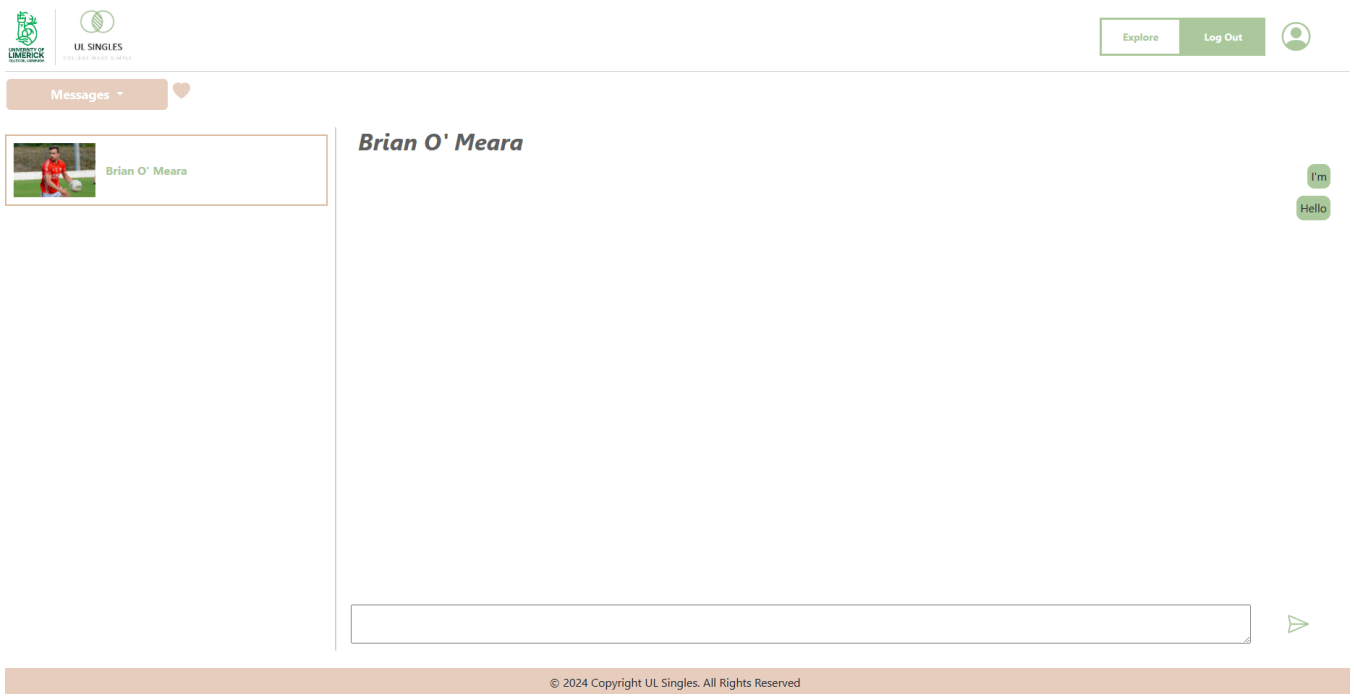

Figure 41 apostrophe fix messages

Video Link

Unlisted YouTube video link:
https://www.youtube.com/watch?v=ViRem_bEMr4

Sources

For our Ul Singles logo, we used Looka which is a free online tool to generate logo's The Best Free Logo Maker - Create a Unique Logo | Looka

UL Logo: https://www.ul.ie/marketing-and-communications/ul-brand

Main Image on Home Page:
https://stock.adobe.com/ie/images/loving-couple-holding-hands-in-a-field/115398659

Event Image on Home Page:
https://www.instagram.com/stables_club/