CS39930 Web-based Major Project

UI and Design Evaluation

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Introduction

The website is being requested by Bernie Tiddeman and the research team he is involved in. The research team is comprised of researchers from Aberystwyth University a d Bangor University. It is also sponsored by the Welsh Government, who have an input in the project.

The website will allow the researchers to upload images and data associated with them, which will then be displayed on the website. The website will allow users to run various queries on the data. Data will also possibly be displayed on a map (dependent on further requirements/implementation).

Data presented will involve various information related to crustaceans such as crabs, their catch locations and others. The website will then allow the data to be collated and presented as graphs and potentially other types of information.

Navigation

There will be 3 access tiers; Tier 1 will be available to people who are not signed in and will only have access to the most basic search and data querying tools. Tier 2 will be available to people who have accounts and are signed into the system, they will have access to all data and querying tools. Tier 3 is only available to a few users who are designated as system administrators.

Below are navigation tree diagrams showing the 3 access tiers discussed previously.
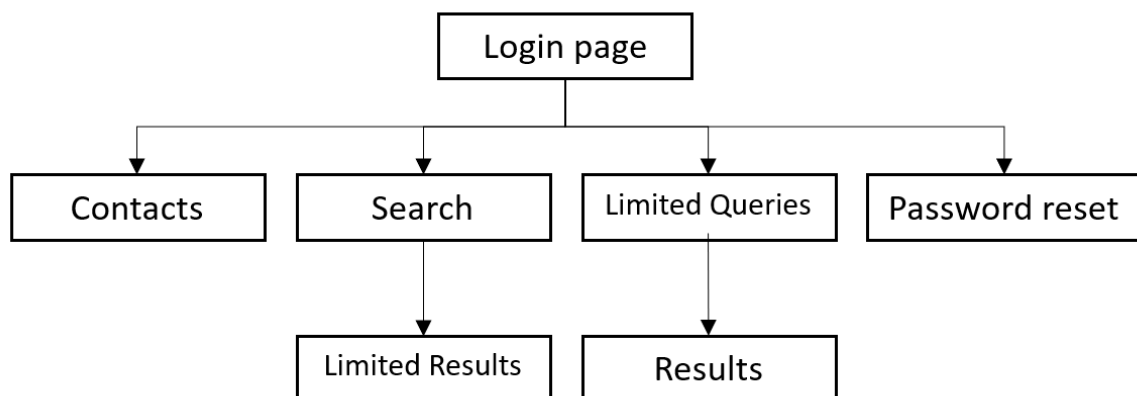

Figure 1. The navigation options available to general public (i.e. users who are not signed in).
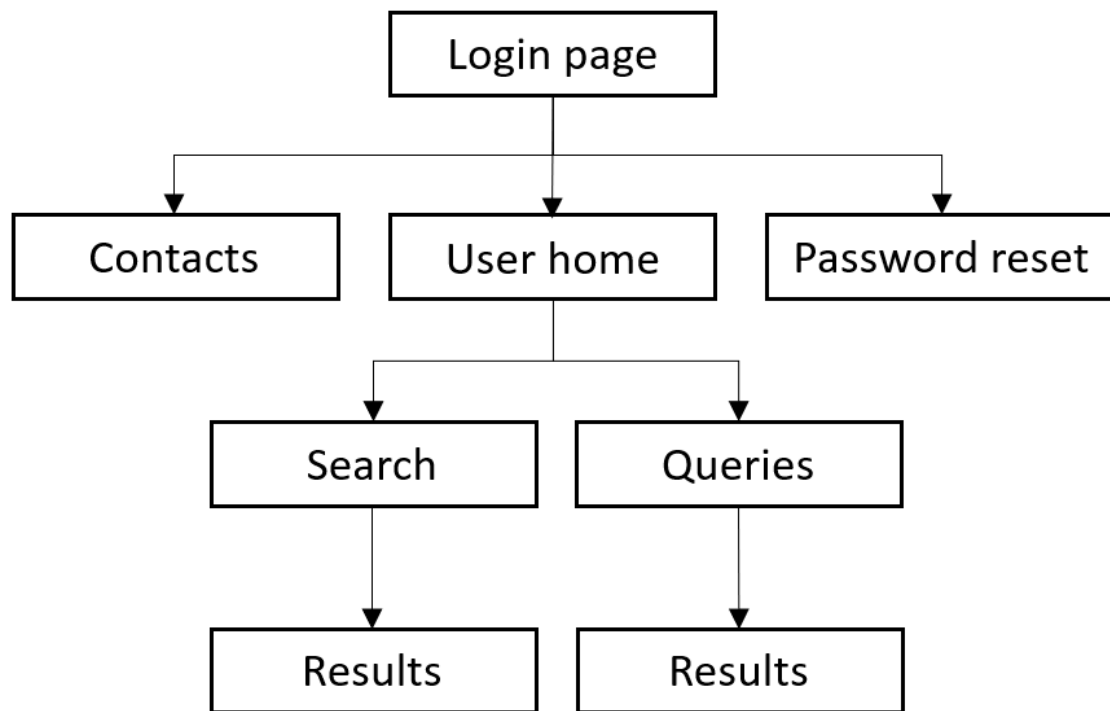
Figure 2. The navigation options available to authorised non-administrative users.
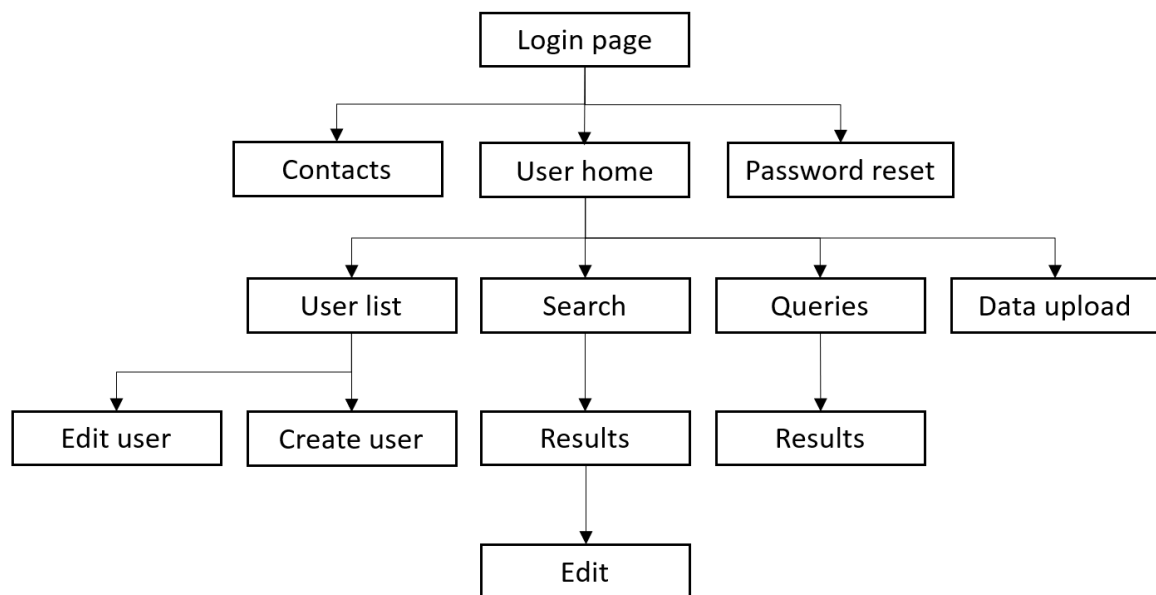

Figure 3. The navigation options available to administrative users.

Fig. 3 shows the ability to upload data, however this is not the only way to upload data. Another way to upload data to the system will be by creating a record in the database manually or through automated means, and by uploading the relevant picture to the file store.

Figs. 2 and 3 do not display the limited search and queries seen in fig. 1 as fully featured versions become available instead.

The contacts page will be used to contact the people running the database, for example to request an account, or to report an issue.

Crustacean Database

Home	Search	Queries	Contacts

Welcome to the crustacean database! This database is run by Aberystwyth University researchers. The database contains records of various crustaceans from around Wales. At the moment, we have 1,108 records!
If you have an account, please login below.

Username: mrbean
Password: ●●●●●●●●●●

Login   Forgotten password

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This is the main (home) page of the website, as majority of the users will have accounts, the default page will display the login form. It will display a short message at the top, alongside some statistics of how many records there are – it will be configurable.

Crustacean Database

Home	Search	Queries	Contacts

If you forgot your password, please use the form below to reset it

E-mail: ratkinson@example.com
Last name: atkinson

Submit

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If the user clicks "Forgotten password", they will be taken to this page, which will ask for their email and last name. This will be done so people cannot try random email addresses and spam account owners with password reset notifications. Once their details are entered, they will receive an email with a link which will allow them to enter a new password.

Crustacean Database

Logout	Search	Queries	Contacts

Welcome, Rowan Atkinson
User type: User
Session started: 30/06/2020 11:22am

Relevant information:
There is nothing to display at the moment!

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This is the page a non-administrative user will see when logged in. It will display some information about the user, and any announcements ("relevant information") that may have been posted by the administrators.

Crustacean Database

Logout	Search	Queries	Contacts

Welcome, Rowan Atkinson
User type: Administrator
Session started: 30/06/2020 11:22am

[Users] [Upload]

Relevant information:
There is nothing to display at the moment!

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Administrators will have a slightly different interface, they will have additional two buttons called "users" and "upload", which will allow them to access the list of users and to upload data.

Crustacean Database

Logout	Search	Queries	Contacts

Search: [＿＿＿＿＿＿] [New user]   Welcome, Rowan Atkinson!

Rowan Atkinson – Administrator – ratkinson@example.com		Edit
Adam Smith – User – asmith@example.com	Delete	Edit

The user list will contain every user registered on the system, alongside a simple search bar. Administrators will be able to edit every user and delete everyone except themselves. They will also have an option to create new users.

Crustacean Database

Logout	Search	Queries	Contacts

                                                        Welcome, Rowan Atkinson!

Name: [Adam Smith]
Type: User ◉   Administrator ○
Email: [asmith@example.com]

New password: [＿＿＿＿＿＿＿＿]
Repeat new password: [＿＿＿＿＿＿＿＿]

Note: Leave the password fields blank if not changing the user's password!

[Cancel] [Save]

Above is the user editing screen, which allows the administrator to change all details.

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Crustacean Database

| Logout | Search | Queries | Contacts |

Name: `New user`
Type: User ⦿ Administrator ○
Email: `email@example.com`

New password: [   ]
Repeat new password: [   ]

[Cancel]   [Create]

User creation page is almost identical to the edit page, with a few differences being the confirmation button is instead called "Create", and entering a password is compulsory.

Crustacean Database

| Logout | Search | Queries | Contacts |

Image name: `Image1`
Species: `Lobster`
Sex: Male ⦿ Female ○
Carapace width: [   ]
Abdomen length: `109`
Abdomen width: `55`
Boat name: `Swift`
Latitude: `52.38`
Longitude: `4.08`
Image: [Select file…]

[Submit]   [Clear]

Clicking "upload" from the administrator's user page will bring them to the page above, which will allow the administrator to create a new record. Not applicable fields can be left blank. Please note, this is subject to change, because the database structure has not been yet decided.

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Crustacean Database

Home	Search	Queries	Contacts

You can use the search form below to find records of crustaceans stored within our database!

Image name: _Image1_	Abdomen length: _109_
Species: _Lobster_	Abdomen width: _55_
Sex: Male ◉ Female ○	Boat name: _Swift_
Carapace width:	

Submit   Clear

Once the data has been uploaded, everyone will be able to search for it.

Crustacean Database

Logout	Search	Queries	Contacts

You can use the search form below to find records of crustaceans stored within our database!

Welcome, Rowan Atkinson!

Image name: _Image1_	Abdomen length: _109_
Species: _Lobster_	Abdomen width: _55_
Sex: Male ◉ Female ○	Boat name: _Swift_
Carapace width:	Latitude: _52.38_
	Longitude: _4.08_

Submit   Clear

A logged in user will have slightly more search options, latitude and longitude included above are used for illustration purposes only and might change during development.

Crustacean Database

Home	Search	Queries	Contacts

1 record found!

Image1	Lobster	Male	View

Searching for a record without being logged in will return a page showing a list of all matches. The users will then be able to view their chosen record.

Crustacean Database

Home	Search	Queries	Contacts

Image name: Image1
Species: Lobster
Sex: Male
Abdomen length: 109
Abdomen width: 55
Boat name: Swift
Latitude: 52'38 N
Longitude: 4'08 W

Back

This is what a record screen will look like to the user. It will contain metadata about the catch, and the image (if applicable).

Crustacean Database

Home	Search	Queries	Contacts

Image name: Image1
Species: Lobster
Sex: Male
Abdomen length: 109
Abdomen width: 55
Boat name: Swift
Latitude: 52'38 N
Longitude: 4'08 W

Back	Delete	Edit

Administrative users will also have the option to edit or delete the record. Deleting will return the user back to the search screen.

Crustacean Database

Home	Search	Queries	Contacts

Image name: Image1
Species: Lobster
Sex: Male ⦿
    Female ○
Abdomen length: 109
Abdomen width: 55
Boat name: Swift
Latitude: 52.38
Longitude: 4.08

Cancel	Save

The edit screen will allow the administrators to change all the details about the record, except for the image. If they wanted to change the image, they should delete the record, and upload a new

one.

Crustacean Database

Home	Search	Queries	Contacts

You can use the below queries to extract specific data about our catches

Query: Population density ▼

Location selection: Coordinates ▼

Number of Lobster ▼ within 5 miles of: Latitude 52.38

Longitude 4.08

Submit   Clear

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Users will also be able to run queries on the data. Logged in users will have more filters and tools than users who are not logged in.

Demonstrated above is the "population density" filter, which allows users to find the number of matches within a square area of a specific point, as well as the population density within that area.

Crustacean Database

Home	Search	Queries	Contacts

There are 2 catches of Lobster within 5 square miles of 52.38N, 4.08W!
Population density is 0.4/sq. mi.

Image1	Lobster	Male	View
Image49	Lobster	Female	View

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This is what running the query would return.

Crustacean Database

Home	Search	Queries	Contacts

Please use the contact form to contact us!

First name:	rowan
Last name:	atkinson
E-mail:	ratkinson@example.com
Reason:	Select a reason… ▼
Tell us about your issue:	

Submit   Clear

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Finally, there is a possibility that some problems might occur, therefore the contact form allows users to contact the maintainers of the website directly. The form could be used to report problems, or to request access to the system.

Evaluation

The evaluation stage was brief and involved asking 3 people some questions of how they would perform certain actions on the hyperlink-based prototype.

2 of them noted that it was difficult to figure out how to use queries, when they had a simple form with fields to fill (similar to what the edit page looks like), this led to me redesigned the query form to make it more readable.

Following the search test, everyone noted that the initial search results did not contain enough information to uniquely identify a result, therefore I included the image name, species and gender. I considered including a thumbnail for every result, however, I decided against it. Large searches would have taken a long time to complete, and the page would take a long time to load if it had to load a lot of thumbnails.

No other significant changes were made, other than some minor stylistic layout changes to make the design look more visually appealing. However, given the minimalistic look of the prototype, the design might change during development.

I think that the initial design was well done, especially because the UI is not particularly complicated, and does not include a lot of pages or options, thus getting it almost right the first time is not very surprising.

However, given the small number of testers available, there might be some other things we missed during our evaluations.