Module Code: CS2HW19
Assignment Report Title: Group 8 HCI Report
Student Number (e.g. 25098635): 27015244, 28009252, 28010355, 27010256, 28011974, 28001144
Date (when the work completed): 10/12/2020
Actual hrs spent for the assignment: 33 hours
Assignment evaluation (3 key points):

1) Brief needs to be better explained, so that it is clear as to what to do for each task.
2) Rather than give general feedback to groups, give more group specific feedback to ensure that the group can achieve their potential.
3) This coursework needs to be better planned so that students have the time to complete tasks to their fullest.

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Task Effort Contribution Table

Group member	Member name	Task 1	Task 2	Task 3	Task 4	Task 5	Average Effort Contribution score %
Member 1	Isha Khan	70	70	70	70	70	70
Member 2	Shavin Croos	70	70	70	70	70	70
Member 3	Petros Andreou	70	70	70	70	70	70
Member 4	Viktoria Germanova	70	70	70	70	70	70
Member 5	Alkiviadis Pavlou	70	70	70	70	70	70
Member 6	Nathan Rockell	70	70	70	70	70	70

Introduction

For almost a year, the COVID-19 pandemic has gripped the world in darkness. Unfortunately, due to the number of deaths that have happened over the year due to COVID-19, we can see that the public isn't educated well enough about the dangers of this infectious disease and how it is transmitted. To help combat this issue and thus reduce all the unnecessary deaths, we have come together as a group to design a product that will help the people to get a better grasp of what this pandemic is and why they should be more careful during this time.

Task One: Need finding

Need finding plays a significant role in terms of this project. In this section of the project, we plan and develop based on what our main objectives are. The goals of the actual project are as follows:

- Understand general attitudes towards learning about covid-19
- Understand general attitudes towards current covid-19 learning websites
- Discover which websites people currently use to learn about covid-19
- Find out what features the users desire in covid-19 learning websites

Interviews

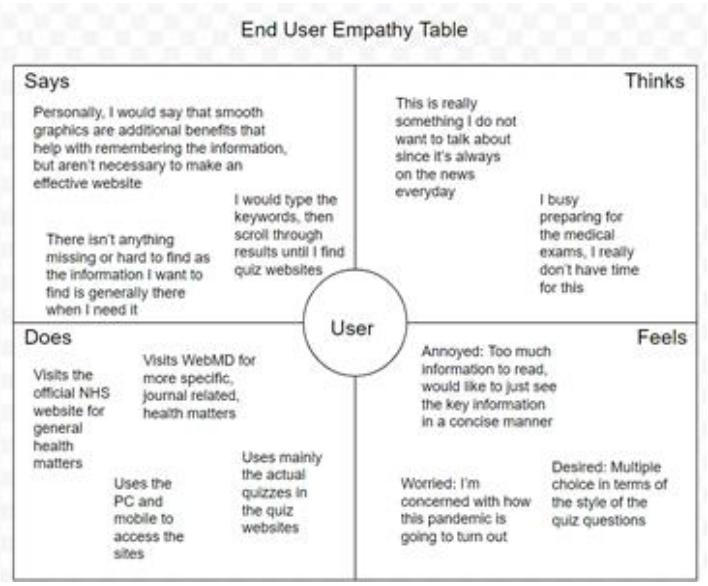
Each member of our group interviewed potential end-users and domain experts. By interviewing these two different groups of people, we were able to put realistic wants (by end-users) and aims (by domain experts) together. Alongside this, we were able to gather a lot of information that perhaps we thought were not necessary to form an engaging e-learning system. The most appealing questions we found amongst us were:

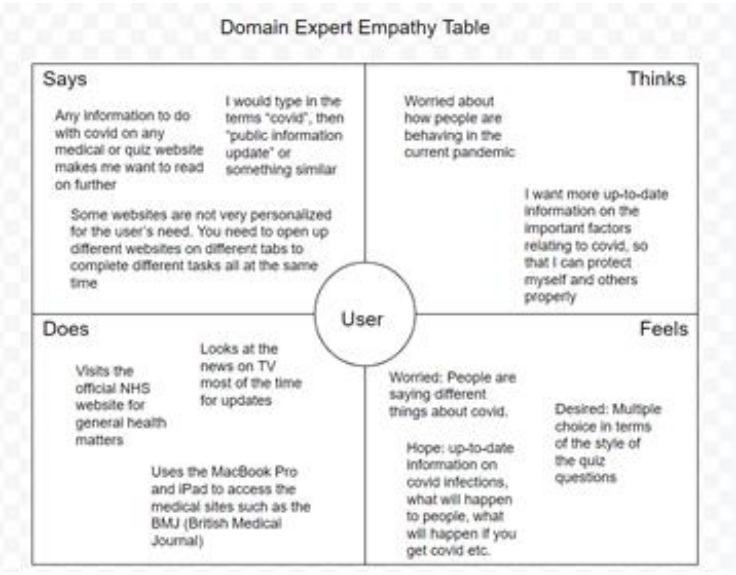
Domain Experts
1. Tell me your approach to finding a quiz website? · If the answer is to access through direct URL: Do you use a bookmark for this? · If the answer is web searching: What terms do you typically search for? · If the answer is a link on another site: What sites? · If the answer is a bookmarked link: Tell me how you would have obtained the URL? 2. Which feature do you use the most on a quiz website? 3. What do you look for in a quiz website that is missing or hard to find? 4. What devices do you typically use to access the quiz website?

End Users
1. How would you like the key information displayed? 2. What sorts of tools would you find helpful? 3. What kind of statistics would you like to see and in what form? 4. What is your preference for data representation? Raw or analysed? Why? 5. How would a website showing the progression of coronavirus satisfy you?

Empathy Map

Empathy mapping is based on the emotions of others to pursue a project by working as a team. It also initiates a qualitative approach whereby we used interviewing, which is classified as a qualitative method to visualise a shared outcome. We are using empathy maps to figure out what our end users really would like by using their emotions as a significant factor of contribution.





POV Development

During the process of interviewing and empathy mapping, we found that our most compelling POV's were:

1) Users may not understand certain words: particularly when referring to medical terms, the user may not understand certain words and be discouraged to further read an article/statistic. (Based on a couple of our interviews)

2) From our empathy maps, we found that users feel distressed when viewing specific figures such as a rise in cases, death rates etc.

3) When a user must access other websites to find specific information (such as original websites retaining important information) the user may find it tiresome and therefore discontinue their activities from the current website

HMWS (How Might Wes)

Based on the POVS above, we have tried to come up with ideas that can help tackle the different perspectives:

1) Users may not understand certain words – to make this website compatible with this POV, there are two sorts of alternatives that can be produced. One of them is a glossary table listing keywords that people may not understand and can further educate themselves. The second method could be, just as other websites, little information icons (displaying as i?) where a brief explanation or definition would display on the screen

2) Distressing figures – seeing figures of increased rate and deaths can be very distressing to the user and perhaps cause the user to go off the website. To be able to interact with the user we would like to display 'happy figures'. These figures would implement a positive approach to our website. For example 'rates of increase however, by wearing your mask and social distancing you can help prevent the spread'

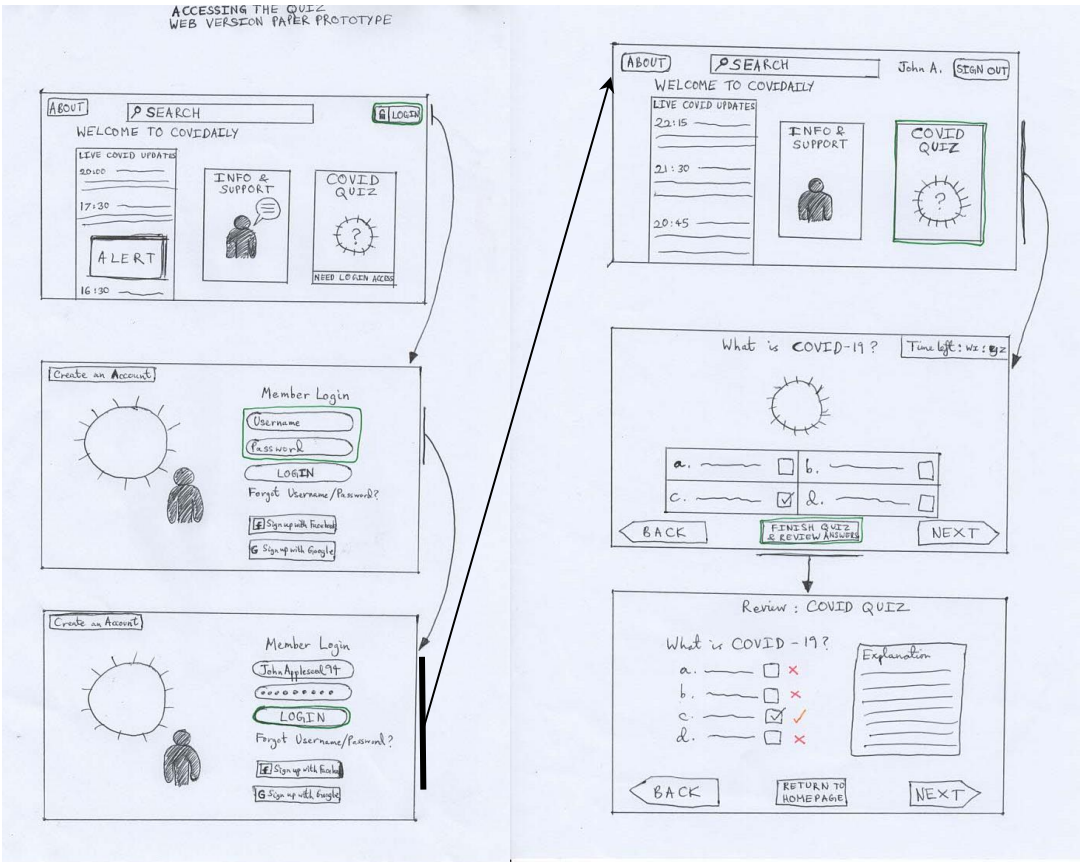
3) Hyperlinking – to overcome our third POV of users becoming tired of switching from page to page to retain certain information. When listing certain figures or facts we want to reference it by hyperlinking it perhaps in brackets rather than 'visit NHS for this' etc.

Task 2: Paper Prototyping

Within this task, we developed lo-fi prototypes to help aid the design process of how the website will look. We looked at designing three different prototypes, each demonstrating a different task.

Filling Out Quiz

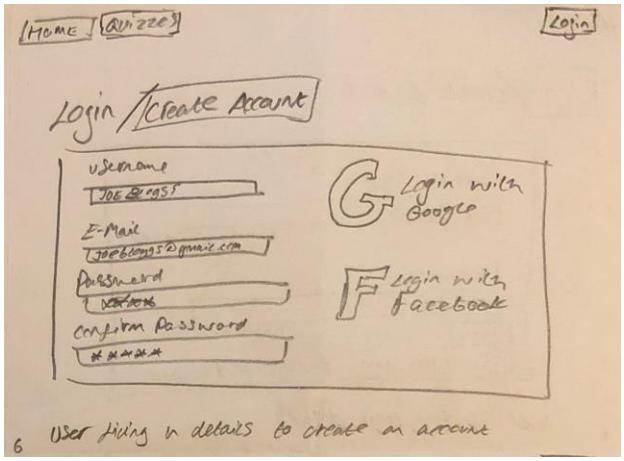
The prototypes below demonstrate what the home screen and a design for the login page will look like. We went with a clean but effective layout showing all the relevant information to the user. The layout provides a friendly and easy to use design which is familiar to our target user group of 16-21-year old.



The advantages of this design are that it demonstrates a clean, easy-to-use user interface, with all the buttons on-screen are self-explanatory and are very familiar to current systems that the user knows. However, the disadvantages are that there aren't links on the page to a glossary or hyperlinks to further information to aid people in their learning of COVID-19.

Creating Accounts

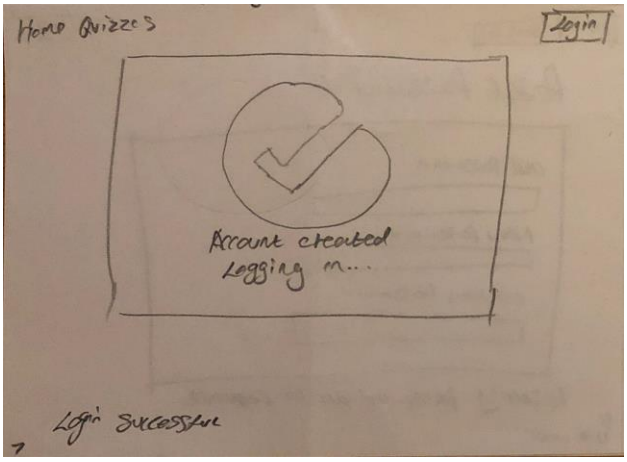
The second prototype that we created was creating accounts, this displayed how the user will be able to create accounts to save results on the website and access many other features like forums.



Within our prototype, you can see that we have gone for a clean and easy one-page approach. Furthermore, we have made it clear that you can log in using Google and Facebook too, which is a very commonly used feature that is known and trusted by a lot of people.

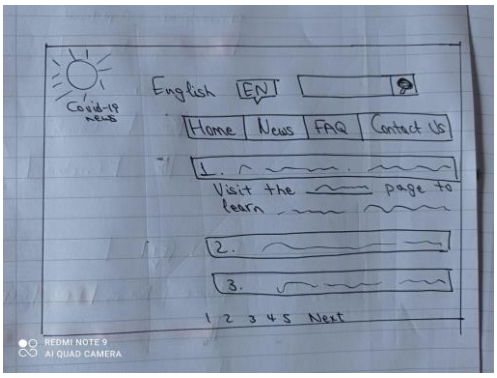
Once the user creates an account, they are presented with a login success method and then redirected back to their homepage/landing page to access all the features.

The advantages of this prototype is that it's easy to use, there are precise representations of different functions, e.g. using Google and Facebook. However, the disadvantages are that it might not be necessary to have a full login page as it could be just as effective if not more if the user was just to have a tab that slid in from the side to which the user can log in and not leave the page they are on.

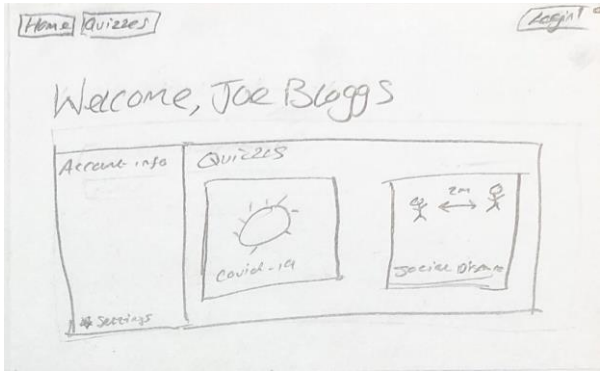


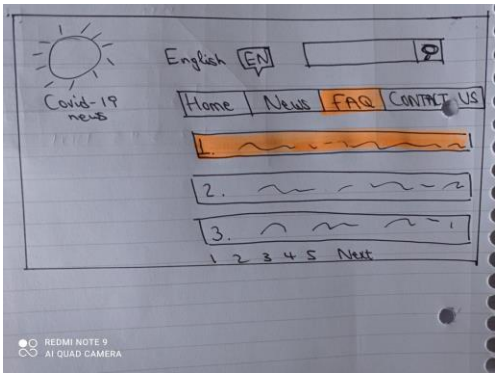
Accessing Further Information

Our final prototype was focused on accessing further information to aid in the understanding of COVID-19, whether that be social distancing, symptoms, ways of working around it like studying/working from home, self-medication etcetera.
In this prototype you can see the user logging in, going to a FAQ tab and being able to find more information there about COVID-19.



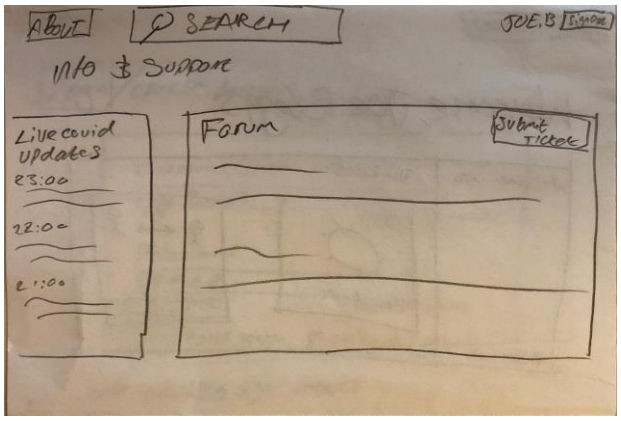
The advantages of this are that the information is answers to questions that others have asked providing clearer solutions as the questions are from like-minded people. However, the disadvantages to this are that the use of tabs can make it hard to access and follow, and there are not different sections like a Glossary and also a forum.

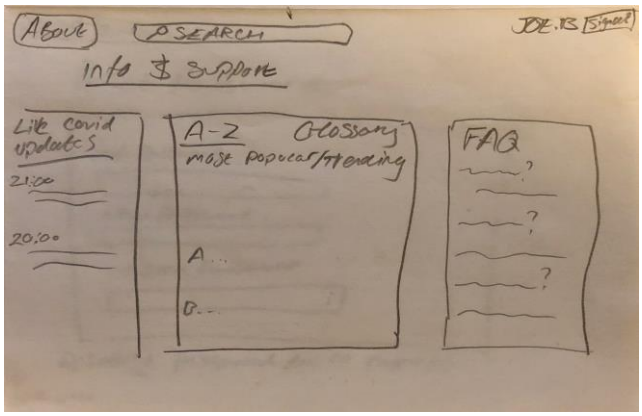




Test Measures & Changes

On completing the prototypes, we asked our stakeholders for feedback on the design. Some of the points that arose were to provide more links/easier access for access to further information; leave essential functions like links to home and user account on all pages, so there is more freedom for the user to navigate the site. Furthermore, they suggested possibly including an option for VR when completing the quiz so that it is more interactive (adding video/adventure decision based), alongside this add a mobile design, so the website is responsive as most people use their phones rather than laptops.





Above are the redesigned pages for the 'info & support'. The design is in blocks/sections, each providing different information - the use of blocking makes it cleaner and more simple to read and also gives concise and precise information.

Task 3: Heuristics

A heuristic evaluation is a methodology used by experts to measure the usability of user interfaces (UI), which is done by using the rules of thumb to enhance the product usability in the initial stages of the product development. By doing this, we are eliminating the possibility of getting unnecessary issues that may occur later in the development process. For this task, we conducted heuristic evaluations on Group 2's user interface of their paper prototype for the COVID-19 website.

One of the first violations that we found in the heuristics evaluation was the lack of visibility of system status. For instance, if the user were to press a button to go to the next page, there would be no color change for the button to show that the process was being carried out. This could lead to the user clicking the button several times unnecessarily and thus crash the system. Another violation we found was that there was a lack of user control and freedom. When the user starts the quiz, they are only given the option to select an answer to a question and to click next. This is a problem since if the user were to make a mistake, they cannot go back to correct that error they made and so, in hindsight, would have been a good idea to add a cancel button to allow the user to start the quiz again or a back button to go back a question.

In addition to this, there was more recall rather than recognition. To illustrate this violation, there was an 'L' button located at the left-hand corner of every page the user would visit. However, it was not made clear what that button was or how it would function, which will lead to confusion in the user since they will not be sure as to what they should do, say if they want to leave a page. Using a recognizable character, such as 'X', would allow the user to better navigate the website. Also, the contents page of the website should be listed on the first page of the website since a website should be designed in a way that the user knows what they are looking for when they first

enter it. This will allow the user to access relevant information more quickly and accurately without having to second-guess themselves about what they could remember.

Another point to make is about the flexibility and efficiency of the use of the UI (user interface), which talks about enabling the user to find a method that best fits them to use the UI. A good example of this is copying and pasting, where we use Ctrl C despite there being other methods of achieving the same result, such as highlighting and right-clicking, since it's more efficient to use and makes us feel more compliant. There is the usage of this heuristic in their paper prototype, mainly when using the 'One Page' layout. This reduces the need for scrolling and allows for the user to access information more efficiently and thus complete activities almost effortlessly.

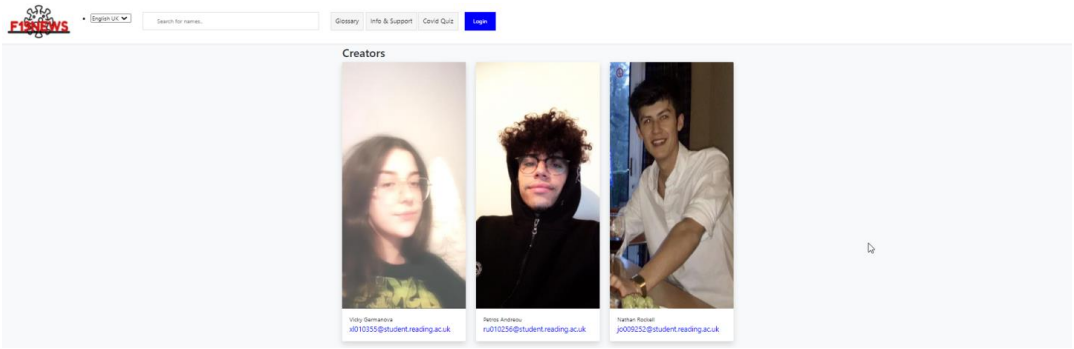
Another violation made was the fact that some of the pages that were designed for the paper prototype were too cluttered, often containing too much information or irrelevant information that the user may either not grasp, understand or simply feel that it's not needed at all. This means that the user will have to rely on their memory on what they could remember or salvage from the pages, which is difficult for some. Also, the pages should be ordered better so that it's clear how the user will use and experience the website. To fix this, only the vital information and content should be displayed on the pages so that people can grasp the context quickly just by glancing at the pages. The pages should be ordered in what the user would like to know or see first so that the user will feel intrigued to carry on reading and finding more information without having their heads hurting.

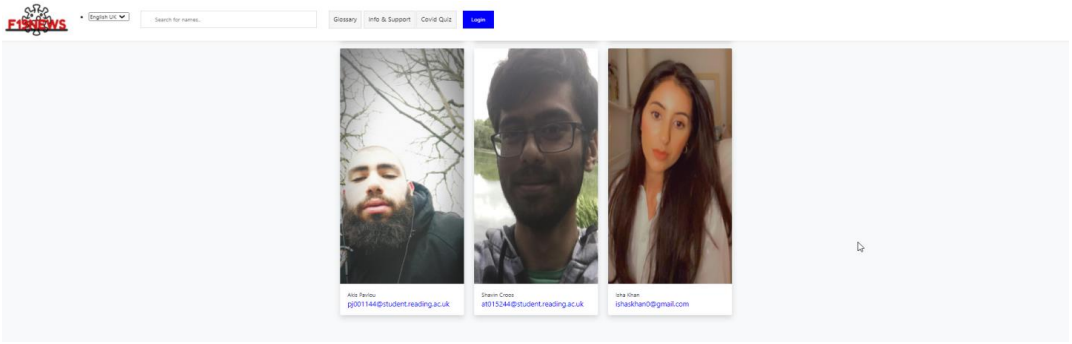
Finally, when the user comes across a problem using the UI, the UI should have a feature or design that will allow them to overcome the problem. For example, most online retail sites will have a chatbot to "assist" with the users' needs when required. In Group 2's paper prototype, they don't have a search engine to help with what the user wants to find more efficiently and quickly. On the other hand, they do use the WHO (World Health Organisation) as a link for when the user wants to confirm facts with their "Top Tips".

For bonus heuristics, see Appendix.

Task 4: Hi-Fi Implementation

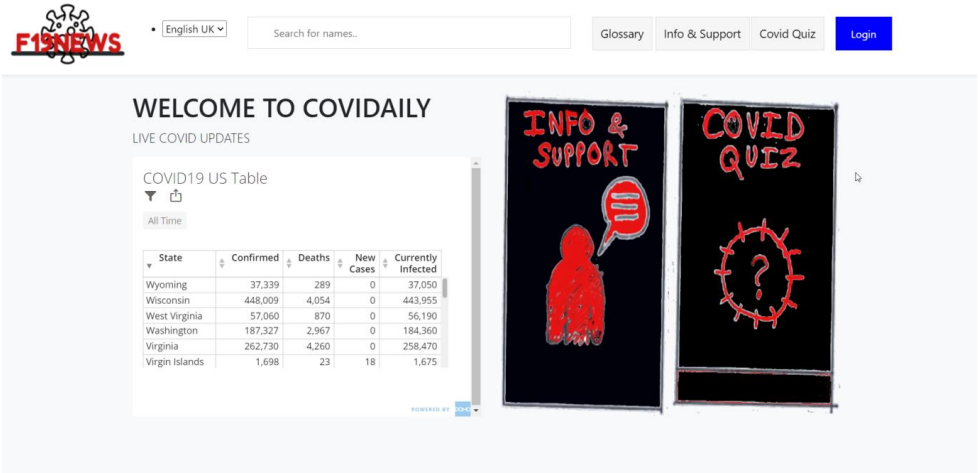
By using bootstrap, alongside HTML and CSS we were able to use a template and manipulate it to our own design. HTML – hypertext mark-up language focuses on building web pages whilst CSS focuses on the design and layout. Here is the team behind our web-based system:





Heuristic Evaluation Based on Our Web System

The purpose of heuristic evaluation as mentioned before in task three, is to evaluate the web system to find and prevent usability problems in the UI design.



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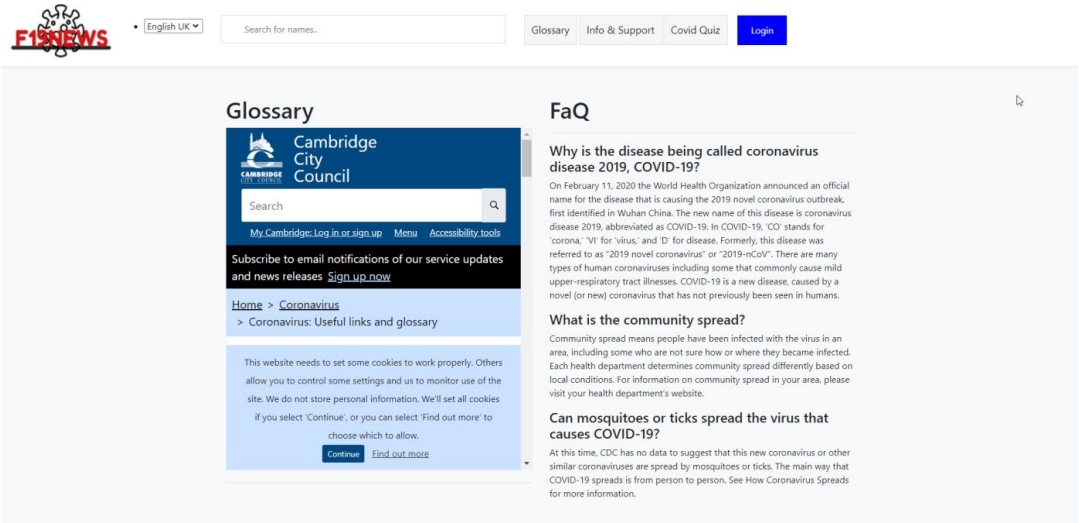
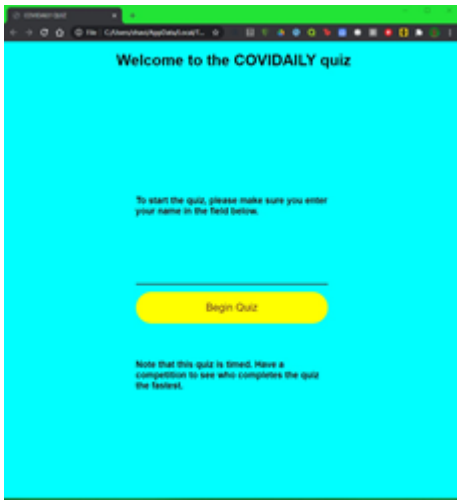
This is the first webpage: a welcome page. This welcome page aimed for a ‘Aesthetic and Minimalist Design’ which is the eighth heuristic in terms of heuristic evaluation. This essentially focuses on the relevant things, as you can see statistics of covid-19 rates are shown in all countries. Furthermore, the fact that it can be understood, the writing alongside the statistics shows a ‘Match between the system and the real world’ – the second heuristic. This means that our web-based system can be understood by users as it speaks their language rather than focusing on system-oriented terms. Also, at the top of the page there is a search bar like most web pages; it is situated in the center of the top to allow the user to navigate themselves through or find something in particular. This is another heuristic, in fact, the last one which is help and documentation allowing users to search something easily.



By focusing on user needs, based on our interview questions and ‘how might we’ this was our second web page. The main purpose of this web page is for users to understand every aspect in terms of vocabulary. We discovered that users, when they do not understand, they often switch between web-based systems, so we wanted to ensure that this was not the case. This also focuses on the second heuristic of ‘Match between the system and the real world’ alongside ‘consistency and standards’. In terms of consistency, the UI design is very consistent to the first web page, whereby there is a logo, the search bar and the navigation bar in the top right-hand side as shown in figure 3. These are the main web pages which the user can browse through for information which is then followed by the quiz in figure 5.

We opted for more colors for the quiz as these would be the pages where the system interacts with the user, hence being more user friendly. This also focuses on the aesthetic and minimalist design. When receiving feedback for our initial design we noticed that people really like colors alongside the web page looking professional. We used the blue color as it signifies a calming effect especially during such a distressing time for some people.



Our quiz allows a user to go back if they wish to or proceed next with buttons allowing them to do so which focuses on the seventh heuristic of ‘Flexibility and efficiency of use’ as well as the third heuristic of ‘user control and freedom’. The reason for this is because when a user makes a mistake or wishes to alter their answer, they can go back without having to shut the tab and try again. The ‘undo’ nature is important in the sense that it gives users the freedom. Whilst, like most websites when doing a quiz, you can go back and forth and if you cannot, it is off putting. Hence why we believe that we achieved these two heuristics in the quiz design.

When ending the quiz, the answers will show for the user to be able to revise and see where they went wrong. This page also has navigation buttons to allow the user to retry a quiz or go back to the homepage.

For Task 5 slides, see Appendix.

Task 5: Storyboarding and Video

The main objective of this task is to get across the overall message of the system in one short video. In our short video, we had to create multiple storyboards which will then come together to create the main scenes. https://www.youtube.com/watch?v=JQQFrEEs8l8&feature=youtu.be

Conclusion

Overall, this project covered several main aspects to create the COVID-19 website. One key aspect of this project was need finding, where we collected all the user’s thoughts and requirements on how the system should be when completed. We then did the paper prototypes and the heuristics to visualize what the website would show when finalized and thus note down any issues that may occur during the build and improve user-friendliness. We then designed the first live prototype and showcased our product on a video to get a better look at the final result. Based on all that we have done over the duration of the project, the website could have been improved by adding photos to the quiz webpage to give a better context of the questions being asked.

References & Appendices

H1: Visibility of system status | Sev 1

Differing button size is unnecessary; screen size is used in an inefficient manner. Instructions are cluttered and hard to read.

Fix: Instructions could be re-distributed and changed so that they are clear.

H1: Visibility of system status | Sev 1

When the user clicks on one of the tabs in the homepage it's hard to know which tab they are on.

Fix: Either display the name of the tab the user is on or highlight the tab title so it's easily identifiable.

H1: Visibility of system status | Severity 2

A timer is visible on the quiz page. This is not mentioned to the user on the previous page where the quiz link is located. The system should always keep users informed about what is going on, through appropriate feedback within a reasonable time.

Fix: Have a start button appear before the timer starts or add some additional information on the link.

H2: Match between system and the real world | Sev 3

Users should be provided with a hint in each and every question on the quiz for an explanation of medical-oriented terms so that they can answer ideally.

Fix: Avoid medical-oriented terms in the questions or if not possible, provide explanatory hints.

H3: User Control & Freedom | Sev 4

Users shouldn't be through registration or login to access such a site.

Fix: Remove login/register process

H3: User Control & Freedom | Sev 2

There is no retake button after the completion of the quiz. Could really boost up the process rather than go back to the homepage and then back to the quiz. Put the homepage button on the top of the window, as the user takes the quiz. The reason may be to force exit before completing it.

Fix: Add quiz retake button and transfer home button on top of the bar that allows "emergency exit" from the current state.

H3: User Control & Freedom | Sev 2

There is no search button on the homepage. Users shouldn't be available to search for things only in the FAQ page.

Fix: Add search button to the homepage and maybe remove it from FAQ as he will be directed immediately to the searched question.

H4: Consistency & Standards & H10: Help and documentation | Sev 1

The FAQ should have a hyperlink to open the website directly rather than the process: Open tab, find info on www.example.com. (this is mentioned in cons, so the team recognised it and will fix it)

Fix: Hyperlink FAQs => faster and more straightforward approach.

H4: Consistency & Standards | Sev 4

On the homepage, there is an “About” button but nowhere is shown what it is doing in the prototype.

Fix: Either remove it or make it useful as shown the web-systems purpose and some documentations.

H4: Consistency & Standards | Sev 1

The screen dimension is constantly changing, and dialogue presented in different ways.

Fix: Ensure that dimensions are consistent, or changes are necessary.

H6: Recognition rather than recall| Severity 3

Giving immediate feedback tends to trigger better responses from users, so giving information more readily is preferable to making them sit through the whole quiz. What is the goal of this quiz, to find information on people - i.e. to find out about their knowledge of the coronavirus or to educate them on coronavirus information? If it is the latter, then user interaction and increasing click rate are more important than the completion of the quiz.

Fix: A small restructuring of the quiz to give immediate feedback would be sufficient i.e. an animated highlight of the correct answer and potentially further detail i.e. sources with links on the review page.

H7: Flexibility & efficiency of use | Sev 4

The first thing that should appear on the interface is a pop-up icon to choose a language. A global problem requires global solutions.

Fix: Add choose language window before anything else.

H8: Aesthetic & Minimalist Design | Sev 3

The review page shouldn’t make the user go through the whole quiz again to find the mistakes. In a single page (or 2) you should put ONLY the wrong answered questions highlighting in red his answer and green the correct one. And the explanation as it is shown.

Fix: Quick and effective review page by displaying only the wrong answers, not going through the whole quiz. A score could also be added e.g. 8/10

H8: Aesthetic & Minimalist Design | Sev 1

Dimensions of the screens continually vary, and the instructions that are provided to the user are cluttered and appear like block text.

Fix: Redistribute and redefine information.

H10: Help and documentation | Sev 3

No optional initial explanation feature that could help new users further their understanding of how the system works.

Fix: Provide a tutorial/explanation for new users to the system.

Category	# Viol (sev 0)	# Viol (sev 1)	# Viol (sev 2)	# Viol (sev 3)	# Viol (sev 4)	# Viol (total)
H1: Visibility of Status		2	1			3
H2: Match Sys & World				1		1
H3: User Control			2		1	3
H4: Consistency		2			1	3
H5: Error Prevention						
H6: Recognition not Recall				1		1
H7: Efficiency of Use					1	1
H8: Minimalist Design		1		1		2
H9: Help Users with Errors						
H10: Documentation				2		2
Total Violations by Severity		5	3	5	3	16

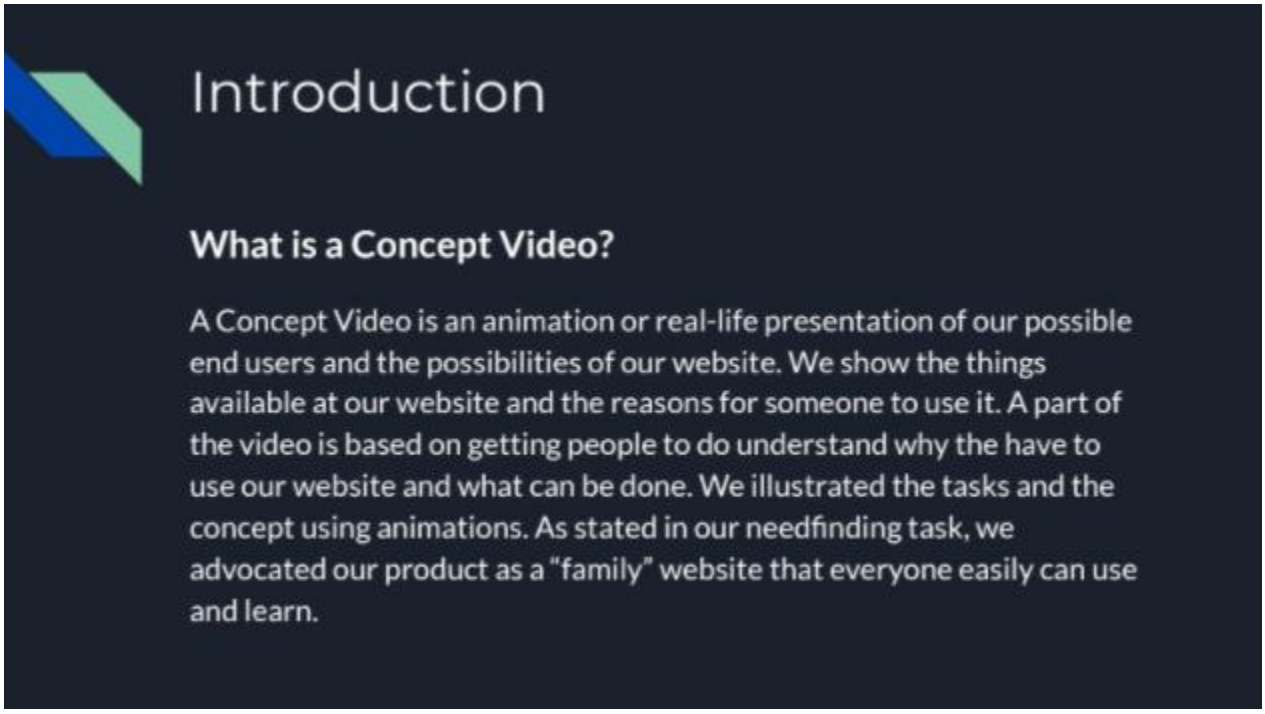
0 = I don't agree that this is a usability problem at all

1 = Cosmetic problem only: need not be fixed unless extra time is available on project

2 = Minor usability problem: fixing this should be given low priority

3 = Major usability problem: important to fix, so should be given high priority

4 = Usability catastrophe: imperative to fix this before product can be released



Goals

- We wanted to make the website look more like a tool and make everyone keen on using it for their own knowledge and health.
- We wanted to show a simplicity in our product and indicate the fact that even elderly can use it properly because those are the ones who need it the most.
- We did not want to focus on the UI section and just present the possibilities as they are.
- It was more important to explain who is able and needs to use our website.

Storyboards

Before starting the Concept Video we needed to develop a storyboard about our Task. We needed to make sure that everything will go through with everyone on the same idea. We wanted to make sure that there was going to be a continuation in our final video. It is really important to balance the scenes and what appears to the user.

Storyboards

Timeline:

The video should be under 1:30

00:00-00:15: Opener and Problem

00:16-00:39: Solution and End Users

00:40-00:55: Product and Functions

00:56-01:06: Explanation of Functions

01:07-01:14: Conclusion

Storyboards

Key Scenes:

- Opener and Problem scenes do not need a lot of explanation, probably simple questions.
- Solution and End Users need to show who and how the problem is going to be solved.
- Product and Functions need to specifically show certain stuff and just lead the user.
- Explanation on Functions needs to focus on all the aspects of our website and present the appropriate way to use them.
- Conclusion should be simple and show again the product.

Storyboards

Script:

- No need for long and extensive sentences.
- Each scene should include a small phrase.
- Make the phrases fancy and simple.
- Use simple words to let the user get the idea from the animation.
- Add cheerful music to keep a good note.
- Use bright colours in all the scenes.
- Choose characters that are everyday people.

Concept Video

https://www.youtube.com/watch?v=JQQFrEEs8I8