

Occupational Specialism

Task 2 Development

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Task 2: Designing the solution

Introduction

Set task brief:

The software development company you work for has secured a new contract to develop a digital solution for GibJohn Tutoring.

- GibJohn tutoring currently provides customers with:
- Face-to-face tutoring sessions
- Access to learning resources
- Support to develop understanding in different subjects

The client (owners of GibJohn Tutoring) would like to develop a digital solution that will:

- Provide interactive teaching and learning resources in a range of subjects
- Provide access to digital content to encourage wider learning
- Support and monitoring of learner progress.

The client has carried out some market research with existing customers and tutors to identify features that could be included in the digital solution. The potential features suggested by the client are:

- Collaborative teaching and learning tools
- Accessibility features to support a wide range of users
- A learning reward system
- Gamified learning

My proposed solution

I have been asked to create a solution that will meet the client's needs.

For my proposed solution I will be designing a website, that will be able to provide access to digital content to encourage wider learning, give support to develop understanding in different subjects.

I will also be implementing a live chat feature where can you speak to a tutor for any advice and help that you may need.

- To make the website I will be coding in HTML and JavaScript to implement some dynamic features on the page.

To include all users, I will be trying my best to focus on making the website as accessible as I can, this could range to a magnifier to enlarge the text on the screen all the way to colour blind settings.

Requirements:

- Live chat
- support to develop understanding in different subjects
- access to digital content
- Accessibility settings

To ensure that I will have enough time to fully develop the project I will be using a method called agile, agile uses sprints which is the bare minimum requirements needed for a working project, each sprint from then on will add more features working on the existing foundations.

If I am ahead of schedule I will attempt to add a way to talk face-to-face with a tutor using something

I will be splitting the project into 3 separate sprints, each focusing on their own aspects of the webpage, sprint 1 will be focusing on the main requirements of the webpage, however, will be the bare minimum as the other sprints will improve on the foundation.

I will be planning to use **HTML** to create the webserver to add some dynamic features to the page such as parallax text I will be implementing some JavaScript into it.

I will also be using **CSS** which is a stylesheet (to make the page look nice)

Functional and non-functional Requirements

Functional

| # | Requirements | How will I accomplish? | Acceptance |
|---|--|---|---|
| 1 | Website displays relevant information | Using HTML and JavaScript i will make a website | When i click load on the website it will open and allow me to access the website as a whole |
| 2 | Authentication of a user when he/she tries to log into the system. | | |
| 3 | Live chat | | |
| 4 | Support to develop understanding in different subjects | | |
| 5 | Accessibility settings | | |
| 6 | Access to digital content | | |

Justification

| Requirements | How will I accomplish | Acceptance |
|------------------------|---|---|
| Create useable website | Using HTML and JavaScript I will make a website | When I click load on the website it will open and allow me to access the website as a whole |

Non-Functional Requirements:

- The program can run.
- The program loads every time.
- Updated quickly.
- The program runs effectively.

- It performs well under stress.
- Updated security to protect users.
- No bugs/errors or very little on release.

Data Requirements

The following data types will be used:

- Strings: used to store information such as login credentials, passwords, emails, and other text-related data.
- Floats: utilised to store decimal numbers, such as cash, because they are not whole numbers.
- Boolean: true or false to allow data to flow in and out at different times. Incorrect passwords, for example.

Decomposition of problems

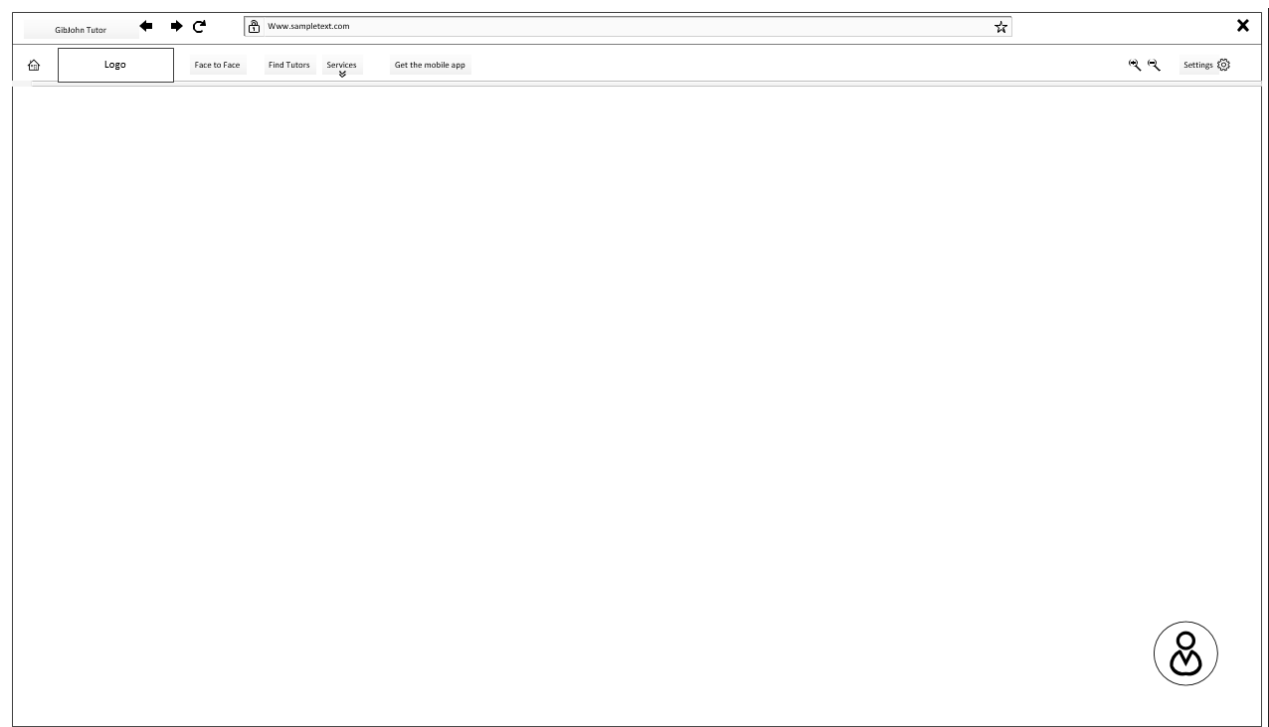
Problem 1 – make a system that can provide learning resources to the client

- Provide learning resources
- Fetch information.
- Display information.

Design

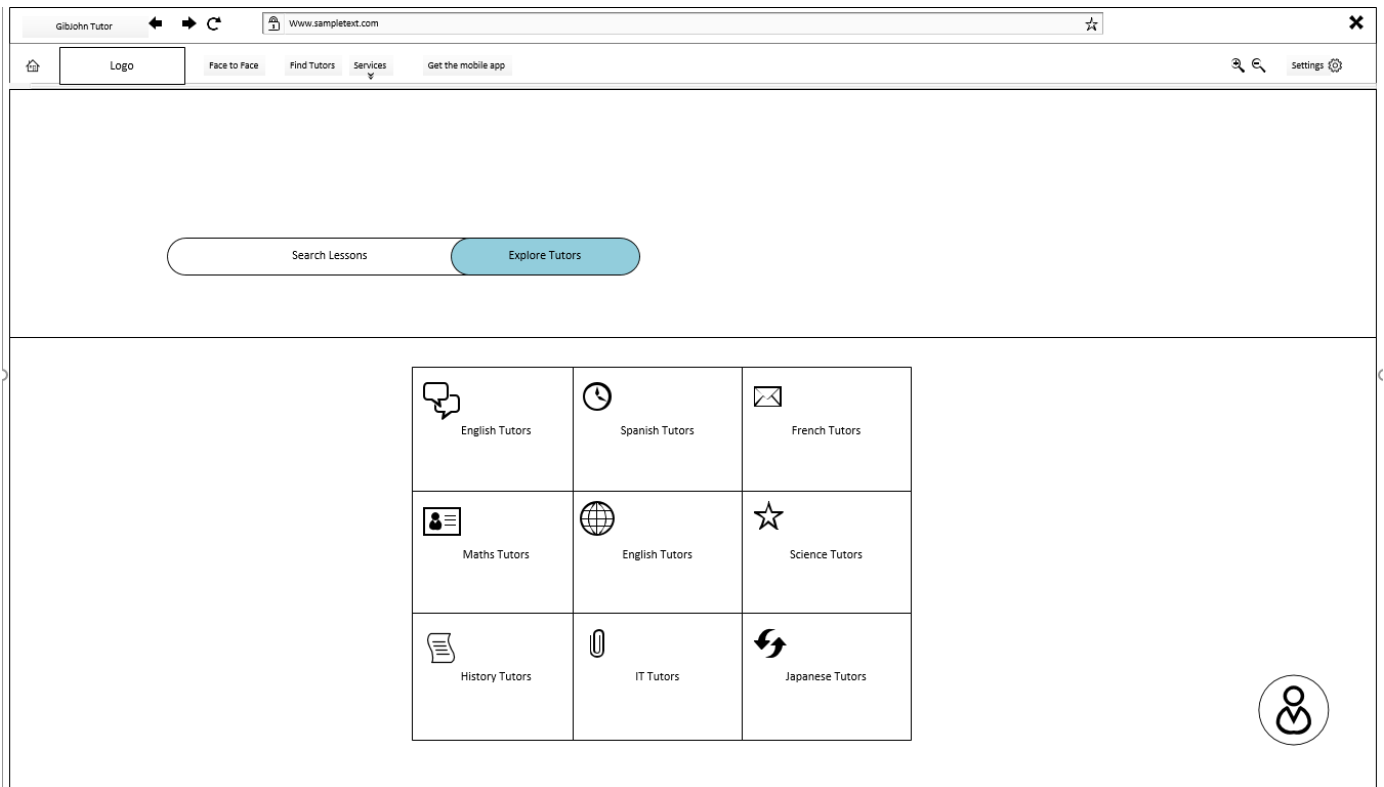
I have made a quick wireframe outlining key aspects of the main page for the website, along top will be the navigation bar. This will contain a series of buttons one being a drop down to add some dynamic features to the webpage, in the top left corner will be the logo of the company.

In the top right I have added a magnifying glass to enable users with visual difficulties to increase the size of the font on the page, next to it is the settings button that will drop down allowing you to customise the page. This will include a dark mode and colour-blind setting.



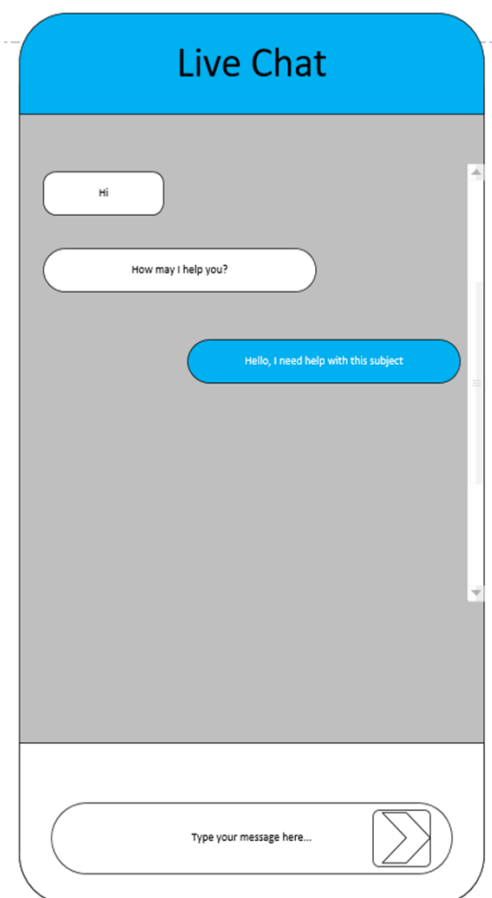
Initially i thought of having a pop outside navigation bar using JavaScript, however I thought the overall design would be taken up by the side navigation bar and have decided to go for the standard type of navigation bar whilst still including some JavaScript within the top nav bar.

I have decided to add some buttons in the middle of the page that will take you to different subjects that you can choose from however this may change soon.



I have included a search bar so you can quickly and easily find what lesson you are looking for.

In the bottom right will be the button to contact the live chat, I have designed a quick wireframe for the design of the chat.



Automated testing

Real users and manual testing aren't usually required. Stability and non-regression tests, as well as those performed with each new feature or modification, are examples of repetitive tests that can be automated.

- Reduce costs by lowering the amount of work that must be done manually.
- Make the most of your testing efforts.
- With a simple click, you can run dozens of tests to increase your coverage.

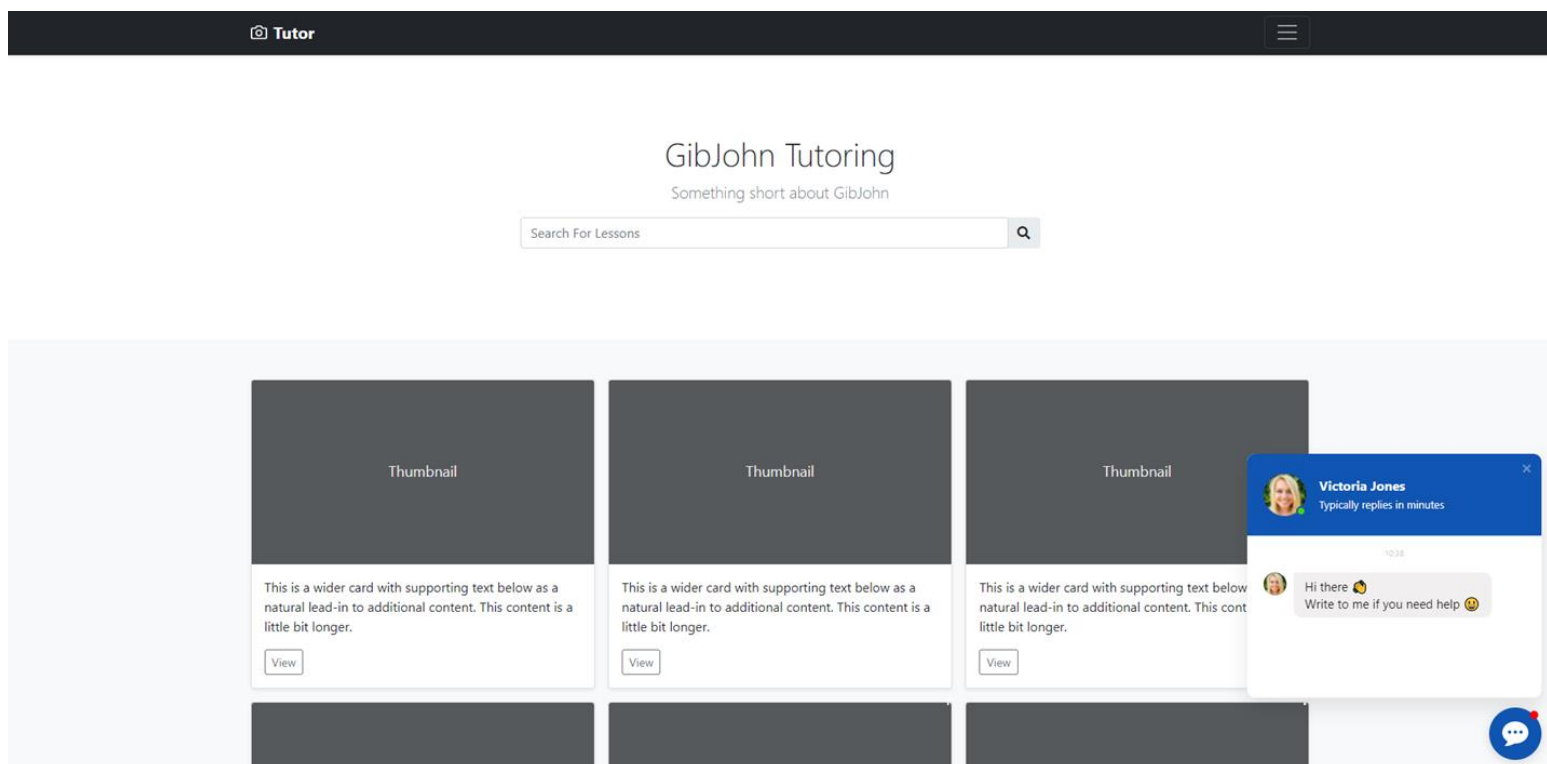
Sprint 1

Design

For my landing page of the website, I have gone for a dark theme as many students tend to be studying during the night and having a very bright background could strain their eyes. However, I will be adding a colour-blind setting or an ability to customise the colour scheme of the page.

I have decided to implement an album style for the cards that will display all the lessons.

I feel it looks the cleanest and very sleek, whilst displaying all the relevant information whilst not being confusing



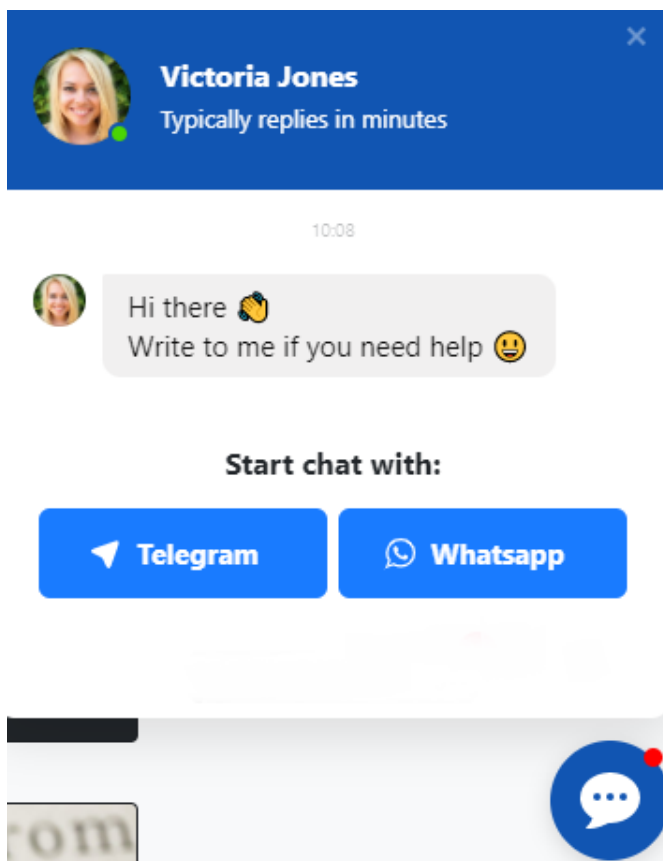
Instead of having a navigation bar like you would see on most websites I have decided to go for a drop-down menu that will give you access to some information about the company, settings menu to add colour blind settings, and some contact information for the company.



To do this I used some JavaScript to add the drop-down animation to the page

Development

I am planning to add a live chat feature that will allow a user to communicate with one of the tutors that is available, they will be able to ask questions and hopefully receive the answer they are looking for.



This is the design for the live chat I have come up with. You will be able to choose which type of messenger you would like to use to talk to the tutor.

Review

Overall, for sprint 1 I could have simplified it much more saving me more time for the other sprints however I am very pleased with the overall modern and sleek design of the page so far.

The use of the live chat box will improve the user experience drastically.

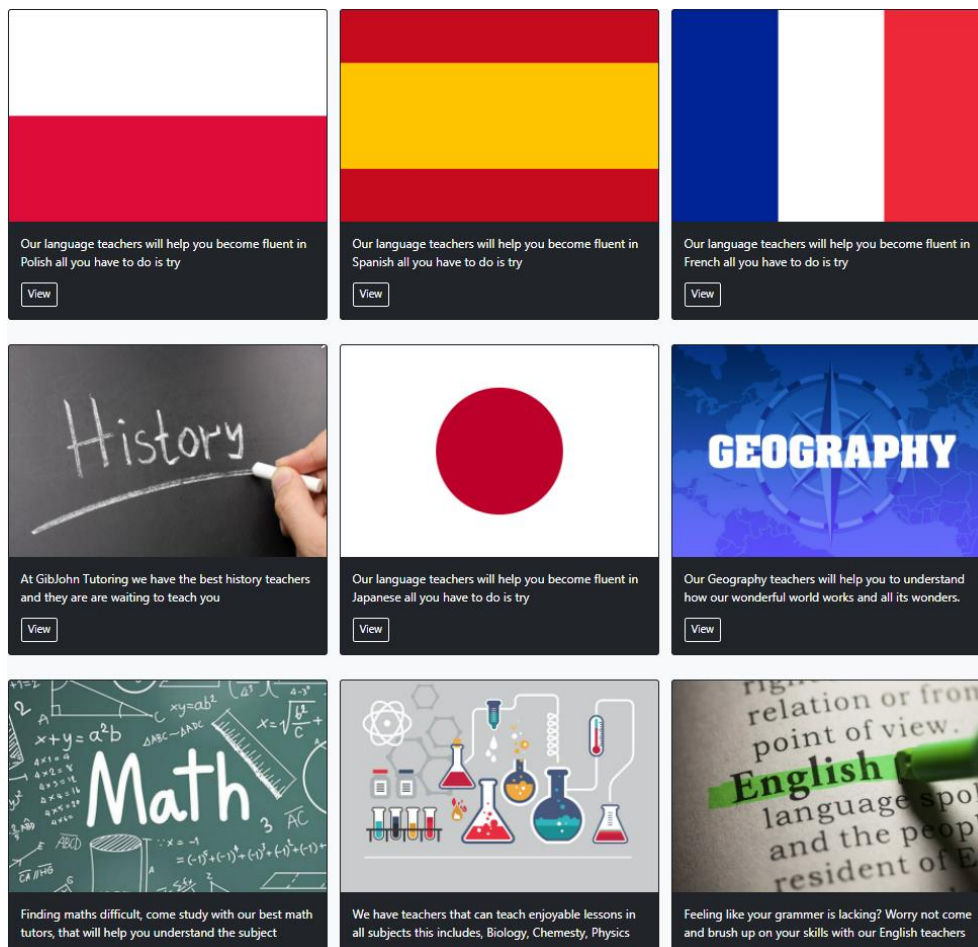
The use of the dropdown menu will also add some much-needed dynamic features to the page to keep the user's attention.

I also feel that I have kept closely to my original wireframe but with slight tweaks due to the limitations of coding in html as it can be quite finicky at points especially with correct placements of boxes.

Sprint 2

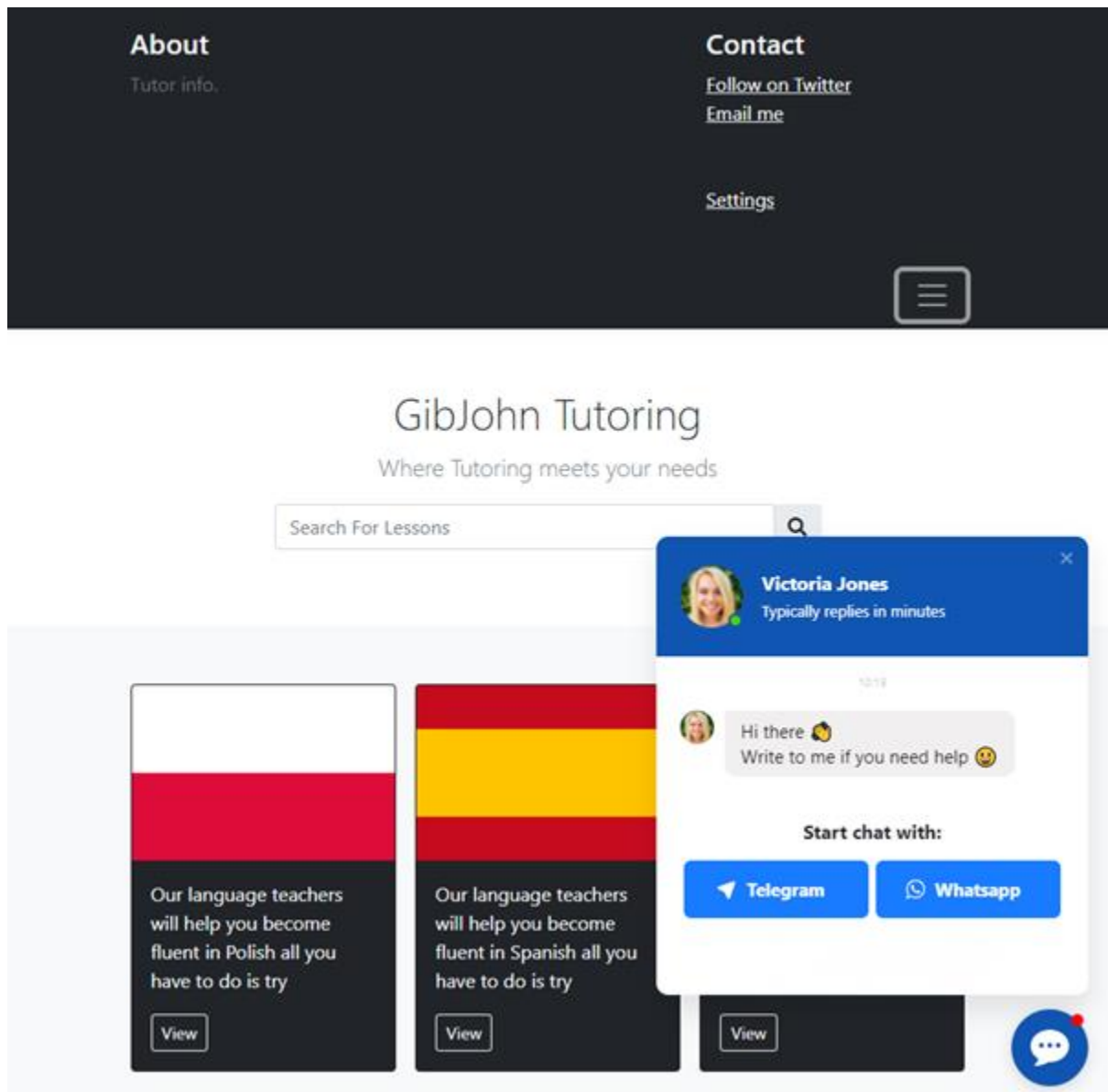
Design

In sprint 2 I have refined the album style cards and have added their corresponding images and their text detailing which subject they can view



Development

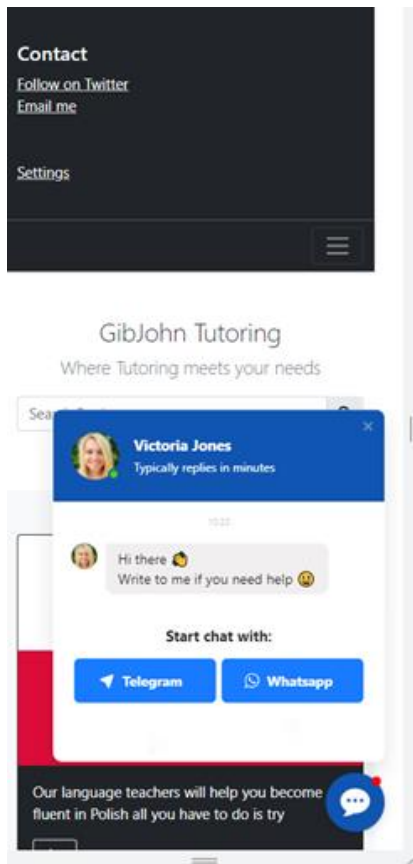
I have ensured that the website is responsive meaning if you have a smaller screened device the page will automatically adjust to the correct size allowing you to still access the entirety of the page.



Here is how it would look on a mobile device.

This is a very important feature as some students/clients could not have access to a desktop and rely on their phones for most of their work. Allowing the inclusion of everyone.

This also allows for the ability to study whilst on the go since it has mobile support implemented.



Review

I am very happy how the live chat turned out and is now fully functional compared to in sprint 1 where it was used as just a placeholder.

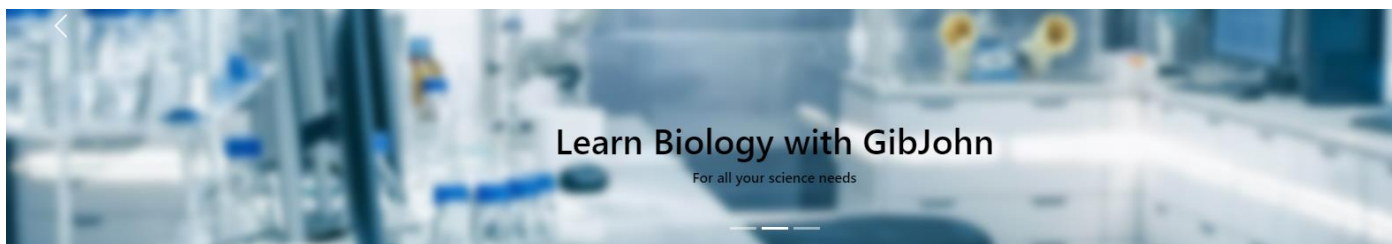
The new look of the landing page is a significant improvement as they all have been allocated pictures and corresponding text outlining what lesson they are.

I am also very happy with the responsive display when using the website on a smaller screened device meaning more people will be able to access it and from different browsers such as safari.

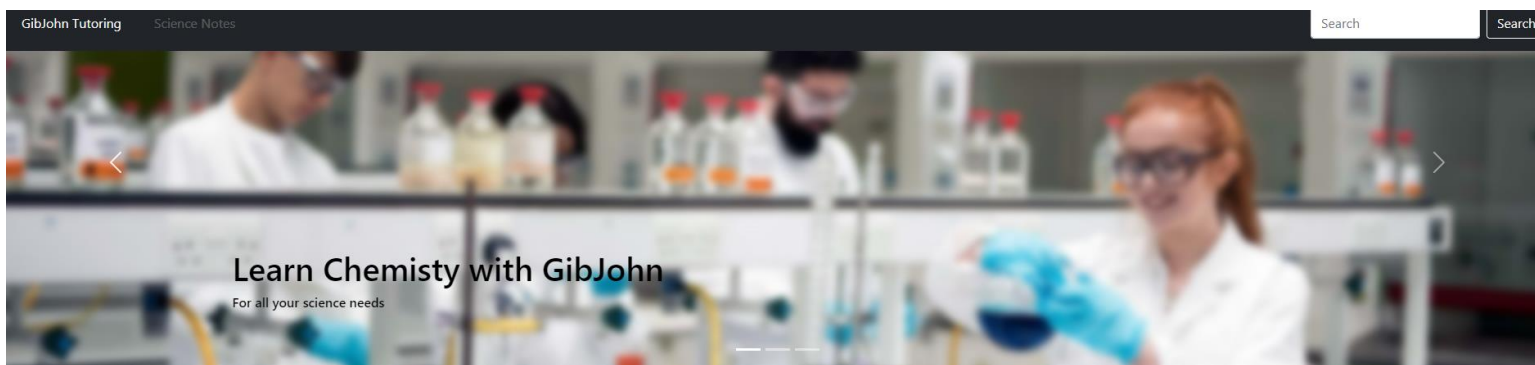
Sprint 3

Design

For designing the notes page for the science lessons, I decided to go with a new layout to make the page more interesting. For this page I went with carousel, that will rotate 3 slides, one being about biology, chemistry, and physics



Under the slides will be images displaying the different tutors for each of the subcategories of the sciences



Chemistry

Chemistry tutors for you

[View details »](#)



Biology

Biology tutors for you

[View details »](#)



Physics

Physics tutors for you

[View details »](#)

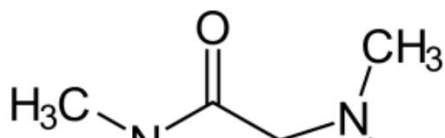
Scrolling down the page you will be greeted with some more information about what you could learn about in each subject for example biology you could be learning about growing bacteria in a petri dish.

Biology Growing Bacteria

Most bacteria collected in your environment will not be harmful. However, once they multiply into millions of colonies in a Petri dish they become more of a hazard. Be sure to protect open cuts with rubber gloves and never ingest or breathe in growing bacteria.

Keep your Petri dishes sealed in the zipper-lock bags for the entire experiment.

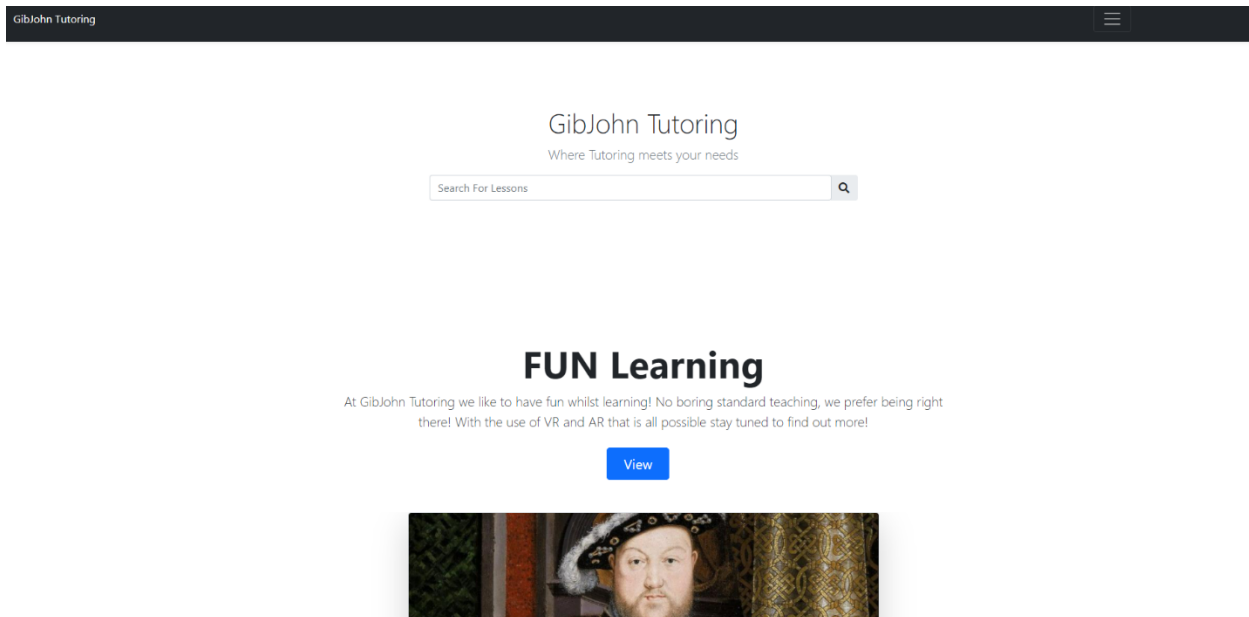
[View](#)



Chemistry How is caffeine bonded?

For the History notes I have decided to go for a hero layout which displays 3 separate boxes that will hold information, and an image if I wanted to.

At the top of page, I have gone for a similar design to the homepage.



This text box outlines what students could be learning if they follow the link provided below, I will try to implement some gamified learning and some form of quiz to keep their attention.

Little Willie

Little Willie was developed in 1915 by British scientists and inventors, and it was the first of the World War 1 tanks. It weighed 16 tons, measured 8 metres long and could travel at 3.2 kmh. One of the most widely produced World War 1 tanks was the Mark I.

[View](#)



D-Day

Omaha Beach is a landing area in Normandy, northern France, used by Allied forces in the WWII D-Day invasion. Today, the beach is dotted with the remains of German bunkers.

[View](#)



Scrolling down the page you will be greeted by two more boxes, both covering different subcategories that you could learn whilst taking history.

Development

During the development stage of sprint 3 I decided that implementing some form of gamified learning would be too difficult within my timeframe given to develop the project, so I have decided to only do a quiz.

To make the quiz I used a series of radio buttons that the user will be able to click and select their answer.

GibJohn Tutoring

History Quiz

What country lost the most lives in World War II?

- ☐ a : Soviet Union
- ☐ b : United States
- ☐ c : Great Britain
- ☐ d : Germany

What was the name of the B-29 bomber that dropped the first atomic bomb on Hiroshima?

- ☐ a : Slow But Deadly
- ☐ b : Enola Gay
- ☐ c : Puff the magic dragon

After World War II, Germany was divided into how many zones of occupation?

- ☐ a : 1
- ☐ b : 2
- ☐ c : 3
- ☐ d : 4

On which beach did the Americans run into a firestorm of resistance during the D-Day landings?

- ☐ a : Utah
- ☐ b : Juno
- ☐ c : Sword
- ☐ d : Omaha

In which battle did the Axis powers lose about a quarter of their total troops on the Eastern Front?

- ☐ a : Battle of Stalingrad
- ☐ b : Battle of the bulge
- ☐ c : Battle of midway
- ☐ d : Battle of berlin

How long did the Arab-Israeli War of 1967 last?

When a user gets the correct answer the question text will go green, however if they are incorrect it will display in red. At the bottom of the quiz, it will display how many questions the user got correct.

Where was the Bay of Pigs whose invasion sparked a world crisis in the 60s?

- ☐ a : Russia
- ☐ b : Mexico
- ☐ c : Cuba
- ☒ d : Germany

The Taliban were a guerrilla group in which country?

- ☐ a : Afghanistan
- ☐ b : Mexico
- ☒ c : Russia
- ☐ d : Vietnam

Muhammad Ali refused to fight in which war?

- ☐ a : Falklands
- ☐ b : WWII
- ☐ c : Gulf
- ☒ d : Vietnam

Submit Quiz

1 out of 10

Review

I am very happy with how the notes pages have turned out they are both very captivating and display the relevant information that the client has asked for and can display more lessons if the student was to search for what they were looking for using the allocated search bar.

The quiz turned out quite well I could have done more with the design however I was running out of time and had quite little experience with creating a quiz, but it is now fully functional.

One thing I wish I added to sprint 3 was some accessibility features such as being able to increase text size so people with difficulties seeing may find the website easier.

Review of product

Overall, I am very proud of how the entirety of the webpage has turned out, I feel that my product meets the requirements of the client.

Requirements:

- Live chat
- support to develop understanding in different subjects
- access to digital content

The overall design of the product is very sleek and modern, I could have used some more colours such as green or blues to give a more lively and friendly atmosphere to the pages.

Improvements

If I had more time one improvement to my product would have been more accessibility features such as being able to increase text size so people with difficulties seeing may find the website easier. Or to have the ability to select colour blind settings, to help improve the experience of visual impaired users.

Another feature that I would have added if I had more time would be gamified learning, for this I would have created a minigame using C++.

For time management with sprints, I could use a ticket system, where I would write everything I wanted to get done and work on them one by one.

Another thing that could have improved the project would have been to stay in touch with the client, as it is always good to stay in communication with the person you are doing the project for, as they could have had a different idea or a new feature that they would like to see implemented in the project.