**Business Context**

GibJohn Tutoring is a tutoring business that provides clients within person tutoring sessions, learning resources and learning support. I have been asked by a software company to develop a digital solution for GibJohn Tutoring that provides users learning tools and interactive resources on a variety of subjects.

**System Requirements**

* Processor: 1Ghz or faster CPU
* RAM: 1GB (2GB for 64 bit systems)
* Hard disk space: 16 GB
* Graphics card: DirectX 9 or later
* Display: 800x600
* Mobile device 1.3GHz dual-core processor 1GB of RAM iOS 6.1.4
* 1,440mAh battery

**Research**

There are many popular learning resource apps and websites such as BBC Bitesize, MyMaths, Khan Academy and many more.

BBC Bitesize gives users access to a variety of subjects and interactive revision resources such as in the form of games and tests on specific subjects to test your own knowledge. Bitesize can store previous test, which can be used to help with revision and show the users progress to keep them motivated. Bitesize also includes resources for different years of learning making it highly accessible for both younger students and older ones. Bitesize contains interactive learning games to make learning more fun and engaging for students and allows them to do things such as keep high scores and compete together in multiplayer. Bitesize provides all but one of the suggested client features – collaborative teaching and learning tools. A disadvantage to Bitesize is that all study and work must be done on an individual basis and doesn’t provide access to collaborative teaching tools which must be accessed from a separate site BBC Teach, this is inconvenient for teachers to have to juggle between the 2 sites. However Bitesize does provide many useful videos which could be used to assist in teaching and tutoring.

Graphical user interface, website

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Another learning resource site, Khan Academy provides users with hundreds of free learning tools and a wide range of different subjects and test preparation guides. Khan Academy is focused on revision and is very popular due to its easy-to-use UI and unrestricted access to all learning resources with no premium features.

Table

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Graphical user interface, text, application

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This is a screenshot from Khan Academy which could be a potential example of how GibJohn’s tutoring site could handle providing learning resources. Each day the user could complete one of the tasks, receiving achievements for each one they do to incentivise them to keep on studying. This could also help show what subject the student or tutor needs to focus on by using data from the daily tasks to determine which areas they are struggling with. The site could also allow you to retake the tasks to show what they have learned and allow the user and tutor to see the improvement.

**Web Usability**

The 5 components of web usability are:

* Learnability: How easy is it for the user to learn?
* Efficiently: How quick can users perform tasks?
* Memorability: How easy is it to remember the websites design?
* Errors: How many errors does the user encounter and how quickly can they be recovered from?
* Satisfaction: How nice does it feel to use?

Using these components enhances usability of a website and makes it more satisfactory to use. These principles will be used during the development process to help create a successful app.

A good homepage is vital to any businesses success as if a page doesn’t achieve what it is intended to do straight away most people will simply go to another site. Making sure the page gets across its point straight away and looks appealing is a key part of making a good website and helps to ground its identity among thousands of other similar sites. The most important parts of a website would be the title and subheadings so each page can be easily and quickly identified.

Navigation is also an important aspect of the site; it should be simple and flow naturally from action to action allowing for seamless navigation that almost feels natural to the user. This also benefits people with impairments and less technologically inclined users avoid having trouble using the site.

Adding additional features to the site can allow for more repeat visitors, one such way would be having a forum allowing for discussion amongst users and can also be used by developers to help improve and maintain the site via user suggestions.

The content of a website is by far the largest factor in gaining interest and repeat users. If the site doesn’t have content which appeals to users not many people will use it and opt to use a different site. When people first enter a site, they will scan it and look for something that gains their interest and often if nothing pops out, they will simply leave which is why it is important to have something about the site that engages and grabs the user’s attention.

**Description of the proposed system**

Everybody struggles with revision. Whether it’s trigonometry or biology its hard keeping up with all this new information being thrown at you. No matter if you’re just starting school or about to finish university, revision is the key to your academic success. GibJohn Tutoring has asked me to develop a digital system that will:

* Offer a multitude of learning resources
* Provide access to interactive teaching on a range of subjects
* Provide access to digital content
* Support assessment and monitoring of learner progress

GibJohn Tutoring wants to help its clients receive the highest education they can aim for. These are some reasons mentioned during interviews.

* People don’t know how to revise properly
* Uncaring or incompetent tutors
* Lack of motivation or effort
* Effort feels unrewarded
* Complex User Interfaces
* No simple application
* Lack of proper schedule, they don’t know how long to revise and how to go about revising

People who revise or get tutored regularly and track their progress made the following claims:

* Easier to achieve higher marks
* More efficient at revising and getting work done
* Motivating to know that they are improving

The key performance indicators (KPIs) and user acceptance criteria for GibJohn Tutoring offers tutoring sessions and revision materials for everybody and want a website for these specific requirements. GibJohn’s specific requirements for the proposed solution are:

* Must be simple and easy to navigate
* Compatible on desktop and smart devices
* Multiple different accessibility options such as text size, background colour, audio narrator etc.
* Advertisements could be used to monetise content without having the user directly pay to use the site

The website can be accessed on both mobile and desktop computers. The web interface has many functions including:

Functional requirement which defines specific behaviours and functions of a site.

Usability which determines how easy it is to use and learning by man made objects. To make the site easy to use, the user interface will be a big factor in ease of use and should be used to make information more easily accessible for the user.

Reliability which is a system’s availability and how long it takes the system to recover from a failure. This function is especially important as we are working with a lot of data and if a failure were to happen, a lot of important data may be lost.

Performance is how fast the system can perform such as sending and retrieving requests. As the site handles a lot of data, a high-performance system will be required to handle it all quickly and complete user requests in a reasonable time.

Supportability is how easy the program is to be maintained and updated. The program shouldn’t be made too complex as to both help it easier to use for users and to make it easier to be fixed and updated.

**Functional requirements:**

* Send users an email when they sign up to GibJohn Tutoring
* Track users time spent revising and track test scores
* Forum for community discussion
* External Interface

**Non-functional requirements:**

* Security measures to ensure user data isn’t stolen
* Performance and good response time from the site
* Fully functioning access across all devices e.g desktop, phone, tablet

**Link to:**

* Social media
* Revision videos
* Forums

**Accessibility issues to be considered:**

* Subtitles on videos
* On-screen keyboard
* Brightness settings
* Text font size
* Colour blindness options

**Hierarchy Diagram**

Diagram

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This app should provide GibJohn a simple and easy to use tool that helps grow their tutoring business. Customers have access to most content for free with a free account, however a premium account is available which provides access to all areas of the site.

**UI/UX**

I have decided to make the website minimalistic as not to distract users with a cluttered design. The site is customizable to an extent, allowing the user to change the background colour and change the size of the text on screen. The colours of the site will be simple and basic with a static background and bold button labels as to make the website simple and easy to navigate. This allows us to focus on making the site fast and professional looking rather than focusing all on detail but having no substance.

The main reason for this simplistic design was to make sure the site was easily usable by everybody, which began by using a simpler design. The bold button labels and static colour background are to make things more obvious for first time users to find their way around the site with commonly used visual cues such as the gear icon for the settings menu, a speaker for audio options etc. These decisions I believe will make for a good overall design for the site but are easily modifiable in the future due to the simplicity of the sites design. Feedback could be gathered from the planned forums feature to gage how people like the look and feel about the site and further changes could be made based on the responses.

Users would be given a daily test which has been created using data from their previous revision sessions to help them improve on subjects they struggle with the most. Videos that have been created by tutors will also be provided to ensure all the information being displayed on the website is verified and accurate.

All information put on the site will be from verified sources and tutors as to not spread misinformation. If any of the information on the site was wrong, it could lead to GibJohn getting a bad reputation and lose profits or potentially go out of business.

Users can view different tests for all the different subjects and track their scores on these tests. Users also gain achievement points for completing and improving their scores on these tests which may keep them returning to the site and potentially promote it to other people.

The website needs to be secure to prevent data breaches and secure users privacy and data. Users will be required to use an advanced password and can also enable 2 factor authentication to ensure the safety of their accounts. Passwords will also be encrypted to prevent data interception.

When accounts are created, they will have to be verified to ensure the account was not created by a bot. The verification process will contain validation rules to prevent fraudulent account creation such as checking emails are in the correct format, making sure the phone number given is real (can also send a special pin to that number via text) and asking for the user to verify the account through their emails to prevent fake accounts.

**User Requirements**

GibJohn has requested my company to develop a digital system for their tutoring business. GibJohn Tutoring provides personal tutoring sessions and access to learning resources to everybody and requires a website to have these specific user requirements:

* Provide interactive teaching on a variety of subjects
* Provide access to digital content
* Support assessment and monitoring of learner progress
* Collaborative teaching tools
* A learning reward system

The target user audience is anyone, male or female as this site is used for learning it has no true target audience and can be used by everybody. Access to revision tools will be helpful for people doing exams such as high school and college students. The website can be used on both desktop and mobile making it versatile and convenient. The mobile website will look slightly different due to the smaller screen size, compressing the different buttons and tabs to be able to fit on the screen without losing visual clarity.

The user profile area will be secured by password as to protect the privacy of the user and comply with legal requirements.

Users can customize their revision and preferred subject guides allowing the user to focus on certain subjects or allow the algorithm to choose these subjects for them.

**Functional Requirements**

No. 1

Features: Users can make accounts with usernames and passwords

Priority: High

Justification: This will allow users to book sessions with tutors, view their revision and work and track their test results

No. 2

Features: Users can login to their accounts

Priority: High

Justification: This is necessary so the users can view their own profiles and track their results

No. 3

Features: Users can use the home page

Priority: High

Justification: Allows users to see new content, view available tutors, track progress etc.

No 4.

Features: System should contain information about a variety of different subjects

Priority: High

Justification: Makes the website trustworthy and reliable

No 5.

Features: System sends a verification email after signup

Priority: Low

Justification: Makes sure the user has verified their account and has all the information they need

No 6.

Features: Discussion Forum for users

Priority: Medium

Justification: Allows users to communicate with each other and helps developers improve the website by posting issues/suggestions

No 7.

Features: Multi device functionality

Priority: High

Justification: Users can use the site across multiple devices with the same functionality as the desktop site

No 8.

Features: Past data analysis

Priority: Medium

Justification: Analyses past test scores of the user to show how much they have progressed

No 9.

Features: User Authentication

Priority: High

Justification: Authenticate the user by checking the email address and ID

No 10.

Features: Sharing and Social Media functions

Priority: Low

Justification: Allows users to share pages from the website to others and on social media

**Non-Functional Requirements**

No 1.

Features: The System should be reliable

Priority: High

Justification: Without a reliable system, the site will not garner much use or attention

No 2.

Features: The system should be accessible by all

Priority: High

Justification: Anybody should be able to access the site as this means the site will be advertised and used by more people

No 3.

Features: The system should be secure

Priority: High

Justification: If the system is not secure a data breach could occur causing the public to lose trust in GibJohn and could cause a lawsuit

No 4.

Features: The system should always be available

Priority: High

Justification: If the system isn’t available at all times people will use another site as they cannot access ours

***Activity B***

**Visual/Interface designs**

**Login page**

Graphical user interface

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Graphical user interface, application

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Description automatically generatedA picture containing chart

Description automatically generatedGraphical user interface, text

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**Front End Needs**

* Make the site stand out more
* Icons to make finding things easier for the user

**Back End Needs**

* Security protocols like encryption to prevent data interception
* Data storage

**Security and data analysis**