

Occupational Specialism

Task 1 Proposal

Contents

Activity A (i)	2
Executive summary.....	2
Introduction.....	2
How has technology improved education?	2
Research:	3
Existing Hardware and software	3
Hardware in use in education:	3
Software in use in education:	7
Emerging technologies.....	13
How digital solutions could be used to meet different user needs.....	16
Industry guidelines and regulations	17
Activity A (ii)	18
Proposal.....	18
Executive summary	18
Business Context.....	19
Risk assessment	19
Functional and non-functional Requirements	20
Decomposition of problems.....	21
KPIs and user acceptance	21
Search traffic (SEO)	21
Keyword ranking.....	22
Social media traffic	22
My proposed solution	22
Justification.....	23
How my solution meets the requirements of the user and client	23
How potential risk will be dealt with	23

Activity A (i)

Executive summary

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

Introduction

In preparation for developing a digital solution for the client I have been asked to carry out research. I will be researching

- How hardware and software are used within the education sector
- Newly Emerging technologies
- How digital solutions could be used meet user needs
- Industry guidelines and regulations that I will need to follow

How has technology improved education?

In many ways, technology has profoundly changed education, for one technology has greatly expanded access to education, as previously Individuals had to travel to canthers of learning to get an education. However today, massive amounts of information (books, audio, images, videos) are all available at one's fingertips through the Internet.

This comes to many advantages and disadvantages.

One advantage being opportunities for communication and collaboration have also been expanded by technology. Traditionally, classrooms have been relatively isolated, and collaboration has been limited to other students in the same classroom or building. Today, technology enables forms of communication and collaboration undreamt of in the past. Students in a classroom in the rural areas.

A disadvantage of technology within the education section would be misleading information, websites have become more focused on getting better rankings than providing the information they need to. Many sites are putting up misleading information online to earn more visits, even if the information is not accurate.

Another distraction from technology within education is that it can be very distracting, Technology has led to the rise of a lot of devices that can access the internet. Students are having a hard time trying to focus most of the time.

Research:

Assumptions

I have assumed that once I have created the website locally it will then need to be put on a domain that the company will need to provide later on so new and existing customers may access the website to its full.

Existing Hardware and software

Hardware in use in education:

Interactive Whiteboards

An interactive whiteboard is a display, often with similar measurements to a traditional white board/blackboard, however, is connected to a computer and a projector. The computer can be manipulated with a finger or pen directly on the surface of the board.



Advantages:

Interactive learning

Interactive whiteboards allow children to interact with the learning material. They become a part of the lesson and can even teach each other. Their understanding of the subject is seen through touching, drawing, or writing on the board. Educational games can be played by entire classrooms.

Flexibility in the classroom

Various media types can be displayed on a whiteboard, allowing for multiple uses for the whiteboards depending on which subject the teacher is teaching.

Whiteboards even allow integrated technology such as cameras and even microscopes allowing an even greater range of teaching and interactivity within the classroom.

Internet access

Whiteboards are also connected to the internet which gives you a resource of online tools and information. Teachers have access to various sources to enhance and support their lessons with video, articles, images, learning tools, and much more.

Disadvantages:

Problems with lighting

One issue with interactive whiteboards is the conditions needed to properly view the contents being display, if the sun or the light is in the wrong spot glare may appear on the whiteboard obscuring what is on the screen, this may disrupt some of the student's ability to read what is on the board thus making it harder for them to take



in the information being provided.

However, some newer model of whiteboards has anti-glare measures to ensure that this does not happen, this is a must have when teaching however the newer boards can be very pricy.

Preparation before lesson

interactive whiteboards might help teachers to convey information and explain concepts in innovative ways. However, designing and preparing lessons for use with these devices is extremely time-consuming because teachers need to research, evaluate, interpret, install, and manoeuvre the software programs that allow the devices to be used.

High cost

Perhaps the greatest disadvantage of using an interactive whiteboard is their high initial cost, which can range from £1,500 on the very low-end to £6,500+ each, depending on the model.

Whiteboards also require regular troubleshooting, technical support, and maintenance, especially for the more advanced types of interactive whiteboards, also incur major costs. All these factors adding to the high price tag of interactive whiteboards, this mainly affect schools with limited budgets, small businesses, and non-profit groups.

Virtual Reality Headsets

Students can use VR headsets with specific apps; these headsets even work well with regular videos filmed by 360-degree cameras. While the cost of headsets used to be beyond some budgets, more affordable options have recently become available.



VR changes the role of teaching from content delivery to content facilitation. Through a range of VR experiences, including virtual field trips and art and science explorations, students are engaging with new information rather than just being fed static material.

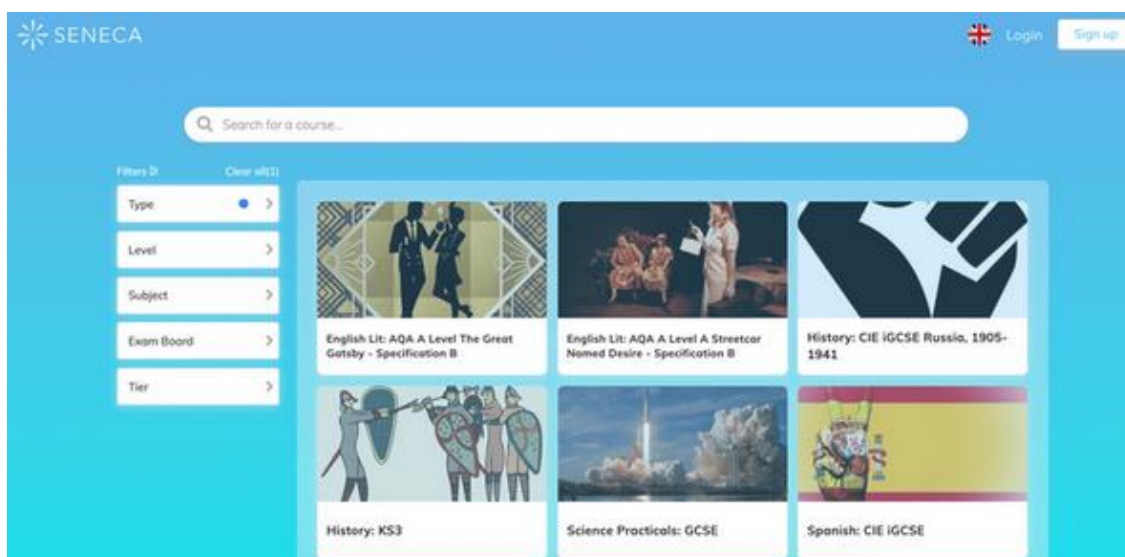
For example, VR is helpful when you are attending a medical training course. In detail, VR creates a chance for students to experience real-world surgeries in a low-risk environment.



Software in use in education:

Seneca

Seneca is a based revision website that allows you to pick from 1000+ coursers ranging from KS2, KS3, GCSE & A Level specification based on exam board specifications.



Seneca generates questions based on the course you are taking; Seneca has been proven to help students remember questions that they could be asked on their exam based on previous tests.

Bile is an alkaline substance that neutralises acid from the stomach in the small intestine.

8.2 Which body organ produces bile?

1 mark

0 / 1

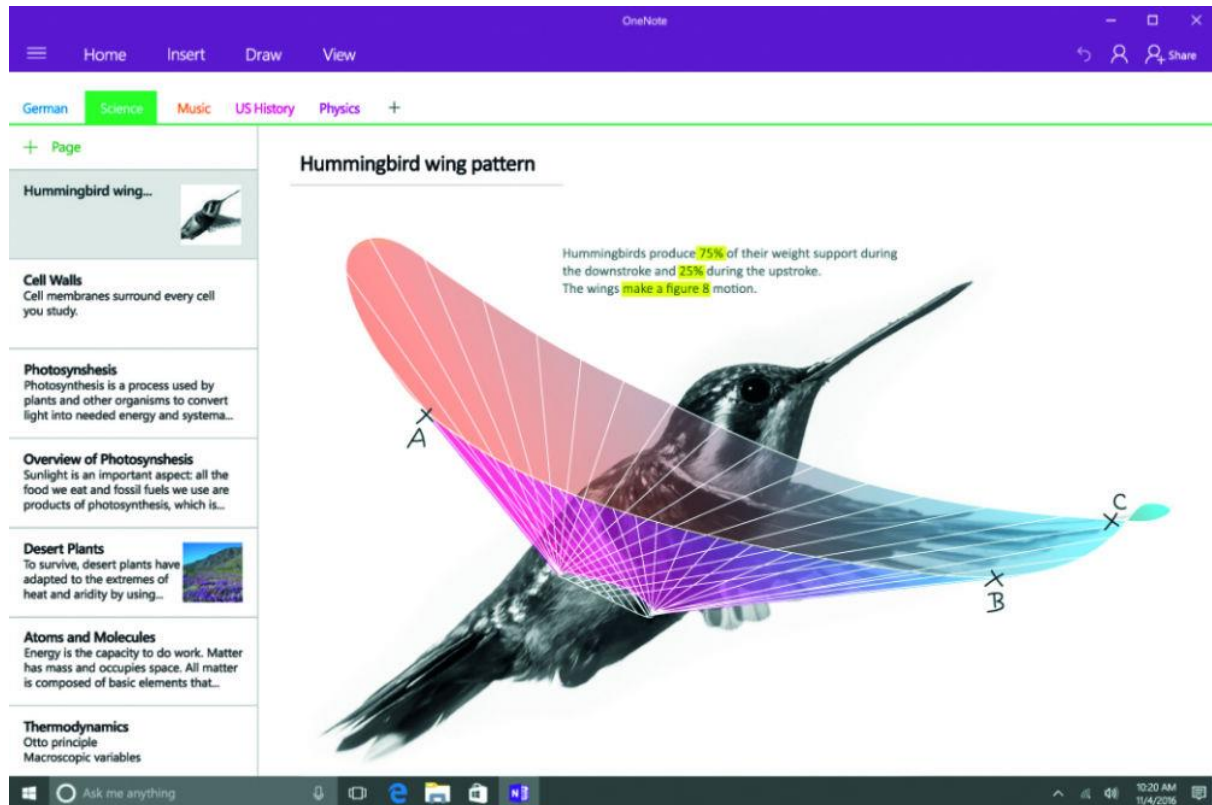
Type your answer here...

Feedback?

Seneca is free to everyone and can be accessed from any place and any time.

Office 365

Office 365 gives you a cloud version of Word, Excel, and PowerPoint, you can work on a document on the move on any type of device, at any time. It is compatible with any operating system as it's a web-based product.



Office 365 enables teachers to put the learning into the students' hands. With tools like Office Mix and OneNote Class Notebook one can give the students the tools to teach themselves, whilst being monitored by the teacher.

Students and educators at eligible institutions can sign up for Office 365 Education for free, including Word, Excel, PowerPoint, OneNote, and now Microsoft Teams, plus additional classroom tools.

Creative software – Adobe creative cloud

Adobe Creative Cloud is a set of applications and services from that gives subscribers access to a collection of software used for graphic design, video editing, web development, photography.

Schools and students are eligible to use the service for free.



Photoshop makes it easy to design standout graphics for science fair posters, social studies infographics, maths flashcards, and more.

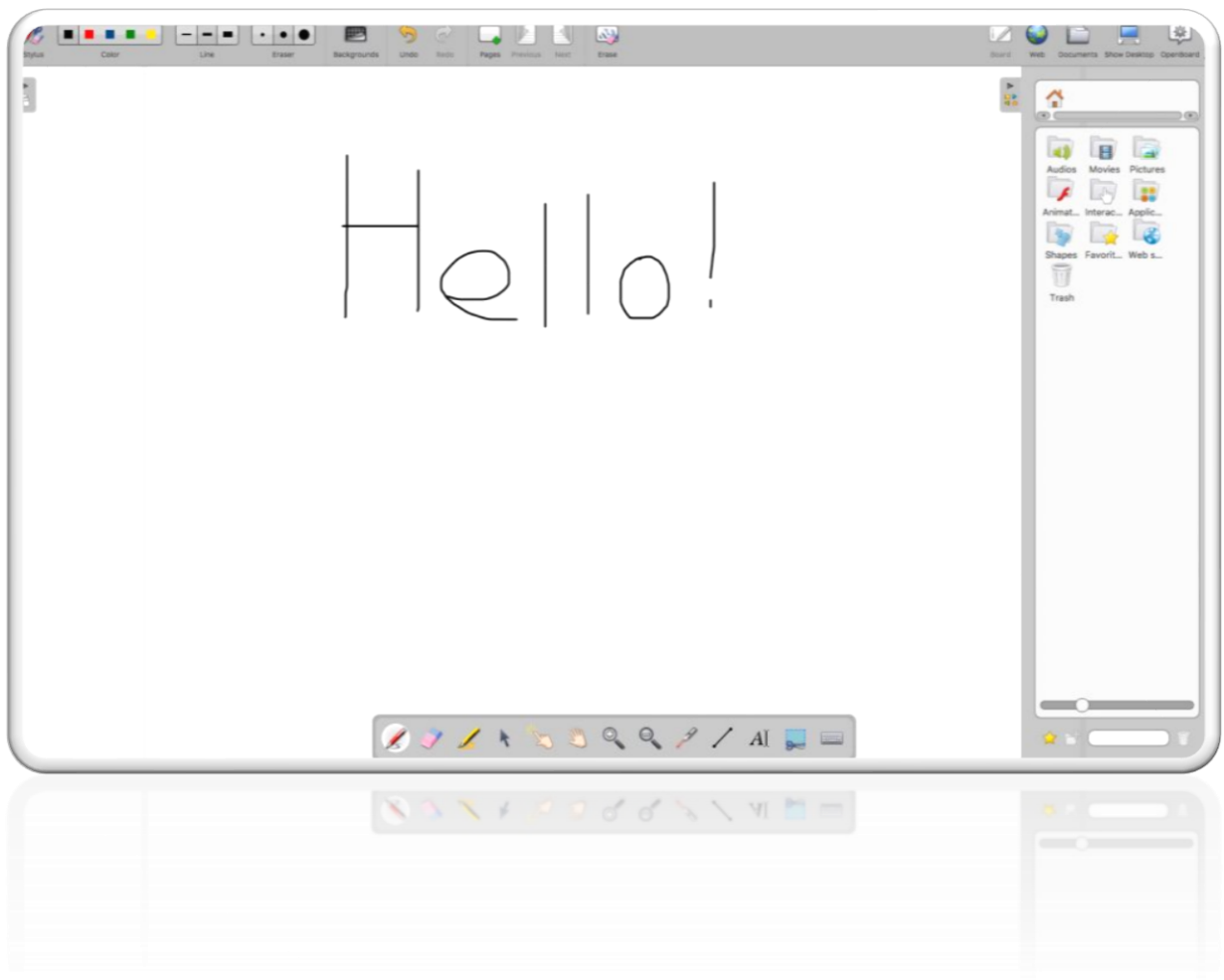
Adobe promotes the use of creativity, self-expression and teaching the very useful digital skills that they will need.

SMART Learning Suite [interactive whiteboards]

The SMART Learning Suite is a subscription service by SMART, (one of the main providers of interactive whiteboards) that includes software that integrates a variety of educational technologies to elevate teaching and learning through game-based learning, formative assessments, and student collaboration, within and outside the classroom.

A subscription to SMART Learning Suite includes Lumio, for engagement everywhere on student devices, and SMART Notebook, for dynamic lessons on your interactive display.

SMART Notebook software, which can run on Windows and Mac computers, SMART Notebook software enables teachers to create and deliver interactive lessons on their SMART displays.



SMART Notebook includes a large collection of lesson creation tools, subject-specific features and content, and endless ways to wow students at any grade level.

Zoom

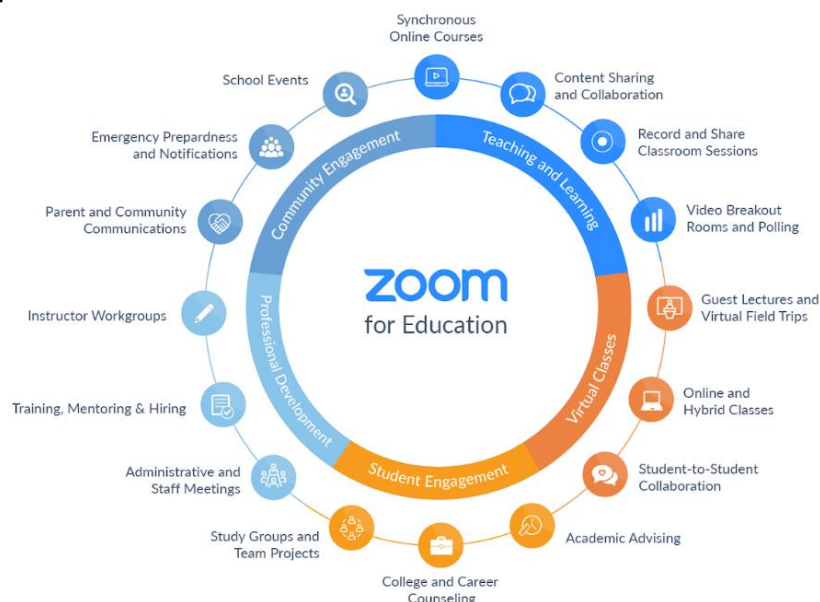
Following the events of covid, Zoom was heavily implemented into the education sector since many had to isolate at home and could not attend school, Zooms allow remote teaching, by implementing a video call system that allows teachers and students to communicate over the internet, this allows for face-to-face communicate all the way from home.



By ensuring your students have a camera or joins through their mobile devices teachers and students can talk to each other just like being in class.

However, this does come with one problem, some students may not have access to phones or a computer and will not be able to connect, so the school may have to provide some for the students.

Zoom also allows One-click content sharing, annotation, digital whiteboarding, Breakout Rooms, polling, reactions, and high-fidelity music mode encourage participation and student engagement.



Emerging technologies

Augmented reality

Augmented reality blends technology with real time, with the use of google glass and other AR-enabled devices students can explore the world without having to hold up a device.

AR could provide additional information layered over what they see through the lens.



Google glass could also be used to teach from another location, with the hangout feature on the glass students will be able to see the teacher as if they were in the same room.

Virtual field trips are also possible with AR, students may be able to see supplementary and interactive information appearing on historical artifacts for them to get to know more about its history.

3D printing

3D printing has changed the manufacturing world for the better. Many manufacturers use 3D printing or additive manufacturing technologies to produce airplane parts, prosthetic limbs, and even 3D-printed medications.



In education, 3D printing technologies facilitate improved learning, skills development, and increased student and teacher engagement with the subject matter. Furthermore, 3D printing sparks greater creativity and collaboration in solving problems.

Students can use 3D printers to better understand themselves with in person models for example in:

Biology – pupils can print out models of cells or organs. Instead of dissecting a frog in class.

Art and Design – 3D printing is increasingly being utilised in the creative industries. It allows pupils to create objects with textures and geometries.

Cloud computing

Cloud computing seeks to virtualize the classroom. Schools can now leverage on cloud technology and set up online learning platforms for students to log on and attend classes in a virtual environment.



Students may just need an electronic device to access all their homework and all other learning resources in the Cloud. This means no more lugging heavy textbooks to school.

Gamified learning

Many students play games, watch YouTube and much more, meaning their attention span has lowered drastically and will need more stimulating to keep their focus. This is where gamified learning comes into play.

The EdApp integrates mobile microlearning, combined with gamification, puts modern workers in the best position to learn. That's why companies who use EdApp's platform have experienced increased completion rates, increased engagement in training, and increased retention.



Prizing and real rewards

The EdApp platform allows you to provide real rewards to employees. Example rewards include gift cards, free coffee, or food vouchers from Uber Eats, increasing motivation to learn and complete the course for prizes and rewards.

How digital solutions could be used to meet different user needs

By integrating Zoom within cloud computing will allow for us to work remotely whilst still having face to face communication for tutoring, we could also use gamified learning to keep the attention and improve interactions with the client.

By having cloud computing it means that there will be no need for any books or paper as all the information will be online and easy to access, this will also help to reduce the amount of paper waste and hopefully decrease the number of trees that will be needed to be cut down.

Industry guidelines and regulations

GDPR

GDPR is a law that was put in place to protect the personal information of individuals.

GDPR in schools meant that the school has a much greater accountability for the data they collect and must be kept securely, failure to do so could result in:

- Hefty fines.
- Warnings and reprimands.
- Temporary or permanent bans on data processing.
- Rectification, restriction, or erasure of data.

Digital right act

The UK needs an UK education and digital rights act to govern the access to education information and records by commercial companies.

Consistency and confidence will be improved across the education sector with a firm framework for the governance and oversight of handling children's personal confidential data.

Disclosure of Photos and Videos of Students under FERPA and ISSRA:

A video may become part of a student's school record if it directly relates to a specific student. Other students that are in the video but are not involved are considered "set-dressing" and will not have the video added to their student record.

Copyright

Children have the same copyright rights as any other creator. (i.e., lesson plans, materials created for classrooms) are the property of the employer (i.e., the school district).

Computer Misuse Act

The Computer Misuse Act 1990 protects personal data held by organisations from unauthorised access and modification). The act makes the following illegal:

Unauthorised access to computer material. This refers to entering a computer system without permission (hacking).

1. Unauthorised access to computer materials with intent to commit a further crime. This refers to entering a computer system to steal data or destroy a device or network (such as planting a virus)
2. Unauthorised modification of data. This refers to modifying or deleting data, and covers the introduction of malware or spyware onto a computer (electronic vandalism and theft of information)

3. Making, supplying, or obtaining anything which can be used in computer misuse offences
4. These four clauses cover a range of offences including hacking, computer fraud, blackmail, and viruses. Failure to comply with the Computer Misuse Act can lead to fines and potentially imprisonment. (BBC, n.d.)

Activity A (ii)

Proposal

Executive summary

Produce a detailed proposal for a digital solution that you would develop to meet the needs of:

- The client (GibJohn Tutoring)
- Existing and potential users

Your proposal should provide a rationale for the solution you are proposing and include:

- Business context
- Functional and non-functional
- Decomposition of problems
- Kips and user acceptance
- Description of proposed solution
- Justification of:
 - How the recommended solution meets the needs of the client and users
 - How potential risks will be mitigated
 - How relevant regulatory guidelines and legal requirements, in relation to software development and the education sector, will be addressed

Business Context

Risk assessment

Can the project be completed within the time frame?

I believe that the project can be completed within the time frame, however if a staff member or myself became unable to work then the project may fall behind schedule and will most likely have to be delayed

I recommend using a Ghant chart to keep a tight time schedule so everybody knows what they should be working on and when.

As a company do, we have the resources to complete the project?

I believe that the company does have enough resources, such as money, time, software needed for development.

However, if there is something else needed, such as a new software or a new member of staff with a required set of skills then the company will have to provide it if not you may run the risk of not being able to complete the project

Is there enough staff with the required skill?

Some areas of the project may require certain skills such as a difficult programming language to code within and will require a member of staff with expertise in that area, hiring someone with desired skills tend to be expensive.

If certain skills are not met the productivity of the project may slow as a member of staff will have to stop working on what they were doing and learn the new language and may have to adjust and adapt to their new environment

As a company is there any licensing for software or any legal obstacles?

As a company you may face some legal obstacles, such as copyright infringement this could set the project back due to its nature and will most likely put the project on a hold once the company has proven that they have not copied or plagiarised any work they may resume the project.

Another legal problem the company may face is how many hours a week a member of staff is working, due to the time frame a manager may try to enforce that staff works longer hours. However, if a member of staff works over 48 hours a week the company could face lawsuits.

When it comes to licensing it can be very expensive to provide a licence to each member of staff or to those who may need it, meaning if the company is tight on budget and cannot provide enough licences there may well be a large delay, as some staff will have to share a licence reducing productivity.

Is this project feasible?

Personally, I do think this project is feasible,

Following my proposed plan and by ensuring that I have enough time to add all the features I intend to add, I will be heavily sticking to a Gantt chart or a similar sprint system to ensure that I can meet the required deadline.

Using the sprint system, I can easily get the required functional elements implemented then start working and further developing and improving what is already there.

From that point on I can home in on the design of the webpage.

Given that the time restraint is 30 hours I do think this project will be manageable within that said deadline.

Funding wise I think the project would not cost too much to build or maintain, by following through with this project I can see a strong outcome that would not only boost the customer's experience but could improve the company, due to the interactivity and inclusivity of the new website.

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		

Non-functional

#	Requirements	How will I accomplish?	Acceptance
1	Website loads quickly	To do this I will ensure that my code is optimised	Website should not take more than 3 seconds to load when a user clicks on it
2	It performs well under stress		
3	No bugs/errors or very little on release		

Decomposition of problems

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

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

KPIS and user acceptance

What is KPIS (Key performance indicators)

KPIS also known as key performance indicators allow you as a business to track your performance and marketing activities. KPIs can be related to any part of your business, from employee performance to sales.

Why should you track them?

To have a better idea of your marketing performance, and therefore attain your marketing goals.

Examples of KPIS that we can use to help the business grow

Search traffic (SEO)

Search traffic determines how many total visits, unique visitors, organic traffic, website visitors traffic sources, page views per session, top pages, and various other KPIs related to the traffic coming to your site from Google and other search engines.

Keyword ranking

This KPI informs you where your site ranks for your most valuable keywords and phrases.

Social media traffic

Social media traffic metrics cover all the same things as SEO traffic however focuses on traffic from social media platforms.

User Acceptance

As a user, I need to be able to access learning resources, so that I can develop an understanding in a subject.

As a user, I need to be able to have access to digital content, so that I can be encouraged to learn more subjects

As a GibJohn tutoring staff member, I need to be able to give support to patience to help them develop an understanding in the subject.

As a GibJohn tutoring staff member, I need to be to support, assess and monitor the progress of a patient, so that I can help create the best plan for them.

My proposed solution

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.

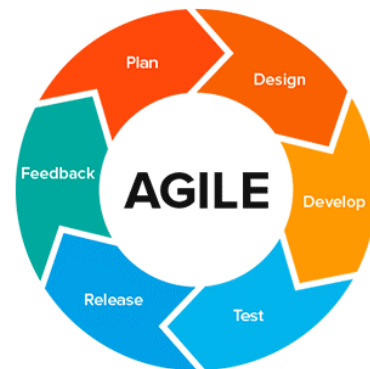
Requirements:

- 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 similar to zoom.

I may also try to add some Gamified learning to do this I could add a button that will take you to another part of the website where you will be able to play a learning game.



Justification

How my solution meets the requirements of the user and client

- Provides learning resources to the users
- Will have live chat for users to use to enquire about more learning materials or ask if they are confused or just need help
- Provides learning and teaching tools
- Gives support to help understand different subjects

How potential risk will be dealt with

- Insufficient amount of budget. - Establish the scope before beginning work, pay a lot of attention to project planning and constantly track and measure the progress
- Insufficient amount of time/poor management of time. - Plan time management training for manager to help with time management.
- Large competition in the market.
- Lack of knowledge. - Plan training course to help improve the skills and abilities of your staff members
- Chances of Push backs.
- Possibly a Bad launch.
- Release a product that is unfinished - Plan leadership training for manager