# Summer 24: Task 1 – Proposal

## Proposal report

I will be creating a project for the client () which is a digital solution that will meet their required needs. They have provided several requirements which the end-product must fulfil.

We have decided that the best way to produce this solution is through a web application. They are a modernized way of producing desktop and mobile compatible applications.

**--- ADD MORE DETAIL ON WHAT PROPOSED SOLUTION IS**

**--- DISCUSS MORE ABOUT EMERGING TECH AND LINK TO SOLUTION**

**--- DISCUSS MORE ON FEATURE IMPLEMENTATION (I.E. EDUCATIONAL/RESOURCES)**

**--- LINK LEGISLATIONS & GUIDELINES TO SOLUTION**

**--- DISCUSS MORE HOW SOLUTION MEETS BUSINESS NEEDS**

## Project requirements

The project has both functional and non-functional requirements that are necessary to solve the problem at hand. I will be formatting the requirements in a table and will also decompose each problem into smaller sub-tasks.

The index is simply a short-form identifier for each task.

Priority refers to the urgency of the task, in order of:

* HIGHEST
* HIGH
* MEDIUM
* LOW

### Functional requirements

#### Main tasks

|  |  |  |  |
| --- | --- | --- | --- |
| Index | Name | Description | Priority |

### Non-functional requirements

|  |  |  |  |
| --- | --- | --- | --- |
| Index | Name | Description | Priority |

## Risks and mitigation

Throughout the project’s lifetime, there will be a multitude of risks. We must mitigate against these and reduce the risk as much as possible of there being duplication.

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| --- | --- | --- |
| Index | Description | Mitigation |
| 1 | Bugs – users will find bugs whilst using the application. | To mitigate against bugs, we will do extensive testing (both automated and manual) before releasing the project to production.  In the case that a user finds a bug in production, they will be able to report it to us. |
| 2 | Heavy traffic – during the applications uptime it is likely to experience higher loads of traffic as it gains more traction. |  |
| 3 | Users can’t find what they need | Firstly, whilst still in development, we will conduct testing to mitigate against this. We will do this by giving the product to people who have never seen it before and asking them to navigate around the site as best as they can.  Having a fresh mindset is important, as a developer of the application will automatically know where everything is.  Additionally, we will implement a search function to the site, which will give users the ability to search through everything they need. |
| 4 | Users can’t remember the details they require to log in | Users are required to signup using their email address, so if a user does forget their email, they will be able to request a password reset to the email they used to register their account. |
| 5 | Cyber attacks | I will go over cyber-attacks in detail in the [Security section of this document](#_Security). |

## Security

The project is likely to be subject to many different cyber attacks over its lifetime. I will state the name of each attack, a description of what it does, and then a prevention method we can use to stop this from happening.

|  |  |  |
| --- | --- | --- |
| Name | Description | Prevention/mitigation |
| SQL Injection | SQL Injection is where a user abuses an unsanitized input field. They can put SQL code into the field and when submitted the code will execute. This can allow a user to bypass login systems and other private areas of an application. | We will properly sanitize every single user input so that nothing like this can happen. We will input the proper checks so that invalid data is rejected and let the user know. |
| (D)Dos attacks | (D)DoS stands for (Distributed) Denial of Service attacks. The “distributed” is in brackets because DoS attacks can come in two forms: DoS and DDoS. A DoS attack is where lots of traffic is sent from the same location to try and bring a service offline for other users (making it unavailable and unusable).  A DDoS attack is worse, as it distributes the traffic into multiple locations. This makes it impossible to track which traffic is legitimate and which is not. | With a standard DoS attack, we can detect where the influx of traffic is coming from and block that specific IP address from sending traffic for a certain amount of time. Even then, the attackers can change their IP address.  DDoS attacks cannot be stopped, and only really mitigated. We can use popular companies such as Cloudflare or AWS Shield. Alternatively, rate limiting could be used to limit the amount of traffic that is sent to our servers. |
|  |  |  |

## Legal requirements

As first outlined in the research of this project ([seen in the Appendix](#_Guidelines_and_regulations)), there are many legislations which we will have to be mindful of whilst developing this digital solution.

Applicable to every legislation, throughout the entirety of the project we will be making sure that we follow them in every way possible. The “Our actions” column outlines a few ways we will do this per-legislation.

|  |  |  |
| --- | --- | --- |
| Legislation | Meaning (summary) | Our actions |
| [Data Protection Act (2018)](https://www.legislation.gov.uk/ukpga/2018/12/contents) | Aligns with GDPR and incorporates UK-specific regulations.  Protects against; misuse of personal information, unauthorized access/sharing of data, loss/theft/exposure of sensitive information. | 1: We will be hashing and salting all passwords sent to the database to be saved. This ensures that if someone does manage to gain access to the database, they won’t be able to read any of the passwords.  2: When users submit forms such as registrations or logins, we will make sure to use the correct HTTP method that will not show the data in the URL (which is POST). |
| [Equality Act (2010)](https://www.legislation.gov.uk/ukpga/2010/15/contents) | Protects individuals from discrimination, harassment or victimization.  Characteristics that are protected: age, disability, gender, marriage, pregnancy, race, religion, sex, and more. | 1: We will be aiming to meet the [Web Content Accessibility Guidelines (WCAG 2.1)](https://www.w3.org/TR/WCAG21/), as it is a widely accepted standard for web accessibility.  2: We will be adding an accessibility widget which will allow users to make changes to the site however they prefer. For example, font size/family, colour scheme, etc. |
| [Health and Safety at Work etc. Act (1974)](https://www.legislation.gov.uk/ukpga/1974/37/contents) | Governs workplace health and safety.  Ensures health and safety of all employees at work.  i.e. Safe equipment, environments.  Regular risk assessments, etc. | 1: The information on the website must be checked regularly to make sure it is factual and up to date. People may use the information on the website, so it must not contain anything harmful. |

## Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs) will be used to track performance of the digital solution. They are vital to inform decision making for both the company and our development of the project.

### Technical

* Website traffic
  + Measures the number of visitors and how often they visit.
  + High traffic indicates the site is discoverable and visible and is being effectively marketed.
* Page load speed
  + Measures the time it takes for the website to load.
  + Faster load times improve the user’s experience and keeps the user on the site for longer. Slow times push users away very quickly.
* Uptime
  + The amount of time that the site has spent being online and functional.
  + High uptime allows users to access the website consistently. Allows users to rely on the system.

### Business

* Registration rate
  + The number of new registrations that have been made on the site.
  + Gives a good indication of how good the site is at convincing users to sign up and generate leads.
* Activity engagement
  + The number of people that are engaging with elements via the website.
  + Tracks which events are most popular, and which drive engagement and revenue.

## User Acceptance Criteria (UAC)

According to Atlassian, User Acceptance Criteria (UAC) are the *“conditions that a product…must satisfy to be complete”*. As per that definition, we have devised a list of conditions that we think must be complete for the client and their customers to perceive the solution as complete.