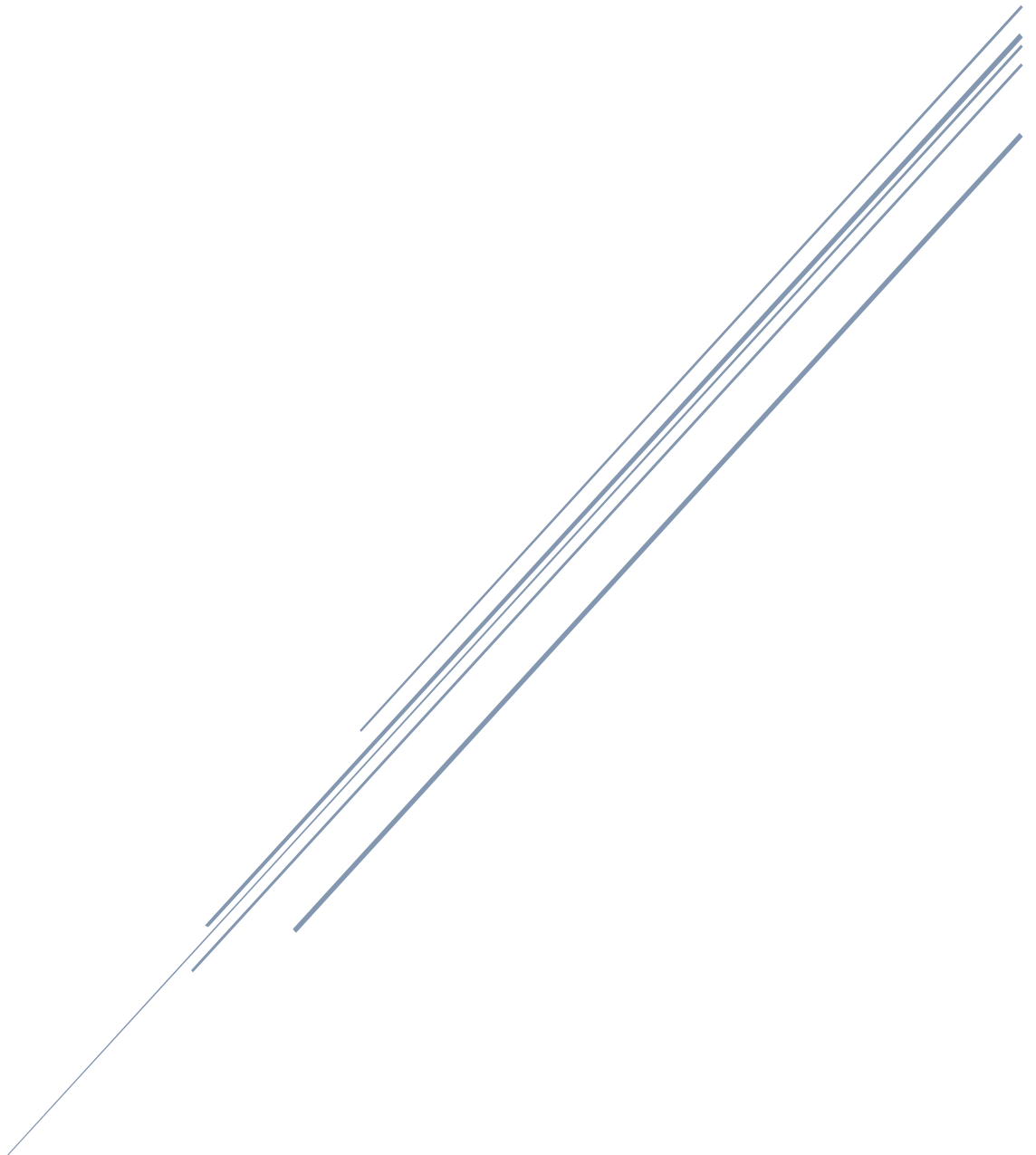# WEB APPLICATION DEVELOPMENT

COMP 1687

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Legal, Social, Ethical and Professional problems will be considered on Neighbourhood Commuter Carpool Brokering Application for Royal Borough of Greenwich

During the creation of my application, it required human interaction throughout the website. Many laws and issues must be considered throughout the application when developing this website. Developers must be aware that all users have a different way of using the website. For this report, I am going to be explaining the legal, social, professional, ethical, economical, philosophical and political issues on the application that I have used.

One of the issues that I feel is important and developers need always consider developing any application is accessibility. Accessibility aims to prevent barriers for disabled users to accessing the website. When the site is designed, the users should be able to use the website appropriately. Adjustments must be made for *all* users to use appropriately. Some of these adjustments are when using audios, subtitles should be provided for users who have hearing problems. This would make it easier for the user. W3C have provided standards for developers to follow to make their website efficient for every user to use efficiently. W3C states that for people who cannot see images, audio should be provided to make the information accessible (W3.org, 2017). W3C provides guidelines to be followed and some of these are the following:

❖ Guideline 1.1 Text Alternative: Provide text alternative for any non-text content (W3, 2017)
❖ Guideline 1.2 Time-based Media: Provide alternatives for time-based media (W3, 2017)
❖ Guideline 1.3 Adaptable: Create content that can be presented in a different way (W3, 2017)
❖ Guideline 1.4: Distinguishable: Make it easier for users to see and hear content (W3, 2017)

They are more guidelines set for guidelines under perceivable. These guidelines have been made to make it easier developers to follow and meet the requirements that every user needs. We all must remember that the website is accessible to anyone and everyone. United Nations Convention state, and echo words from W3C, "*equal enjoyment of the rights of persons with disability*" (Un.org, 2006); and states the basic human rights with disabilities.

Regarding my development for Neighbourhood Commuter Carpool Brokering Application, most of the user inputs require keyboard inputs. The accessibility of my application seems to be quite strong as there are numerous of features that help accessibility users. This makes it easier for those who have hearing problems. Media has not been implemented, but subtitles should be an option for the accessibility users that require this in the near future. Another feature is when the user has an option to upload their image; they are required to put alternative text. This is important as screen readers in replace of images read it in aid of those who have visual disabilities.

Another issue that is important is privacy towards users of the website. The information used by the website is provided by the user. This information could be personal information e.g. name, surname and email address. Websites need to make sure that the website is secure to make sure hacker's do not exploit the opportunity of this. Most websites inform the users about how they deal with privacy on their websites. Handle is a recruitment website that informs the users of how they deal with their privacy on their website. As Handle states on their website, "*We take very seriously the privacy of our website users and the security of their personal information*" (Handle.co.uk, 2017). As Handle have informed the users, most websites have a privacy page where they let users know what information has been used.

Regarding my application for Neighbourhood Commuter Carpool Brokering, privacy on the website I feel is secure. One feature that I feel is necessary is that HyperText Transport Protocol Server is automatically switched when the user does not type it in for the URL. This is important as it uses a secure layer. In this case, the secure layer is the University of Greenwich server. Another feature that has been implemented is the password that the user requires when registering for the website. Once the registration is complete, the password is saved within the database as encrypted. They are different types of encryption, and the one that was used within this application to make it secure is BCrypt. This is different to MD5 where the same password typed and stored is different to each other. Therefore, this prevents any recognise a pattern, and make the encryption harder to hack.

Data Protection Act is designed to protect personal data that is stored within a system. This act relates to anyone that stores someone else's data. This information must be used cautiously and legally. Exposing someone's information can cost the company of fines up to £500,000 (Itgovernance, 2017).

Socially, it can cause distress when someone does lose their personal data for a user. This can hurt developers and website owners as they are dependent on their website to work. Professionally, it can hurt their credibility of the brand as an insecure website and lose customers.

Cookie Law is a law that requires all websites to get agreement from the user on the information that is used on the website. This law must be followed by all websites and can be interpreted in different ways. The Cookie Law website states, "*is a piece of privacy legislation that requires websites to get consent from visitors to store or retrieve any information on the computer*" (Cookielaw.org, 2017). Regarding my application, a cookie law was implemented, and consent was asked when the user logs in and remembers the username. Another place where cookie law was used is within the search for unauthorised users. This is where cookie law has a tick, where users can choose to use the content of what they have searched, and use this as a cookie. One flaw that I have noticed is that for my application, it only says to the user that this part of the website uses cookie. It does not give more information about how the cookie is used within the website. One suggestion is to inform the users, like Handle, for them to know how their personal data is handled and what is done.

Some factors affecting the website is being aware that all users can register an account. This can be users whom are under the age of 16, where they need consent from their parents. Another factor that could be put into content is different people speak different languages. This can affect those whom do not speak English as this is the only language that is used within the website. Different websites have translations for the website to run. This would make it efficient and understand in their own language what is written. This is to prevent users from getting confused and be able to understand what is written.

Different people have different choices of web browser. For any website, it needs to make sure that the application works for different browsers. Developers need to make sure that different browsers operate differently. Therefore, they need to adapt their website so that the same website works the same on different browsers. This would prevent any confusion for different users. This links in with the location. Different locations use different browsers. For example, within the United Kingdom, the common browser is Google Chrome. However,

within Spain, the common one might be Mozilla Fox. These points have been mentioned within W3C stating a legislation that is aimed at developers for developing their website to ensure that it can be adaptable for any culture, region or language (W3.org, 2017).

Regarding my application, this is the flaw that needs to be fixed within my website. This should be able to fix by having translation for different languages. Currently, it limits the number of users that can use the website. However, if this website has the flexibility; it can adapt to the language needed. As mentioned, it can appeal to different people, but it would appeal to more people in different locations.

Copyright issues need to be addressed for any developer creating any application. Copyright, Designs and Patents Act 1988 covers the right of protection to those registered and hold the right of the work registered. They are consequences for those in breach of this act. The official website for legalisation states, "*the court may take action for infringement of copyright regard to all circumstances, and in particular the flagrancy of the infringement, and any benefit accruing to the defendant by reason of the infringement*" (Legislation.gov.uk, 2017). Recognition needs to be given to those whose original work that has been used. This is the same for the application. Any code that has been used from other sources has been credited within the code and the report. As stated, stealing other people's content could result in the court acted against the defendant. It is impossible to avoid copy and pasting within a website. Therefore, users can prevent this from their own website by disabling the users from copying their information, or images. This could save all the trouble of copyright infringement from all parties.

Trademarking comes in the same category as Copyright and the process is like each other. If a developer is working on a brand and does not trademark the name and logo; there is a potential another person can use it and trademark it. When creating a brand, trademarking does cost around £100 to £200 to put in and make sure that it is protected. If someone does use it whilst it is protected, they can face consequences and potentially lose their 'copied' brand.

For my application, as this is a project supervised under University of Greenwich, these standards for copyright and trademark do not apply anywhere near within this application. However, if any project was to be taken place in the real world; these standards would need to be applied and consequences are faced if these are breached.

Private details will be provided for the users to be able to log in and track monitor their activities. When registering, email need to be provided to continue. Communicating with customers through email will be regularly. However, an ethical issue possibly may involve sending constant emails to users. This could potentially annoy the customer, and this could result in the customer losing interest within the prototype. Another ethical issue that is a constant worry for developers is security of the website. Having a secure website is very important as theft information can be lurking around to abuse this information as the privacy of the website has been stated all above.

For my application, spamming emails is not necessary. The only core compulsory email that gets sent is verification of email and/or verifying it a second time. Other than this, I have an option for the users to contact the administrator if they have any problems, or feedback for the website. The importance of this is that spamming emails for this application do not and

will not have the intention of spamming and constantly annoying customers to do what is necessary for it. This could lose customers, and as a brand, no company would like this to happen.

One issue that comes under as professional is that elderly will be using and reviewing the website too. The website's navigation and user interface should be clear and concise so that the elderly can use it too. I feel that for my application, it is clear and concise. If any users feel that it is not up to standard, any feedback is necessary to improving it.

In addition, three issues can arise will be discussed is political, philosophical and economic (PPE). These will be related to the application that has been discussed above within the application.

Political issues within the website can cause controversy on any website. As mentioned above, political issues about privacy. Everything is circled around the Internet, and most users spend their time on the website. Privacy is a huge controversial topic towards security and keeping a balance on public and private data. Nancy Gibbs does write in her article about how Tim Cook wants the US government to act over "*privacy, security and the balance of public and private interests*" (Gibbs, 2016). Stronger protection should be applied, and Government should act on this as a serious case with data dealing with mental health, political opinions, personal information and many more data that users to not want others to find out. Any political issues that does become necessary, the company and/or website should react solve the case to the standard that is expected and suited for everyone.

Philosophical are issues based upon what a person has an attitude towards something. This attitude can change and differ when using different sites. For example, I can have a high standard philosophy of using a website. However, I would be disappointed if a website does not meet my expectation and I would be sceptical of using it. Commuter Carpool is all about reviewing other journey experiences. One user might feel that they have helped others by posting a post on the website.

Economic issues can become into consideration on a website. Anywhere money is involved, the economic is involved within in some way. For example, a website that involves money is Amazon. However, issues arise when purchasing a product from another country. This is where the currency exchanges between the UK and Dollars. Some websites calculate it automatically, but this is where the calculations need to be appropriate and calculated carefully. Currency rates change all the time. For example, $1 equals to £0.75. In terms of Commuter Carpool application, the economy does not play a part with economy. However, the background of how the website is run; it does involve money. If the background team was to take part in any purchasing from another country, they do need to consider how much the exchange value is. This would need to be considered soon.

Uber has similar example of how the Commuter Carpool Application works within Greenwich. In terms of the user, they can save money and other economic factors by sharing a car. Other economic factors would include use of less petrol, less traffic and the company can make more money by serving other customers. This would enable less money spent too.

In conclusion, many factors must be considered as stated above when developing a high-level website. This can be considered on this website if this was to be developed to a high-level expectation. Some of these factors are included before the operation of the website, during

the development of it and after the development of the website. Different websites have different expectations of users to be fulfilled and have a good experience on the website. These expectations are for those whom have target audiences all over the world. Neighbourhood Commuter Carpool Brokering Application is a community website its whole focus is within the community of the borough of Greenwich. However, if this was to aim the website at a global stage, it would require change and a lot of improvements to fulfil the customer's expectation.

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