LSEPI

The project

In this project, our team were tasked with producing a graphical user interface system for the company Ufix. This system, needed to comply with the laws of the country it is based in, in order to ensure that it was completely legal and fit for its given purpose as well as conform to social values, e.g. by having a user-friendly interface and be compatible with a wide range of different types of users, whilst also overcoming any ethical and professional issues that it may encounter. The system needed to be secure for its purpose of keeping the data of users safe and secure whilst all individuals who access the system needed to be given prior authorisation before hand as well as ensure that they respect the terms and conditions of the system.

Legal

When designing the system, we had to take a number of different factors into consideration, one of these factors was whether or not the system complies with the various laws which govern the country/ countries from which it is being used in. This was very important as it meant that the users of the system had to agree to a set of terms and conditions in order to use the system and if they refused to comply with the conditions at hand, they would be denied access to the system.

The legality of the system revolved around who could access it and what they were and were not allowed to do to the system. This included being able to use the system for its required purposes but not being able to modify it at all or make any changes without the company’s prior permission. In addition, the users were not allowed to make copies of the system or give it to other people. Some of the major aspects of the systems legality include things such as **Data Protection**, in order to ensure that there is no data leakage and that the company’s assets are secured and protected. As well as this, the accessibility of the system was a very important and robust feature as we had to ensure that only authorised users could access the system. Due to this reason, we added a username and password for the system so that only authorised personnel can access it. However, as mentioned above, Data Protection was a very important part of the system as we needed to ensure that the system complied with all of the laws of the country as well as any equivalent laws should the system be transferred to different regions, e.g. from Europe to North America.

The current **Data Protection Act** (the “**General Data Protection Regulation**”), which was enforced in May 2018 as well as the “**Data Protection Act**” of 1998 governs how data about users can be acquired and processed. According to the terms of the Act, the system must ensure that the “Processing is fair and lawful, purpose if declared, quantity not excessive, accuracy maintained, retention no longer necessary, rights of subjects respected, security maintained and international export with same protections”. In order for this to be enforced effectively, a number of penalties were put in place should any of the terms and conditions be violated. Thus, if an individual should violate any of the terms and conditions, depending on the severity of the offence, they could be faced with a large fine or even jail sentence.

In order to ensure that the system respected these laws and that the terms and conditions were applied efficiently, we had to make sure that all of the users were using the system for its desired purpose and that they were not abusing the terms and conditions or altering any of the code which represented the building blocks of the system. Moreover, with the addition, of the Data Protection Act, we also had to ensure that the system complied with other laws revolving around computers such as the **Computer Misuse Act (1990).**

This law was very important as it governs whether or not users are authorised to access computers as well as make modification to the data on the computer system. Under this law “Unauthorised Access “ to computer systems is unlawful. The term “**Unauthorised Access**” revolves around hacking as well as various other techniques with the objective of gaining access to a computer system which you are not allowed to. In addition, other offences such as fraud is also considered to be a more serious offence as well as “**Unauthorised Modification**”, which revolves around if an individual were to change data without the prior permission of the owner or intentionally plant a virus into a computer system. As a result of these acts, any individual found guilt with accessing the system without proper authorisation or modifying the data in any way as well as attempting to damage the system, could be prosecuted by the current computing laws.

While this aspect was incredibly important, it was difficult to implement fully as we had to ensure that the system complied with all of these laws and that the users were using the system for its desired purpose and were not violating the terms and conditions by, for example, modifying any of the code or changing the system in any way. We also had to ensure that, in the event that any of the users violated any of the requirements, that they would be identified and dealt with accordingly.

Social

As well the legal aspects of the system, we also had to take into account the social status of the system. One of the most important parts of the social aspect of the system was that it had a user-friendly interface that was fit for its purpose and was able to accommodate users from various backgrounds such as those who are new and relatively inexperienced in using a GUI system or someone who may have a disability for example, poor eyesight. In order to accommodate to these users, we made sure that the system was very easy-to-use and sufficient for its given purpose.

We made sure that the user interface was not overly complicated and simply had a user name and password for standard users (although, certain users with higher levels of access will be given greater functionality) so that they would be able to utilise the features of the system relatively easily. Furthermore, we had to ensure that if any of the users had any disabilities such as being unable to see properly or were colour blind, that they would not be at a disadvantage.

We also considered using a variety of different colours for the system in order to make it more attractive and eye-catching to the users. Moreover, we also took into account the potential need for documentation to inform the users on how to use the system to avoid any confusion. As mentioned above, we also had to take into account the importance of a multi-level user interface to ensure that only certain users can access certain things and thus to restrict novice users from being able to access some information regarding the data of various users, thus making the system secure as well as easy-to-use. Furthermore, as a result of this, we ensured that only users with the highest levels of access and authority would be able to access the most sensitive information of various users.

From implementing these various aspects into the system, we were able to ensure that we had produced a system that was easy-to-use for all users and was sufficient for its purpose whilst also ensuring the security of the system.

Some of the issues revolving around the social aspects of the system was that we had to ensure that we did not make the system overly complicated and that users would not get confused when using the system. We also had to conduct a range or error-checking and system tests to ensure that everything was working properly and that there were no faults when running the system.

Ethical

Another important part of the project was to ensure that the system met the ethical requirements necessary. When developing the system, the group used platforms such as Microsoft Teams and Discord to coordinate who was doing what and also set fair and realistic deadlines for various tasks. We were able to divide work between each other and even help each other out if we were struggling with understanding various things or finding the workload overly challenging. We had regular meetings every Monday and Thursday to discuss the progress of the project and how each member was doing with each task they had been assigned.

For this, similarly to the social aspects, we needed to ensure that we created a system which is straight forward to use whilst also being fully functional and effective for its given purpose. In order for this to come about, we made sure that the system provided a variety of different options for some users with relevant authorisation whilst it limited the features for other users but still provided a friendly and easy to use interface.

The importance of the ethics of the system can be seen as the importance for use within an organisation as a GUI system is much more effective and efficient to use when used in a company or business as lots of people will benefit from the wide range of features that it includes whilst also benefitting from the advanced security which it contains as their data and personal information will be kept safe and secure.

For this system, while a basic user has limited functionality of the system, users with the relevant authorisation will be granted a wide range of privileges and be able to relax knowing that their data and information is being kept safely and securely. We made sure that the system was appealing to its users, with a relatively simple yet straightforward menu system which enabled its users to be able to log onto the system efficiently whilst it contained a high-end level of security to ensure the security of their data and information.

However, we did encounter a few issues in this area as we occasionally had some confusion in regards to when the meetings were set to happen, e.g. the time of the meeting as well as what topics were going to be discussed during the meeting. We also had some confusion as to when the deadlines for our tasks were and when we needed to complete certain tasks by. Likewise, we sometimes struggled to get some of our tasks completed by their set deadline whilst also occasionally having to ask other members of the group for help if we were finding some tasks rather difficult. Finally, we occasionally struggled to manage the workload of the project and sometimes felt that we were being overloaded with work.

Professional

One of the last things which we had to ensure was that the system was professional for a business environment. To do this, we needed to ensure that the users were able to use the system for its required purpose. This meant that the employers and the employees were able to log into the system efficiently while also being able to access certain facilities, depending on what status they have(employer or employee).

We considered granting the employers the ability to add or remove employees from the system but at the same time ensure that the employees had limited access to certain features such as being able to view the details of the employers or make amendments to the system. We felt that a multi-level user interface was very important as it gave certain users greater privileges than others and thus would be more reliable and efficient when used in businesses and office environments where different people have different levels of authorisation.

Through the use of a multi-level user interface, we were able to ensure that the system provided a sufficient level of security and ensured that only certain users would be able to have greater privileges. This ensured that the users data was well protected and safeguarded from any threats such as data fraud or damage from a disgruntled employee.

This did have some issues, as we found it relatively challenging to provide certain users with greater privileges and higher levels of authorisation than their employees and found that trying to keep all the data secure as well as up-to-date was a challenge.