Unit Code & Name: COS20001 – User Centered Design

Assignment Title: Applying design guidelines to user interface design.

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Executive Summary

In today's world, a user needs to interact with a variety of mobile apps, websites, and computer software to complete his daily tasks for example payments, ordering of food, and etc. If a software is badly designed for the user to complete their tasks, they may be frustrated when they interact with the app or software.

A poorly designed software causes confusion, ambiguity, or requires a user to re-learn how to use a function. Confusion or ambiguity can be caused when the software interface does not reflect the user's "mental model". A mental model is how the user thinks the app should function to complete the task. But, if the software is designed otherwise, for example, too much technical jargon instead of user understood language, they will need additional time to learn and understand the functions.

To ensure users will have the best experience during the interaction with the app. It is recommended that the development of the user interface follow design guidelines. There are many design guidelines established by experts such as Jakob Nielsen, Don Norman, Ben Schneiderman and many others.

However, for this dementia autonomy support app and essay, we will be applying the design guidelines by Jakob Nielsen.

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Introduction

User design guidelines are essential in the design of applications to ensure that the design help the users navigate and interact with the app or software easily and efficiently to complete their tasks. In relation to the UCD project, these guidelines are used to ensure that the design of the dementia autonomy support app is simple for the user to interact with and have an excellent user experience. The concepts discussed in the essay are the match between the system and real world, provision of user control and freedom, flexibility and efficiency of use adapted from the Jakob Nielsen's 10 golden rules. The purpose of the report is to discuss the application of design guidelines to user interface design and demonstrate the integration of these guidelines into the UCD project.

Match between System and Real-World Objects

One of the key heuristics in curating a well-designed app is the match between the system and real-world objects. According to (Match Between System and Real World: 2nd Usability Heuristic Explained, 2020), the design of the interface should emulate real world objects, for example, a scissors symbol in a word processor means that is to cut a text from the document. Problems can arise if the interface do not reflect the user's reality of how the interface to function. In a research done by (Salman, Ahmad and Sulaiman, 2020), the interface design should speak the user's language rather than use technology jargons and technicalities which would confuse the user. Additionally, in a research by (Frohnhofen, Hartmann, Brandt), the results showed that when the user's mental model matched the interface, he or she would feel supported in the usage of the app. From the results of these research, it is crucial to consider the user's cognitive ability in using the app to ensure the best experience for them.

From a practical approach and to demonstrate the integration of this heuristic to the dementia autonomy support app, this concept ensures that the app has familiar conventions and language such as “call first-responders”, “call caretakers”, and a phone icon so signify a calling feature. These terms are simple to understand and are used as everyday language. This heuristic is implemented in the app because time is crucial when an emergency happen. If the function language or symbol is complicated, the patient or caretaker will be confused and these may lead to serious consequences such as dementia patient getting lost, or even death. Therefore, this heuristic ensures that caretakers would have a seamless experience in operating the app and would be able to monitor the dementia patient effectively and vice versa.

User Control and Freedom

According to Jakob Nielsen, a well-designed app should provide user control and freedom in its functionalities. In an article by (uxexpert , 2019), this heuristic is defined as the ability for the user to undo or redo their action. Without user control and freedom, the user will find it difficult to interact with the app and may even find it frustrating because they have to find a way to undo or redo the mistake. This heuristic also prevents users from being in an uncomfortable situation because they have to ask someone how to correct their mistake. If they are unable to find anyone, they may eventually give up using the app altogether.

To show the integration of this heuristic in the app, icons such as an exit, return to main menu are implemented. This heuristic is especially crucial in the dementia support app because dementia patients are prone to making mistakes because of memory issues. In addition of providing user control and freedom, the app supports features which the patient can cancel the option to alert first-responders if it is wrongly activated or proceed with the option. This heuristic helps the user to interact with the app effectively and avoid confusion if system functions are activated accidentally by users. Lastly, this heuristic ensures optimum monitoring of the patient through the app and communication can be done effectively in an emergency.

Flexibility and Efficiency of Use

Flexibility and efficiency of use in the user experience is just as important as its functionalities. According to (Interaction Design Foundation, 2020), efficiency is measured as "the resources expended by the user in relation to the accuracy and completeness of goals achieved (ISO standard 9241)." An efficient app means that the user will be able to accomplish their goals in a with little effort. This aspect of the heuristic is implemented through the use accelerators. In an article by (Wong, 2020), accelerators are hot-keys, hidden commands, and macro facilities. Hence, experienced users can trigger familiar functions quickly without going through a long way and enhance user experience. Lastly, flexibility ensures that the user interface catered to both the experienced and inexperienced user.

This aspect of the heuristic is implemented in the app through accelerators that support different finger gestures or voice commands recognized by an AI assistant so that the caretakers or patients can initiated certain function quickly in the event an emergency happens. This aspect of the heuristic is woven into the interface of the app because not all caretakers are technology savvy, and using a sophisticated app for the first time can be arduous for the them. For experienced caretakers who have used technology, monitoring can be done efficiently because they can trigger accelerators or use voice recognition to show them the functions they need to interact with. The dementia support app is built for the first-time non-technology savvy caretaker and an experienced caretaker who has used technology to monitor the dementia patient before.

Conclusion

In conclusion, without these design guidelines, apps would be difficult or frustrating for both inexperienced or experienced users to use. In a book by Kraft (2012), user experience helps an app stand out and will become a “key battlefield” for competition in the future. This shows how important it is for apps to be designed with good guidelines in order to succeed. Many successful apps like Gmail, iBooks, and the Google search engine have included these design guidelines to create an unforgettable user experience. In addition, these guidelines prevent the disconnect of the app’s interface because of inconsistencies, ambiguity, and isolation of the user experience. Therefore, in the dementia support app these guidelines are always kept in mind in order to develop a cohesive user experience interaction. With the integration of these design guidelines, apps will have greater potential to succeed, garner trust and recognition, and maximize profits from a business perspective.

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