Assignment 4

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January 18, 2023

1. A company is designing a kiosk that can display weather information in public locations. The kiosk will feature a touch screen so users can select a city by pointing on a map. Give three reasons why a touch screen is an effective device for this application.

Ans:

Three reasons:

- The chance of error is very low.

- Users must feel the satisfaction of direct manipulation and must feel that they are controlling the interface.

- From the map, they can easily select the city or desired location, even though they don't know the exact name. Overall, a touch screen is more user-friendly.

2. Explain the difference between direct-control and indirect-control pointing devices. Name a task when the one type is a more appropriate device than the other.

Ans:

Direct control involves the user directly interacting with the interface via a touch screen, giving the user a greater sense of control over the interface. In indirect control, the user uses some kind of external input device, say a mouse or keyboard, to control the interface. In direct manipulation, the user can manipulate the interface very easily. There is no mental effort required to transition from physical to digital space.

Finding something on a map or ordering food using a kiosk are some examples where direct control is more suitable. In using any editing software, indirect control might be suitable.

3. Give a definition of context-aware computing. Provide an example of one application of context-aware computing that would meet the user needs of a tourist.

Ans:

In context-aware computing, the interface will try to detect the activity or state of the user and show the relevant information in the interface based on the activity or state of the user. For example, in Fitbit, when the user is walking, it might show the total steps of the day. When the user is resting, it can display the total amount of resting time as well as the number of calories that must be burned throughout the day.

If tourist travels to a place, our clock in the mobile phone automatically change the time of the clock based taking data from GPS. It's an example of context aware computing interfaces.

4. Describe the challenges first-time users face when using an information-exploration system. Propose how these challenges can be overcome.

Ans:

When a first-time user searches for something, they have no idea what the ideal keyword is, how long the keyword should be, or how to choose the perfect keyword. If the user can't put the keyword properly, they might see a lot of irrelevant things that they were not expecting. To tackle this challenge, an interface can offer a simple guideline to the new user so that he can get an idea of how to search for things.

5. Argue whether textual search interfaces should keep details of how the search is performed hidden from the users. Decide which approach will allow the user to get more accurate results.

Ans:

I think textual search interfaces should keep detailed records of how the search is performed. It will help the experts. They can see the details, and it will help the expert user improve their search skills. But it might create problems for novice users.

I think textual search can give the best result in most cases. The user has the ability to better express themselves in written text and find what they are looking for. However, for the disabled or when multitasking, voice search can be an interesting option in some cases.

6. Describe a summary of data types and example visualization techniques associated with each.

Here are the different data types and their example:

- 1-D Linear: Tag clouds, Wordle, PhraseNets, Parallel Tag Clouds

- 2D Space: Gegographic Information System(GIS), self-organizing maps

- 3D Volume: Volume rendering, medical visualization, molecule visualization

- Multi Dimensional: Tabeleau, parallel coordinates, scatterplot matrices

- Temporal: Google Finance, EvenFlow, LifeLines, TimeSearcher

- Tree: treemaps, degree of interest trees, space trees

- Network: Nood-link diagrams, adjacency matrics, NodeXL

For questions 7-10, refer to the following scenario:
A group decision system is being built over a network, which has inherent delays due to network lag. Suggest the longest acceptable amount of time the delay could last without affecting the user negatively. Provide an argument for the time you selected.

7. System confirming the user's password when logging on.
Ans:
I think in this type of scenario, a 5-second delay is fine. If there is a longer delay, the user may become concerned that his account has been hacked. Or if the waiting time is longer and he types the wrong password, and he comes to know that he entered the wrong password after waiting for 15-20 seconds, he might get frustrated.

8. Synchronous group editing of a document.
Ans:
There should be no more than a fraction of a milisecond delay. In the editing software, users want to see the changes instantly. If it takes time, it might frustrate the user.

9. Asynchronous critiquing of other participants' work.
Ans:
I think there might be a larger delay. As the system is asynchronous, no one will be bothered by when a message, email, input, or feedback is coming. Even if the delay is excessive, users can still provide feedback on their partners' work.

10. Voting on serious issues.
Ans:
There may be a 10- to 15-second delay in the voting system, which is tolerable. In this type of scenario, the user eagerly waits for the result. If the delay is more than that, the user might get tense, which might impact their psychological health.