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16550

HUMAN COMPUTER INTERACTION

Question 1:

Consider the chair given below. Your Employees want to use it as a computer chair. Your task is to write any As HCI Specialist, your job is point out any Five issues in the design of this chair.

The computer chair given in the question having issues which can be problematic for the employees in their department.

1: This chair is not adjustable so the employee can not adjust his position for viewing distance and viewing angle.

2: There is no lumber support for lower back to avoid discomfort.

3: There is no adjustable seat height to position yourself for computer.

4: This chair has hard surface which is not comfortable for sitting.

5: There is no elbow support for to place elbow in 90 degree angle.

6: The chair has support for the base in the left and right side of the bottom, but the support is very thin and two in number as there is wastage of material and are not strong at all, which could result in easily breaking of the supports and eventually the chair, its wastage of wood as well as its not give it the support as it should.

Question 2: What is Paradigm, and what do you mean by paradigm shift?

Why study paradigms Concerns

 – How can an interactive system be developed to ensure its usability?

 – How can the usability of an interactive system be demonstrated or measured? History of interactive system design provides paradigms for usable designs.

What are Paradigms?

 • Predominant theoretical frameworks or scientific world views – e.g., Aristotelian, Newtonian, Einsteinian (relativistic) paradigms in physics

 • Understanding HCI history is largely about understanding a series of paradigm shifts – Not all listed here are necessarily "paradigm" shifts, but are at least candidates – History will judge which are true shifts.

Paradigms of interaction

New computing technologies arrive, creating a new perception of the human—computer relationship.

We can trace some of these shifts in the history of interactive technologies.

Paradigm Shift

A paradigm shift is a major change in the concepts and practices of how something works or is accomplished. A paradigm shift can happen within a wide variety of contexts. They very often happen when new technology is introduced that radically alters the production process of a good or service.

Example

the internet created a paradigm shift in the way business is conducted. Email and scan replaced the fax machine and courier services. Orders for securities can now be placed directly by the client via the Internet and are sometimes executed in seconds.

Question3:

Explain Design Rationale. Write and explain the types of design rationale.

A design rationale is the explicit listing of decisions made during a design process, and the reasons why those decisions were made. It is to support designers by providing a mean to record and communicate the argumentation and reasoning behind the design process.

Benefits of design rationale

☐ Communication throughout life cycle

☐ Reuse of design knowledge across products

☐ enforces design discipline

☐ presents arguments for design trade-offs

☐ organizes potentially large design space

☐ capturing contextual information

Types of design rationale

Rationale can be classified into several types. These types are not mutually exclusive and some systems may support multiple types of rationales.

- **Argumentation based** - the design rationale is primarily used to represent the arguments that define a design. These arguments consist of issues raised, alternative responses to these issues, and arguments for and against each alternative.
- **History-based** - the rationale consists of the design history – the sequence of events that occurred while performing the design. This information can be stored in many forms. It could be in the form of entries in a design notebook, an archive of e-mail messages, or other types of documents that capture actions taken over time.
- **Device-based** - a model of the device itself is used to both obtain and present rationale. The explanations of the design would be produced by using the model to simulate the behavior of the device. It would be possible for the user to view the model and ask questions about its design and behavior.
- **Process-based** - the DR capture is integrated into the design process itself which guides the format of the rationale, the design description is modified only by changes to and refinements of the design objectives, thus capturing the rationale as part of the design process.
- **Active document-based** - the DR is pre-generated and stored in the system. In these systems, the designer creates the design and the DR system generates the rationale for it based on the system's stored knowledge. For each decision made, the system compares the decision made by the user with the decision that it would have made based in its knowledge. If the actions of the user conflict with the system recommendations, they are given the option of changing their decision or modifying some of the criteria.

Question 4: Find the web pages that illustrate the principle of consistency. You must provide on good and one bad example of consistency. You must provide the screen shot of web pages along with URL and the written explanation justifying your good and bad example in your answer. To provide the relevant examples browse the internet.

**Bad Example of consistency**

1337.to (Torrent website)

url. https://www.1337x.tw/
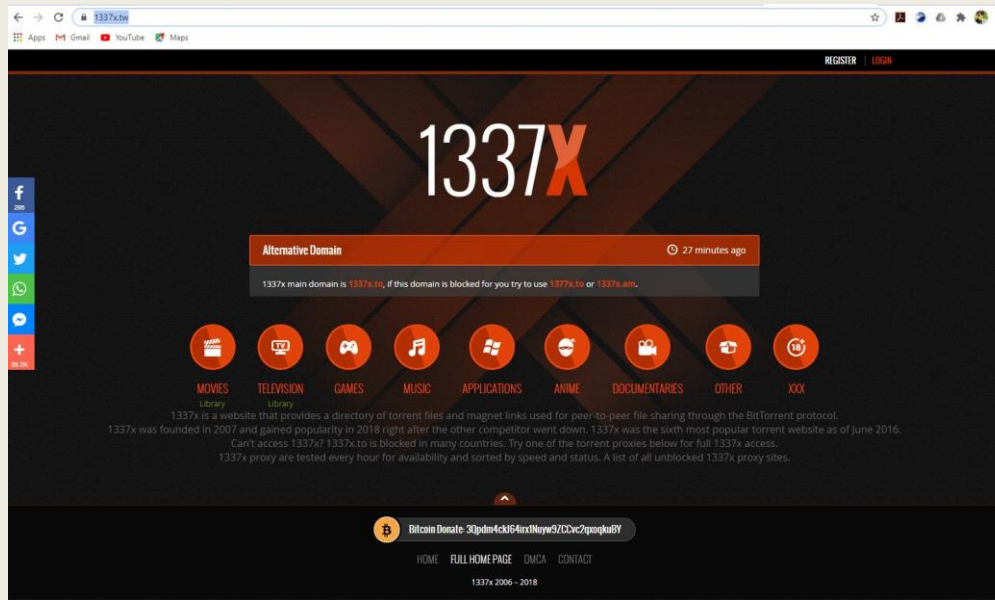
Explanation

The bad part comes with the sharing of copyrighted content. It's no secret that large volumes of copyrighted materials are being shared via torrents. If a company's employees are using the corporate network to torrent, this is a misappropriation of a company's computing resources, but worse than that is the legal risk. Copyright holders are understandably keen to protect their revenue, so copyright alerting systems exist to locate IP addresses torrenting copyrighted content. Once these IP addresses are tracked back to companies or individuals, copyright enforcement agencies send legal letters. For a company, complying with the terms of these legal letters means hunting down content and removing it from the corporate network. At best, it's a nuisance and diversion of IT resources.

Good example of consistency

Yahoo Maps

URL: https://search.yahoo.com/
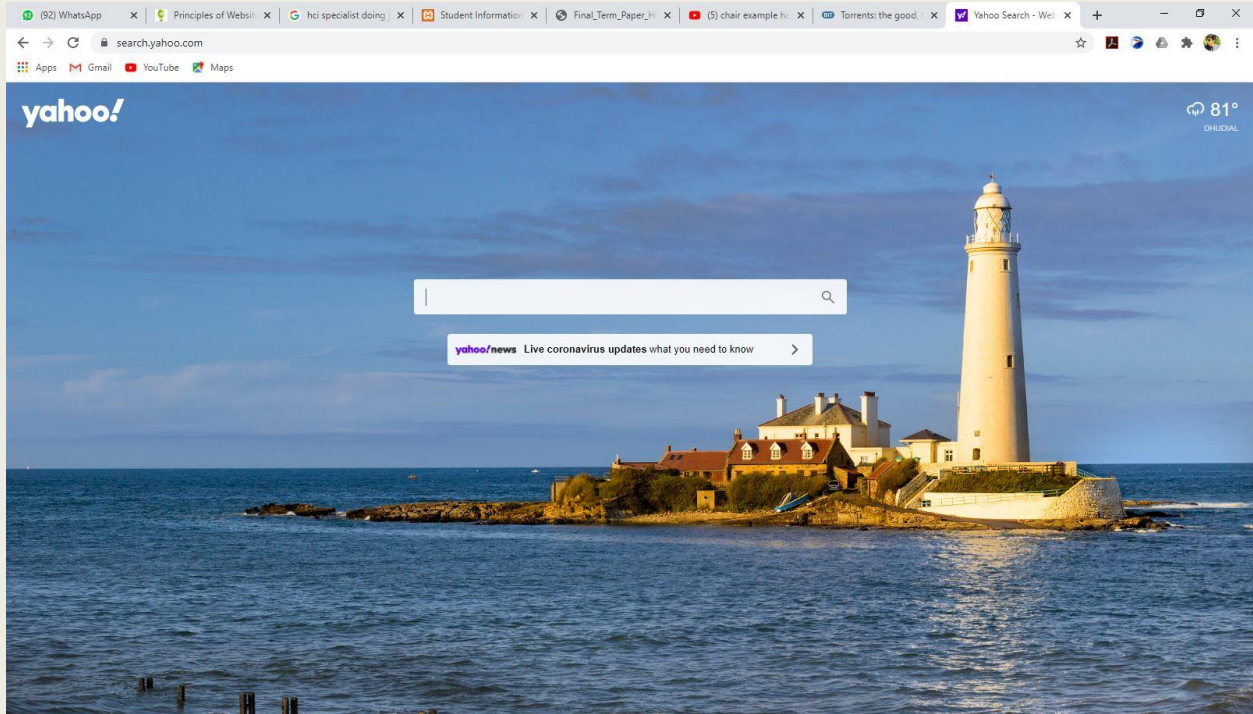
Explanation:

When Google introduced its mapping service last year, it did something that made its competitors look antiquated. Users could click on a map and drag it to see an adjacent area, a much faster approach than those offered by rival mapping services.

But today, Google Maps still does not offer some of the pedestrian conveniences of Yahoo Maps and MapQuest from AOL. For example, it does not remember addresses, so users need to tell it where they live every time they want driving directions.

Alan Eustace, a senior vice president for engineering and research at Google, said in an interview last week that the company had made a conscious choice to play down copycat features: "We are trying to come up with something that is new and different, that makes people say 'Wow.' "

Do Internet users prefer services that are consistent and predictable, like those offered by Yahoo, or are they more interested in Google's wow factor? These two approaches define a pivotal front in the battle for online loyalty between the major players in the Internet search business.

Question 5:

Write the Shneiderman's 8 Golden Rules.

To improve the usability of an application it is important to have a well-designed interface. Shneiderman's "Eight Golden Rules of Interface Design" are a guide to good interaction design.

1 Strive for consistency.
Consistent sequences of actions should be required in similar situations; identical terminology should be used in prompts, menus, and help screens; and consistent commands should be employed throughout.

2 Enable frequent users to use shortcuts.
As the frequency of use increases, so do the user's desires to reduce the number of interactions and to increase the pace of interaction. Abbreviations, function keys, hidden commands, and macro facilities are very helpful to an expert user.

3 Offer informative feedback.
For every operator action, there should be some system feedback. For frequent and minor actions, the response can be modest, while for infrequent and major actions, the response should be more substantial.

4 Design dialogs to yield closure.
Sequences of actions should be organized into groups with a beginning, middle, and end. The informative feedback at the completion of a group of actions gives the operators the satisfaction of accomplishment, a sense of relief, the signal to drop contingency plans and options from their minds, and an indication that the way is clear to prepare for the next group of actions.

5 Offer simple error handling.
As much as possible, design the system so the user cannot make a serious error. If an error is made, the system should be able to detect the error and offer simple, comprehensible mechanisms for handling the error.

6 Permit easy reversal of actions.
This feature relieves anxiety, since the user knows that errors can be undone; it thus encourages exploration of unfamiliar options. The units of reversibility may be a single action, a data entry, or a complete group of actions.

7 Support internal locus of control.
Experienced operators strongly desire the sense that they are in charge of the system and that the system responds to their actions. Design the system to make users the initiators of actions rather than the responders.

8 Reduce short-term memory load.
The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, window-motion frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions.

Question 6:

  You are familiar with internet explorer. Explain any five usability goals in terms of internet explorer. Justify each goal with example

1. Learnability: The ease with which new users can begin effective interaction and achieve maximal performance.

Example: if a search a thing in internet explorer and my quarries are then internet learn the quarries and give the predication quarries so it is very easy for the user to search a things without any problem.

2. Effectiveness—Itsupports users in completing actions accurately.

Example- when a user searches anything on the internet explorer it completes its search in seconds while giving a large number of options.

3. Efficiency—Users can perform tasks quickly through the easiest process.

Example- The user can easily search anything on the default google search bar.

4. Engagement—Users find it pleasant to use and appropriate for its industry/topic.

Example- The user can engage with others while using its own profile or web page and can use it for digital marketing and online businesses.

5.Error Tolerance—It supports a range of user actions and only shows an error in genuine erroneous situations. You achieve this by finding out the number, type and severity of common errors users make, as well as how easily users can recover from those errors.

- **Example**- The server rarely gives any errors and only after the user types anything wrong and gives suggestions to the user so that he/she can continue their work.

6. Ease of Learning—New users can accomplish goals easily and even more easily on future visits.

Example- the explorer is easy to use it has straight forward commands and can be used by beginners very easily. The user only has to type in the search bar and can program any command they want