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**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.**

**ANS : Following are some of the issues of the chair**

- **Adjustability**- The chair cannot be adjusted in different angles.
- **Seat height range** - the seat height cannot be adjusted to the height recommended for the worker(s) who will use it.
- **Backrest** - the backrest is not adjustable and will fail to provide support in both backward and frontward direction.
- **Seat surface** – The seat surface is not comfortable.
- **Armrests** – armrests are not provided and cannot support the arms of the user.

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

### **ANS : Paradigm :**

In science and philosophy, a paradigm (/ˈpærədaɪm/) is a distinct set of concepts or thought patterns, including theories, research methods, postulates, and standards for what constitutes legitimate contributions to a field.

Paradigm comes from Greek παράδειγμα (paradeigma), "pattern, example, sample"

Paradigms are historically and culturally bound. For example, a modern Chinese medical researcher with a background in eastern medicine, will operate within a different paradigm than a western doctor from the 1800s.

### **What is a Paradigm Shift?**

"The successive transition from one paradigm to another via revolution is the usual developmental pattern of mature science" - Kuhn, The Structure of Scientific revolutions

It is very common for scientists to discard certain models or pick up emerging theories. But once in a while, enough anomalies accumulate within a field that the entire paradigm itself is required to change to accommodate them.

A paradigm shift is not a threat to science, but rather the very manner in which it progresses. Normal science is the step-by-step scientific

process, which builds patiently upon previous research. Revolutionary science, often 'fringe science' questions the paradigm itself.

**Question3: Explain Design Rationale. Write and explain the types of design rationale.**

**ANS : Design Rationale:**

A design rationale is an explicit documentation of the reasons behind decisions made when designing a system or artifact. As initially developed by W.R. Kunz and Horst Rittel, design rationale seeks to provide argumentation-based structure to the political, collaborative process of addressing wicked problems.

A design rationale is the explicit listing of decisions made during a design process, and the reasons why those decisions were made.[2] Its primary goal is to support designers by providing a means 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 :**

**\*Argumentation based** - the design rationale is primarily used to represent the arguments that define a design [Garcia, 1993]. 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 [Garcia, 1993]. 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 [Gruber, 1990]. 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. In Ganeshan, et. al. [1994], 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 one 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.**

**ANS : Good web page that illustrates the principle of consistency.**



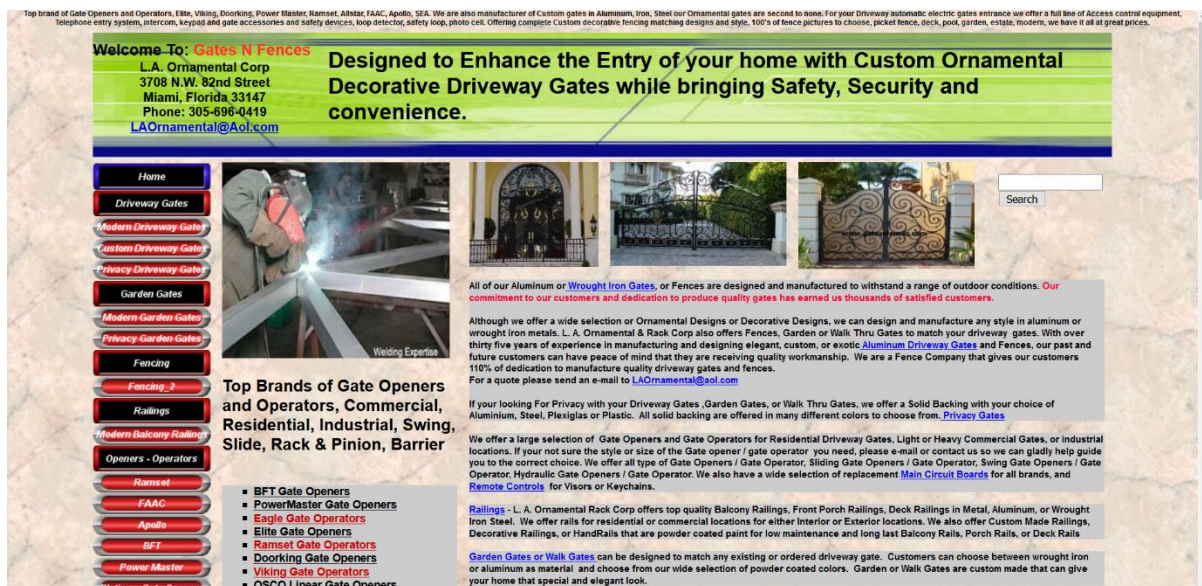
<https://www.yahoo.com/>

Yahoo is one of the pioneers in the top 10 most popular websites in 2017 rating. It is the oldest and second most visited search engine on the web. The site was founded in January 1994 by Jerry yang and David Filo, electrical engineering graduate students from Stanford University. They created a website, named "Jerry and David's Guide to the World Wide Web".

Apart from its globally recognized web portal, search engine Yahoo! Search, the site provides a lot of services, including Yahoo! Directory, Yahoo! Mail, Yahoo! News, Yahoo! Finance, Yahoo! Groups, Yahoo! Answers, advertising, online mapping, video sharing, etc. There are 700 million active monthly users on Yahoo. However, in the era of Google and Facebook, the website is facing difficulties to make its positions in the list.

When it comes to stats, the site is ranked number 6th globally and, in the US,, with a substantial number of visitors coming from India, Taiwan, Indonesia, and Brazil.

## Bad web page that illustrates the principle of consistency



<http://www.gatesnfences.com/>

This Florida-based company might have a site design that's stuck in the past, but they've also decided that the best way to encourage user engagement is to completely bombard them with information on the homepage. A few small, low quality images are

scattered throughout the page, but nothing to break up the large amount of text.

**Question5: Write the Shneiderman's 8 Golden Rules.**

**ANS :** 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 dialog 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.**

**ANS :** Internet explorer has supported its user from a very long time and was one of the first browsing software in the history. There are five different usability goals of internet explorer which are as follow

**\*Effectiveness:** It supports 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.

**\*Efficiency:** Users can perform tasks quickly through the easiest process.

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

**\*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.

**\*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.

**\*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.

**THE END**