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***BS COMPUTER SCIENCE***

***HCI***

***FINAL EXAM***

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**Question 1: (10) 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**

1. This chair is not move able it is fix so the employee cannot move on it so it is not comfortable.
2. It is wooden chair which is not comfortable because its seat is so hard.
3. This chair is not in 90 angles.
4. There are no handle in it.
5. No back support.

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

**Ans:**

**Paradigm**

The collection of beliefs and concepts is what is known as a **paradigm**, which is a set of theories, assumptions, and ideas that contribute to your worldview or create the framework from which you operate every day. For example, you've probably heard the phrase 'the American way of life,' which is a paradigm because it refers to a collection of beliefs and ideas about what it means to be American. For people who find this paradigm very important, it may serve as the foundation of how they view or interact with the world around them. This emphasizes one of the most important purposes of a paradigm, which is that it is comprised of beliefs and ideas that form a framework to approach and engage with other things or people.

**Paradigm Shifts**

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. For example, the assembly line created a substantial paradigm shift, not only in the auto industry but in all other areas of manufacturing as well.

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

**Ans:**

**Design rationale:** A design rationale is the explicit listing of decisions made during a design process, and the reasons why those decisions were made. Its primary goal is to support designers by providing a means to record and communicate the argumentation and reasoning behind the design process

A design rationale is a useful design tool because it explicitly lays out the reasoning behind a design process and it forces designers to be explicit about what they are doing and why they are doing it. In particular a design rationale can be used after a product has been completed in order to analyze why a product was a success or failure. If a similar product is being designed subsequently then its designers can refer to a design rationale to discover why earlier products were designed the way they were, and with the benefit of hindsight judge whether the earlier design decisions were successful and warrant repeating.

#### **Types of Rationale**

Rationale can be classified into several types. These types are not mutually exclusive and some systems may support multiple types of rationales. The following types of rationale are discussed in this document

- ***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.

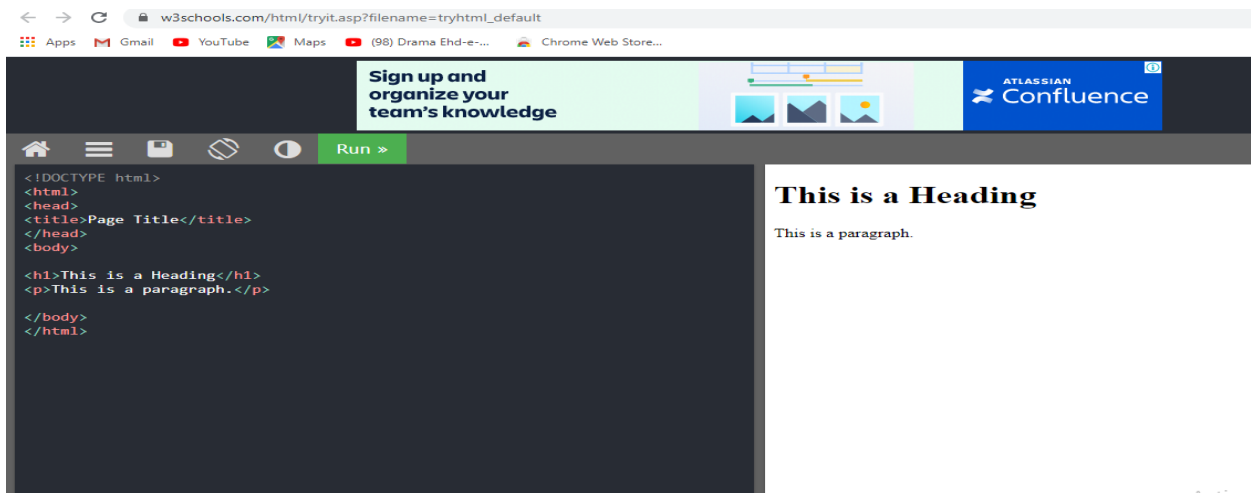
- **Process-based** -- the DR capture is integrated into the design process itself which guides the format of the rationale. In Ganesh an, et. al. [1994], the design description is modified only by changes to and refinements of the design objectives, thus capturing the rationale as part of the design 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: (10) 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.**

**Ans:**

The good one example of consistency is.

When we click on try it button then on the next page we can run these program. It is easy for the user.



The bad one example of consistency is

This is a bad example because the “Submit” button appears in different places when filling the report.

Patient: **Marva Jones (4)**  
DOB: 1967-01-23 Age: 46 Encounter History ▾

### Report - Standard Measures

Target Date: 2013-05-10 07:23:56

Rule Set: **Passive Alert Rules** ▾

Plan Set: **-- Ignore --** ▾

Provider: **-- All (Cumulative) --** ▾

Provider Relationship: **Primary** ▾

Please input search criteria above, and click Submit to view results.

Patient: **Marva Jones (4)**  
DOB: 1967-01-23 Age: 46 Encounter History ▾

### Report - Automated Measure Calculations (AMC)

Begin Date:

End Date: 2013-05-10 07:27:07

Provider: **-- All (Cumulative) --** ▾

Provider Relationship: **Primary** ▾

Please input search criteria above, and click Submit to view results.

## **Question 5: Write the Shneiderman's 8 Golden Rules.**

**Ans:**

### **Shneiderman's 8 Golden Rules**

1. Strive for consistency
2. Enable frequent users to use shortcuts
3. Offer informative feedback
4. Design dialogs to yield closure
5. Offer error prevention and simple error handling
6. Permit easy reversal of actions
7. Support internal locus of control
8. Reduce short-term memory load

## **Question 6: You are familiar with internet explorer. Explain any five usability goals in terms of internet explorer. Justify each goal with example**

### **Ans:**

Here we'll talk about it starting with the five characteristics that all usable products have. Let's review them one by one:

1. Effective to use (Effectiveness)
2. Efficient to use (Efficiency)
3. Engagement
4. Error Tolerance
5. Ease of Learning ( learnability)

### **Effectiveness**

Effectiveness is about the high degree of accuracy under which users can complete their goals. The product has to be able to support the user while performing tasks.

For example, validating each field of a form accordingly (the postal code field has to be 5 characters long and only contain numbers) and be informative while doing it so, this can reduce data entry errors and help the user finish the task correctly. For example, validating each field of a form accordingly (the postal code field has to be 5 characters long and only contain numbers) and be informative while doing it so, this can reduce data entry errors and help the user finish the task correctly.

### **Efficiency**

Effectiveness, as we covered above, is about the accuracy of the user to complete a task, while **efficiency** is how fast can the user finish the task. It's all about speed!

For example internet explorer web and mobile page shown have the same structure and the content also remains the same; but the main menu on the mobile site is no longer displayed as a horizontal navigation but as a hamburger menu containing the

same sections. The layout changed to a more simplified version of the desktop site and the shortcuts were only maintained for the sign-up option and the search.

## **Engagement**

Engagement happens when the user finds your product enjoyable and satisfactory to use. Yes, aesthetics and great UI elements start to have relevance here, but they're not the only factors implicated in creating a gratifying product that users like to interact with.

## **Error Tolerance**

Trying to minimize errors from occurring but if an error does occur make sure the users can quickly and easily recover from it and get back to what they were doing. In Human-Computer Interaction (HCI) this is known as error tolerance.

## **Ease of Learning**

The ease of learning also applies when a product is releasing new features or renewing functionality, you want your returning users to be happy with the improvements you make instead of being frustrated because everything has changed and it doesn't work as it used to.

The solution for ease of learning is designing products matching the user's mental models (representation of something existing in the real world).

For example, in the internet explorer creating an "introduction" to the product that explains the features and tools it has, with the right language and the right visual aid can help to improve the ease of learning