

NAME : Asad ullah Khan

I.D : 6830

Subject : Human Computer
Interaction

Teacher : Mrs. Shahab ul Islam

Program : BS(SE) 'B'

Date : 23/09/2020

Q1:-

Write and explain the main goal of HCI?

Ans:-

A basic goal of HCI is to improve the interaction between users and computers by making computer more usable and receptive to the user needs. Specially, HCI is concerned with:

- 1) Methodologies and processes for designing interfaces.
- 2) Methods for implementing interfaces.
- 3) Techniques for evaluating and comparing interfaces.
- 4) Developing new interfaces and interaction techniques.
- 5) Developing descriptive and predictive models and theories of interaction.

(2)

Q2 :-

Write and explain the terms of interaction?

Ans:-

Terms of Interaction:-

Traditionally, the purpose of an interactive system is to aid a user in accomplishing goals from some application domain. Tasks are operations to manipulate the concept of domain.

Some term of interaction:

1) Domain or problem Domain:-

A problem domain is the area of expertise or application that need to be examined to solve a problem.

A problem domain is simply looking at only the topics of an individual interest and excluding everything else.

2) Goals:-

A goal is a desired result a person or a system envision, plans

(3)

and commits to achieve a personal or organizational desired end-point in some sort of assumed development.

Many people endeavor to reach goals within a finite time by setting deadlines.

3) Task :-

A task is an activity that needs to be accomplished within a defined period of time or by a deadline to work toward work-related goals.

A task can be broken down into assignments which should also have a defined start and end date or a deadline for completion.

Q 3 :-

Write the 8 Golden Rules of Shneiderman?

Ans :-

Shneiderman's 8 Golden Rules :-

- 1) Strive for consistency.
- 2) Enable frequent users to use shortcuts.
- 3) Offer informative feedback.

(4)

- 4) Design dialogs to Field 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.
-

Q4:-

What is paradigm and what do you mean by paradigm shift?

Ans:- Paradigm:-

The collection of belief and concept is what is known as Paradigm, which is a set of theories, assumption, and ideas that contribute to your worldview or create the framework from which you operate every day.

(5)

Paradigm Shift:-

A paradigm shift is a concept identified by the American physicist and philosopher Thomas Kuhn, is a fundamental change in the basic concept and experimental practices of a scientific discipline. Even though Kuhn restricted the use of the term to the natural sciences, the concept of a paradigm shift has also been used in numerous non-scientific contexts to describe a profound change in a fundamental model or perception of events.

Q5:-

Explain Design Rational and write and explain the type of Design Rational ?

Ans:- Design Rational:-

A design rational is the explicit listing of decision made during a design process and the reason why

(6)

those decision was made. Its primary goal is to support designers by providing a means to record and communicate the argumentation and reasoning behind the design process.

Types of Design Rational :-

There are two types of design Rational.

1) Process oriented :-

A process oriented is preserves order of delegation and decision making.

2) Structure oriented :-

A structure oriented is emphasizes post hoc structuring of considering design alternative.

Two example :-

1) Issue Based Information System (IBIS).

2) Design space analysis.

(7)

Q6:-

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 of web pages along with URL and the written explanation justifying your good and bad example in your answer. To provide the relevant example browser the Internet?

Ans:-

As you design the user interface, it is important to keep in mind the interaction that take place between the human recognition and the screen you are designing for. Making thing easier for your users means not forcing them to learn new representation or toolsets for each task. Reducing the length of the thinking process by eliminating confusion is also a sure bet when it comes to improving user experience.

(8)

1) Reduce Learning:-

Consistency limits the number of ways action and operation are represented, ensuring that users do not have to learn new representations for each task. Further, establishing design norms like following platform conventions allow users to complete new tasks without having to learn a whole new toolset. This may sound like a simple concept, but there are examples out there that exhibit a lack of necessary consistency in their designs. One such example that portrays this issue is the website for Xfinity by Comcast Corporation, an American mass media company. In their website, for Xfinity not only is the secondary menu inconsistent almost every time the user clicks into other pages, but it is also inconsistent for the primary menu as well. Let's take a look and compare the three different pages of the website: Homepage, my Xfinity and TV.

(9)

2) Eliminate Confusion :-

User's tends to apply rules they have experienced outside of your websites or product, bringing in a set of their own expectation, knowing that, ~~we~~ we should be mindful of whether or not we are causing confusion and alienation when we deviate from design standard and conventions.

Further, user should not have to spend time wondering whether different words, interactions or actions actually mean the same thing within the context of your product. Confusion occurs when people are enable to 'piece together' informations, and at times, obstructing them from achieving something. When the users is hindered from achieving their goals, it's understandable that they can feel angry frustrated.

Q7:-

You are familiar with Google Chrome. Explain any five usability goal in terms of Google Chrome. Justify each goal with example?

Ans:-

"The extent to which a product can be used by specified user to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use".

This definition can be expanded, and made more comprehensive by including five characteristic which must be met for the users of a product:

- 1) Effective
- 2) Efficient
- 3) Engaging
- 4) Error Tolerant
- 5) Easy to Learn

(11)

1) Effective :-

Effectiveness is the completeness and accuracy with which users achieve specified goals. It is determined by looking at whether all work is correct.

For Example →

In interfaces to financial systems (such as banking machines) effective use of the system - withdrawing the correct amount of money, selecting the right account, making a transfer correctly - are more important than marginal gains in speed.

2) Efficient :-

Efficiency can be described as the speed in which user can complete the tasks for which they use the product. ISO 9241 defines efficiency as the total resources expended in a task. Efficiency metrics include the number of clicks or keystrokes required or the total 'time on task'.

For Example →

A knowledge base which doled out small snippets of information might be very difficult efficient.

if each retrieval was considered one task, but inefficient when the entire task of learning enough to answer a user's question is considered.

3) Engaging =

An interface is engaging if it is pleasant and satisfying to use. The visual design is the most obvious element of this characteristics. The style of the visual presentation, the number, functions and types of graphic images or colors (especially on websites), and the use of any multimedia elements are all parts of users immediate reactions.

For Examples →

All usability characteristics, these qualities must be appropriate to the task, users and context.

4) Error Tolerant ⇨

The ultimate goal is a system which has no errors. But product developers are human, and computer system far from perfect, so errors may occur. An error tolerant programme is designed to prevent error caused by the

(13)

* by the user's interaction, and to help the user in recovering from any errors that do occur.

For Example →

if a required element is missing simply presenting a way to fill in that data can make an error message look more like a wizard.

5) Easy to Learn → biggest objections to "usability" comes from people who fear that people it will be used to create product with a low barrier to entry, but which are not powerful enough for long, sustained use.

For Example :-

Built-in instruction for difficult or advanced task, access to just in time training elements, connections to domain knowledge bases which are critical to effective use.