ANN NYOKABI

AIIM/00476/2021

CAT 2 HCI

**Question 1**

Describe any FIVE advantages of Graphical User Interface GUI over other forms of HCI.

1. Ease of Use - GUIs are much easier for someone who has not learned to use them because they see the buttons, icons, Windows, and related processes. For example, a user may be familiar with a printer icon, which would not require him/her to write commands.

2. Visual Interaction - GUIs are user interfaces based on pictures. Thus, they can help users connect with the computer through the visualization of the systems, which makes them get along more freely and confidently than in the text.

3. Reduced Learning Curve - With GUIs, users can easily see what options are available, instead of trying to recall commands by themselves, which saves them a lot of time in their work operations. For example, toolbars in Microsoft Word lead the user through tasks.

4. Multitasking Capabilities—GUIs offer the use of windows and tabs, so a person can work on many tasks at a time and switch between them with the least effort. For example, one can go to multiple pages in different tabs.

5. Error Prevention and Feedback—GUIs improve the user experience by giving feedback immediately and taking control of the situation with warnings and tooltips. An example is a pop-up warning when deleting important files.

**Question 2**

Describe any **TWO** emerging HCI styles. **(6 marks)**

1. Voice Interaction   
Users interact with systems by providing voice commands. This is increasing accessibility and convenience. For example Virtual assistants -eg Alexa, Siri, and Google assistant.

2. Augmented Reality (AR) Interfaces:  
AR is an integration of digital information into the real world. Enhanced user experience because AR overlays virtual objects in physical environments.  
Example: AR applications include Pokémon GO or IKEA Place.

**Question 3**

Explain any **FOUR** Rules of user interface design. **(4 marks)**

1. Consistency:  
The design should be consistent throughout the interface so that it is predictable and thus easier to use. For example, buttons and menus should look the same throughout different pages.  
  
2. Feedback:

The design should be distinct and proceed immediately without any of the actions user feedback

3. Simplicity:  
The design should be simple, with no elements that confuse the user. For example, Use clear labeling and a few texts on buttons.  
  
4. Error Prevention and Recovery:Design interfaces such that they can minimize errors; if they happen, there will be easy fixes.

**Question 4**

Explain how you can achieve ‘usability’ in HCI design for any FIVE categories of users. (10 marks)

1. Novice users

Give those who are new step-by-step instructions and tutorials with prompts. First-time app users can be guided by clues and hints as they move through the tutorial process.

2. Expert Users

For professionals, offer shortcuts and advanced settings to maximize benefits. For instance, everyday laptop users may benefit the most from the hotkeys and command-line interfaces of their power computers.

3. Elderly Users

Large print, simple navigation, and voice commands should be applied to this type of user. Accessibility settings, such as 'accessibility mode,' can help people write large text or special symbols that are easy to read.

4. Children

The colorful and interactive nature of the interface is what the kids should get that this interface has a text-free layout with interesting graphics. Educational formations have been switched into games, such as ABCmouse, to make the studies more creative and fun.

5. Users with Disabilities

The program should offer varied accessibility options, among which are screen readers, high contrast, and a different input device such as eye tracking. An example is a website compliant with web content accessibility guidelines, WCAG.