

## Assignment No. 2

Q. 1 a) What is meant by GOMS? Give an example.

Ans: 1) GOMS stands for (Goals, operators, Methods and Selection).

2) GOMS is a family of predictive models of human performance that can be used to improve the efficiency of human machine interaction by identifying and eliminating unnecessary user actions.

3) Goals :- The goals describing what the user wants to achieve.

Operators :- These are the basic actions that the user must perform in order to use the system.

Methods :- These are typically several ways in which goal can be split into subgoals.

Example :-

Goals (G) as a task to do e.g. "Send e-mail" operators (O) as all actions needed to achieve the goal e.g. "amount of mouse click to send e-mail" Methods (M) as a group of operators e.g. "move mouse to send button, Click on the button".



Q.1 b) Define Cognitive Complexity theory  
Give an example.

Ans:- 1) Cognitive complexity refer to the number of mental structure an individual uses, how abstract they are and how they interest to shape his discernment.

2) Individuals with high Cognitive complexity have the capacity to analyze a situation to consistent elements. These individuals think in a multidimensional way.

3) Individuals with high Cognitive complexity are open to new information, highly flexibility, effectively, strategic planners, effective communicators, good leaders.

Example:-

It is a simple task than writing a term paper many more cognitive processes are involved in writing the paper, such as using online resources, doing effective research and writing within a specific style and tone.



Q.2 a) Describe in detail about hyper text, Multimedia, WWW?

Ans 8- i) Hyper text 8-

a) Hypertext is text displayed on a computer display or other electronic devices that references (hyperlinks) to other text that the reader can immediately access.

b) Hypertext documents are interconnected by hyperlinks, which are typically activated by a mouse click, hyper keypass set or screen touch.

c) The hyper-text enables the user to navigated through text in nonlinear way.

ii) Multimedia 8-

a) Multimedia is the use of a computer to present and combine text, graphics, audio and video with links and tools that let the user navigate, interact and create.

b) Multimedia is used to represent information in an interesting and interactive manner. It combines text, audio, video, graphics and animation.

ex 8- Text in fax, photographic images etc.



iii) WWW :-

a) WWW stands for World Wide Web. It is basically a system of Internet servers that support specially formatted documents.

b) The documents are formatted in a markup language called HTML (Hypertext Markup Language) that supports links to other documents, as well as graphics, audio and video files.

c) The world wide web (WWW or Web) consists of a worldwide collection of electronic documents called Web pages.



Q. 2 b) Differentiate linear text vs hyper text in communication.

Ans:-

| linear text   | hyper text  |
|---|---|
| 1> The linear text is Read only   | 1> Hypertext is Read / Write.   |
| 2> Refers to traditional text that needs to be read from beginning to the end | 2> It refers to text which links to other chunks text written same or different documents |
| 3> There is only one reading path which is decided by author                  | 3> It is an inter-connected network of documents linked.                                  |
| 4> Typically includes printed texted  | 4> It simply allows users to jump from one document to another.                           |
| 5> <u>ex</u> Novel, poetry, letters, textbook, Newspaper articles             | 5> It represents multimedia content in electronic text format.                            |



Q.3 a) Briefly explain about mobile Application medium Types.

Ans: The mobile medium type is the type of application framework or mobile Technology that presents content or information to the user. It is a technical approach regarding which type of medium to use.

This decision is determined by the impact it will have on the user experience.

SMS:

i) The most basic mobile application you can create is an SMS application.

ii) Although it might seem odd to consider text message applications, they are nonetheless a designed experience.

iii) Given the ubiquity of device that support SMS, these applications can be useful tools when integrated with other mobile application types.

For example, sending the keyword -Freebie 11 to a hypothetical Short Code - 12345 11



Q.3b) Give detail description about Mobile Ecosystem.

Ans:- 1) Mobile ecosystems can be broadly characterised as comprising the following core set of products:  
Mobile devices: smartphones and tablets which can connect to the internet.

There are some mobile ecosystem in HCI :-

1. Devices :- The mobile ecosystems encompasses a wide range of devices, including smartphones, tablets, wearables.

2. Operating Systems and platforms :-  
Mobile devices run on various operating systems, such as Android, iOS and others. Each operating system provides a unique set of user interface.

3) Applications :- Mobile apps play a central role in the mobile ecosystem.

4. App stores :-

App stores, such as the Apple App Store and Google play Store.



### 5) User Interface (UI) :-

Mobile user interface are designed to be touch-centric and user friendly.

6) Connectivity :- Mobile devices are designed to be constantly connected, whether through cellular networks.

There are other ecosystems in Hct are

- i) Location based services
- ii) Sensors
- iii) Accessibility
- iv) Security and privacy
- v) Ecosystem partners.



Q.4 a) What is Mobile information Architecture? Explain it with neat diagram.

Ans: Mobile Information Architecture refers to the organization and structure of information and content on mobile applications and websites.

The key elements of mobile information architecture :-

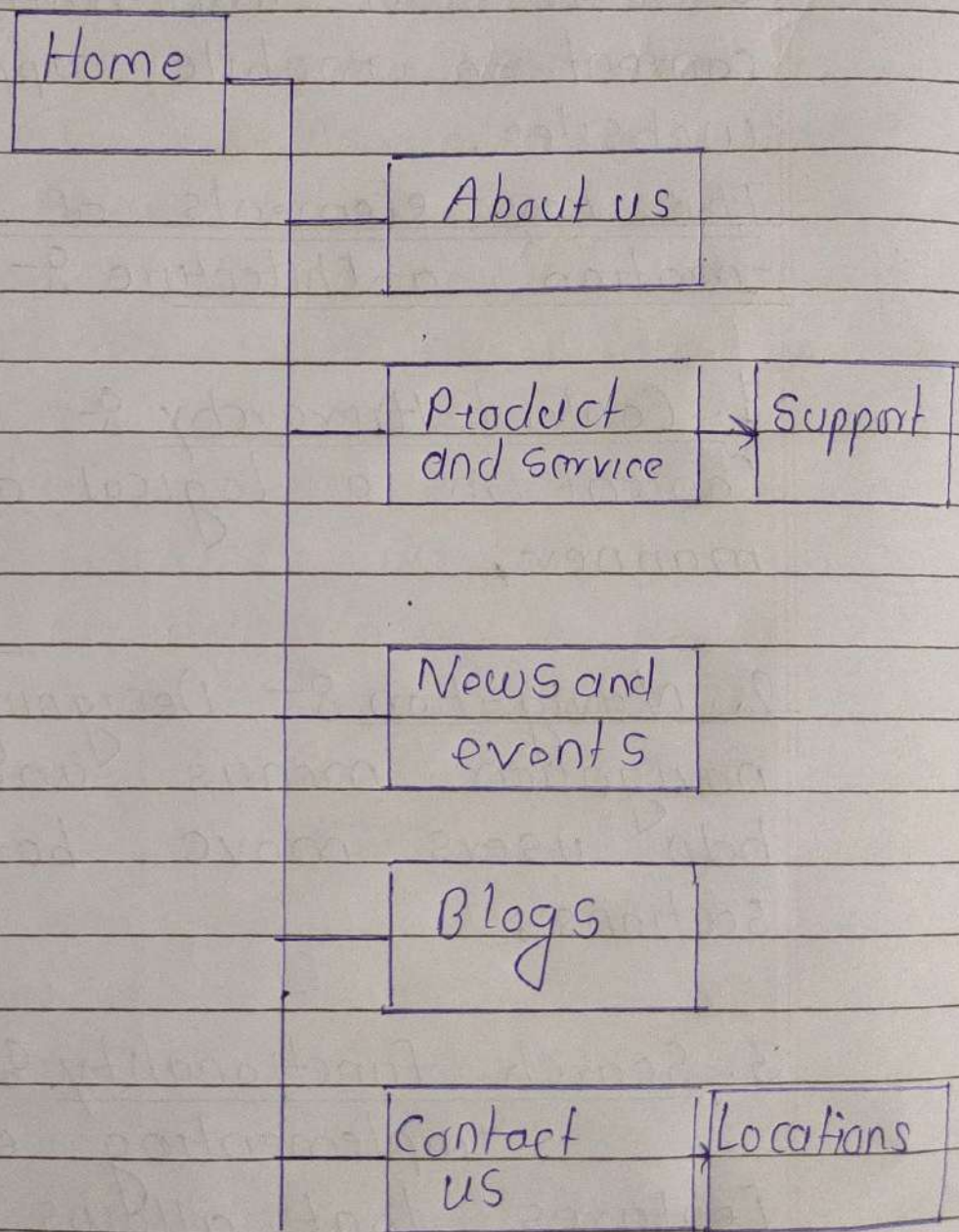
1. Content Hierarchy :- Structuring Content in a logical and hierarchical manner.

2. Navigation :- Designing intuitive navigation menus and control to help users move between different sections.

3. Search functionality :- Implementing effective search features that allows users to quickly locate specific information or products.



#### 4. Labels and Taxonomy 8- Assigning clear and consistent labels to Content





Q.4 b) Explain about Elements of Mobile Design.

Ans: There are ~~Six~~<sup>five</sup> elements of mobile design are :-

1. Context :-

The context is core to the mobile experience. As the designer it is your job to make sure that the user can figure out how to address context using your app.

2. Message :-

Message is the overall mental impression you create explicitly through visual design.

3. Look and feel :-

Look and feel is used to describe appearance, as in I want a clean look and feel or I want a usable look and feel.

4. Layout :-

Layout is an important design element, because it is how the user will visually process the page but the structural.



### 5) Color 8-

The fifth design element, color is hard to talk about in a black and white book.

The most common obstacle you encounter when dealing with color is mobile streams.



Q.5) Explain in detail about drag and drop operations.

Ans:- Move the pointer to the object press and hold down, the button on the mouse or other pointing device to 'grab' the object. "Drag" the object to the designed location by moving the pointer to this one "Drop" the object by releasing the button.

Working:-

1. Dragging:-

- Initiation:- The drag and drop process usually begins when the user select an objects, file or text by clicking on it.

- Feedback:- As the user starts dragging a visual representation of the selected item (often called a "drag image or drop") is created

- Constraints:- The cursor typically remains within the boundaries of the application or window and the dragged.



## 2. Dropping :-

- Target Selection :- To complete the drag and drop operation, the user must identify the target location where they want to place the dragged item.
- Hovering :- At the user approaches a potential drop target, the system often provides visual cues to indicate whether the drop is allowed or not.
- Release :- When the user is satisfied with the target location, they release the mouse button.



Q.5 b) Describe in detail in about Direct Selection?

Ans:-

Direct selection in the context of Human - Computer Interaction (HCI) refers to a user interface design method that allows user to directly interact with on-screen objects or elements, such as buttons, icons or links to perform actions or make selections.

Direct Selection is a user interface technique where user interact with graphical elements on the screen by directly pointing.

Types of Direct Selection:-

- 1) Point and click.
- 2) Drag and drop
- 3) Touch Screen Interaction
- 4) Usability and Efficiency
- 5) Feedback
- 6) Challenges
- 7) Gestures and Multi-Touch.



Q.6 a) Explain in detail about Contextual tools ?

Ans:- Contextual tools in HCI refer to Software or hardware elements that help the system understand and adapt to the user context.  
Type of contextual tools :-

1. Sensors :- Device like GPS, accelerometers, gyroscope.
2. User profiling :- Collecting data about habit and behaviour of system.
3. Context-aware Software :- Applications and system that adjust their behaviour based on user context.
4. Contextual user interface :- Adaptive interface that change their layout and content based on context.

Usage of Contextual tools :-

- a. Adaptive Content
- b. Location based Services
- c. contextual Recommendations
- e. Situational Awareness



Q.6 b) Describe in detail about overlay and its types?

Ans:-

An overlay is graphical or informational layer that is placed on top of an existing image, video or screen content to provide additional information.

There are some types of overlays :-

### 1. Text overlay :-

The text overlay are used to display textual information on top of an image or video.

ex:- date and time stamps on photos.

### 2. Image Overlay :-

It is placing one image on top of another to create a composite image to add branding elements.

ex Watermarking images.

### 3. Video Overlay :-

Video overlays are used to superimpose one video on top of another, often for picture in picture effects.

ex Gaming streams with a webcam view in a corner.



#### 4. Interactive Overlay :-

Interactive overlays enable user interaction by adding clickable elements, buttons.

ex Touchscreen interface on ATMs.

#### 5. Augmented Reality (AR) overlay :-

Ar overlays blend digital content with real world through a devices camera view.

ex Pokemon Go's virtual creatures in the real world.