

## Chp # 01

### Input Output Channels

Input Output channels.

In an interaction with a computer, the user receives information that is output by computer and responds by providing input to computer.

The user's output becomes the computer's output and vice versa.

### Vision:

Vision refers to the visual perception and interaction between users and computer interfaces. It involves understanding how people perceive and process visual information.

### Human Eye:

Human eye plays a crucial role in visual perception and interaction with computer interfaces. It helps us see and interpret the information displayed on screens.

## Visual Perception:

It refers to how humans interpret and understand visual information presented on screen. It involves processes like recognizing shapes, colors, and patterns.

## Hear Reading

It refers study and design of auditory interfaces and interactions for human-computer interaction.

## Reading

It is the process of interpreting and understanding written text on computer interfaces.

It involves designing interfaces that present text in a clear manner.

## Human Ear:

It is an important aspect of auditory perception and interaction with computer interfaces.

It allows us to hear and interpret sound cues such as notifications.

## Touch

between through gestures

## Human

memory ability retention to answer

symbolic a response

language

## Touch:

It refers to the interaction between users and computer interfaces through physical contact. It involves gestures, tapping, swiping etc.

## Human Memory:

Human memory refers to the cognitive ability to encode, store and retrieve information. It allows us to remember past events, facts and experiences.

### Short Term Memory

It is the temporary storage system that holds information for a short period. It allows us to retain and manipulate information for immediate tasks.

### Long Term Memory

It is more permanent storage system that holds information over an extended period. It allows us to remember events, facts even years later.

## Emotion:

It refers to the feelings and emotions we experience in response to different situations, events or stimuli. Emotions can influence our thoughts, behaviour and overall well-being.

## Chp#2

# The Computer

## Introduction:

Computers refer to the electronic devices that we interact with to perform various tasks. They can include desktop computers, laptops, tablets etc.

## Typical computer System:

A typical computer system includes hardware components like CPU, RAM, Storage, input-output devices (monitor, speakers etc.).

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## Text Entry Devices:

### i) **AlphaNumeric Keyboard:**

It is a keyboard that includes both letters and numbers on its keys.

### **QWERTY Keyboard**

It is a standard keyboard layout that arranges the keys in top left corner as Q-W-E-R-T-Y.

### **Alphabetic Keyboard:**

It is a keyboard that includes letters of alphabets on its keys.

**DVORAK Keyboard:** It is an alternative keyboard layout designed to increase typing efficiency and reduce finger movement.

**CHORD Keyboards:** A type of keyboard that uses combination of keystrokes to input characters or commands.

## **Handwriting Recognition:**

A technology that converts hand written text into digital text.

## **Speech Recognition:**

A technology that converts spoken words into written text.

## **Mouse :**

A device used to move cursor and interact with computer screen

## **TouchPad:**

It is a touch-sensitive surface on a laptop that replaces the need for a mouse .

## **Display Devices**

### **Bitmap display,**

Type of computer screen that uses a grid of pixels to display images and text.

### **LCD:**

Type of screen that uses liquid crystals to display images and text.

**Special display:** Unique type of screen that offers distance features or capabilities.

**Large and Situated display:**

Screens that are physically big in size and strategically positioned for optimal visibility.

**Digital paper:** Type of screen that mimics the appearance and texture of real paper.

**Printing:** It refers to the process of reproducing text or images on paper or other materials using a printing device.

**Scanning:** It is a process of converting physical documents or images into digital files using a scanner.

**Processing:** It refers to the manipulation and transformation of data by a computer to produce meaningful results.

## Networked computing:

It involves the use of computer networks to connect and communicate between multiple devices or systems.

## Chp # 3

### The Interaction

#### Execution - evaluation cycle: Practical Example

There are following 7 stages  
of this cycle.

##### 1. Establishing the goal:

The user's goal is to find  
a nearby coffee shop to meet  
a friend.

##### 2. Forming the Intentions:

The user intends to search  
for coffee shops using a  
maps application.

##### 3. Specifying the action sequence:

The user inputs their location  
and searches for coffee shops.

##### 4. Executing the action:

The maps application displays  
a list of nearby coffee shops.

## **Perceiving the system state:**

The user sees the map with markers indicating the locations of coffee shops.

## **Interpreting System State**

The user identifies the coffee shop that seems most convenient based on its proximity and reviews.

## **Evaluating system state:**

The user decides if the coffee shop meets their goal based on factors like distance, rating and amenities.

By going through these steps, the user interacts with the system, evaluates the information presented, and makes a decision that aligns with their goal and intention.

## Physical Environment of Intentions:

It refers to the surrounding space and objects where the user interacts with a computer system.

### Health Issues

#### Physical position:

It can impact comfort and ergonomics.

#### Temperature:

Ambient temperature of the environment can influence user comfort and concentration levels during interaction with computer systems.

#### Light:

The quality and intensity of light can effect visibility, eye strain and overall user experience with computer interfaces.

#### Noise:

Presence of background noise

in the environment can impact concentration, focus and the ability to effectively interact with computer systems.

### Time:

The temporal factors such as time of day or time pressure can influence user behaviour, task performance and decision making during HCI-interactions.

## Interaction Styles

### Command Line Interface:

CLI is a text-based user interface where users interact with a computer system by typing commands in cmd.

**Exp:** An example of CLI is "cd" (change directory).

### Menus:

It presents a list of options for users to choose from.

**Exp:** An example of this is file menu in text editor.

which includes the options such as "New", "Open", "Save", and "Print".

### **Natural Language**

The ability of a computer system to understand and process human language in a way that is similar to how humans communicate with each other.

Exp: NLP

### **Q/A and Query Dialogue:**

Q/A refers to a conversation between a user and a computer system where the user poses a question or a query and the system provides a response or answer.

### **Formfills and Spreadsheet:**

It refers to the process of filling out electronic forms or field in a computer interface.

Exp: Online registration.

Spreadsheet is a digital document that organizes data in a tabular format using rows and columns.

**Exp:** Microsoft Excel.

### **WIMP:**

It refers to the combination of visual elements such as windows, icons, menus and pointers that facilitate user interaction with a computer system.

### **Point and click:**

In this the user use a pointing device, such as a mouse, to select or interact with graphical elements on a computer screen.

### **Three dimensional Interface:**

An interface that provides a visual representation of objects or elements in a 3D space.

**Exp:** Virtual Reality (VR)

### **Experience:**

It is overall expression or feeling that users have when interacting with computer system such as usability, satisfaction etc.

### **Engagement:**

It is level of involvement, interest, attention that users have during the interaction with computers.

**Fun:** It refers to the enjoyment and entertainment that users derive from using a computer system. It involves element of pleasure, amusement and positive emotions.