**Date:29.10.25**

**TASK:12**

# Implementation of Human Computer Interaction

**CO4, CO5 S3**

# PROBLEM STATEMENT

Human-Computer Interaction (HCI) focuses on the design and use of computer technology, emphasizing the interfaces between people (users) and computers. The problem is to design and implement an interactive system that improves usability, efficiency, and user experience while minimizing user errors and effort.

# AIM

To study and implement a simple model of Human-Computer Interaction that demonstrates how users interact effectively with a computer system using an intuitive interface.

# OBJECTIVE

* o understand the fundamental principles of HCI.
* To design a user-friendly and responsive interface.
* To apply usability and interaction design concepts in developing systems.
* To evaluate user satisfaction and efficiency in human-computer communication.

# DESCRIPTION

Human-Computer Interaction (HCI) is an interdisciplinary field that integrates computer science, psychology, design, and ergonomics. It deals with creating systems that allow users to perform tasks efficiently and enjoyably. Good HCI design focuses on accessibility, usability, and intuitiveness. Techniques such as graphical user interface (GUI) design, user-centered design (UCD), and usability testing help ensure effective communication between users and machines. For example, designing an interface for a login form or a simple drawing tool demonstrates the interaction principles between human inputs and computer responses.

# ALGORITHM

1. Start the program.
2. Display a user interface with fields for username and password.
3. Wait for the user to input credentials.
4. Validate the entered data against stored credentials.
5. If valid, display a success message or redirect to the next page.
6. If invalid, prompt an error message.
7. End the program.

# PROGRAM

import tkinter as tk

from tkinter import messagebox def login():

username = entry\_username.get() password = entry\_password.get()

if username == "admin" and password == "1234": messagebox.showinfo("Login Successful", "Welcome, " + username + "!")

else:

messagebox.showerror("Login Failed", "Invalid username or password.") root = tk.Tk()

root.title("HCI Login Interface") root.geometry("300x200")

tk.Label(root, text="Username:").pack(pady=5) entry\_username = tk.Entry(root) entry\_username.pack(pady=5)

tk.Label(root, text="Password:").pack(pady=5) entry\_password = tk.Entry(root, show="\*") entry\_password.pack(pady=5)

tk.Button(root, text="Login", command=login).pack(pady=10) root.mainloop()

# OUTPUT

**CONCLUSION**

The concept of Human-Computer Interaction was successfully implemented through a simple login interface. The program demonstrates how usability and feedback mechanisms are essential for effective user-system communication. This exercise highlights the importance of intuitive design and responsiveness in improving user experience.