# EXPERIMENT 03: CLI,GUI AND VUI

AIM: The aim is to develop and compare Command Line Interface (CLI), Graphical User Interface (GUI), and Voice User Interface (VUI) for the same task, and assess user satisfaction using Python (with Tkinter for GUI and Speech Recognition for VUI) and Terminal.

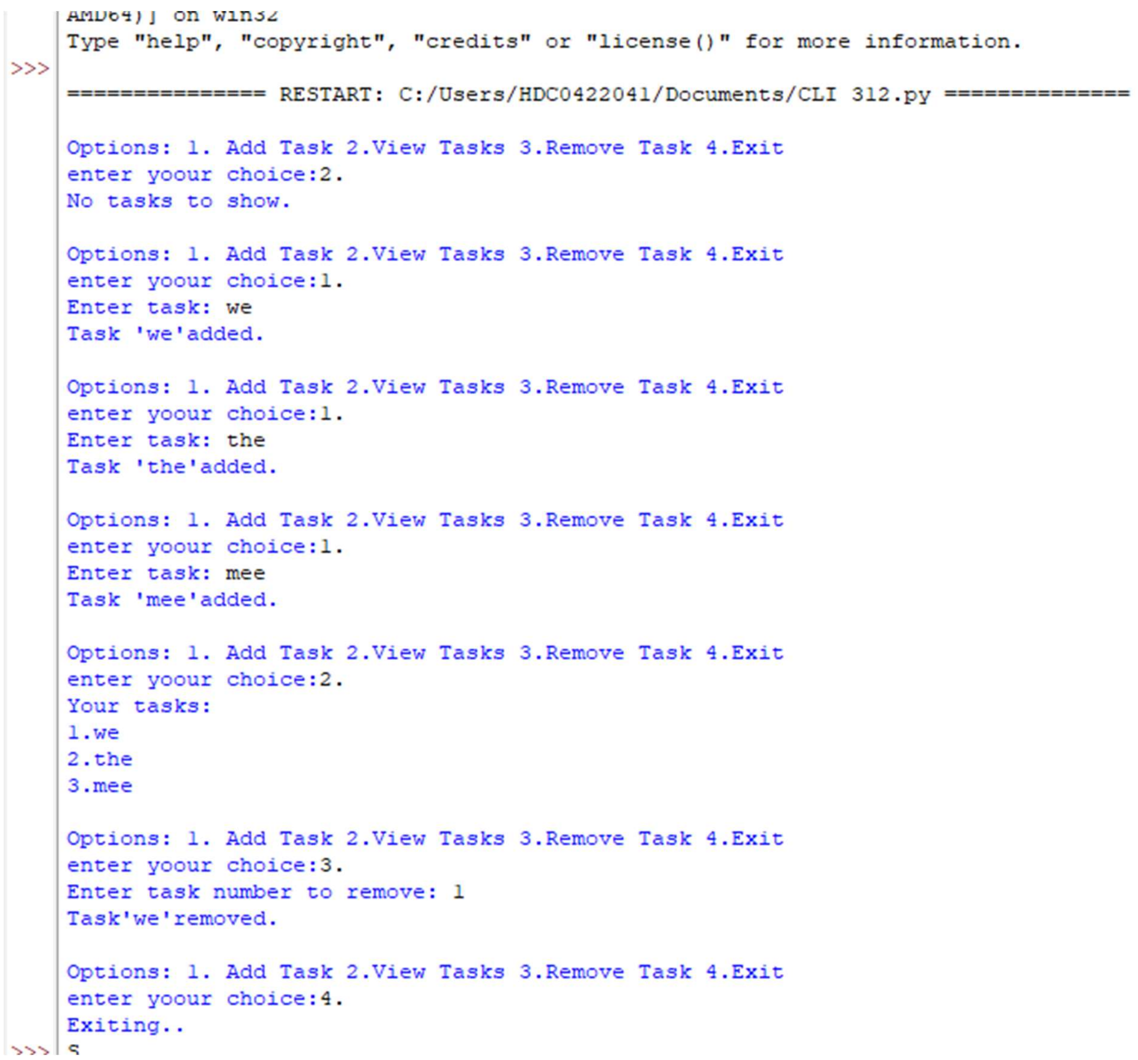
PROCEDURE:

1. Implement a **CLI To-Do List** in Python for adding, viewing, and removing tasks via terminal input.
2. Develop a **GUI To-Do List** using Tkinter with text input, buttons, and a task list display.
3. Build a **VUI To-Do List** using SpeechRecognition and pyttsx3 for voice commands.
4. Compare user experience across CLI, GUI, and VUI interfaces.

PROGRAM:

CLI- Command line interface

```python
tasks=[]
def add_task(task):
    tasks.append(task)
    print(f"Task '{task}'added.")

def view_tasks():
    if tasks:
        print("Your tasks:")
        for idx,task in enumerate(tasks,1):
            print(f"{idx}.{task}")

    else:
        print("No tasks to show.")
def remove_task(task_number):
    if 0< task_number <= len(tasks):
        removed_task=tasks.pop(task_number-1)
        print(f"Task'{removed_task}'removed.")
    else:
        print("Invalid task number.")
def main():
    while True:
        print("\nOptions: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit")
        choice=input("enter yoour choice:")

        if choice=='1.':
            task=input("Enter task: ")
            add_task(task)
        elif choice=='2.':
            view_tasks()
        elif choice == '3.':
            task_number=int(input("Enter task number to remove: "))
            remove_task(task_number)
        elif choice =='4.' :
            print("Exiting..")
            break
        else:
            print("Invalid choice. Please try again.")
if __name__=="__main__":
                  main()
```

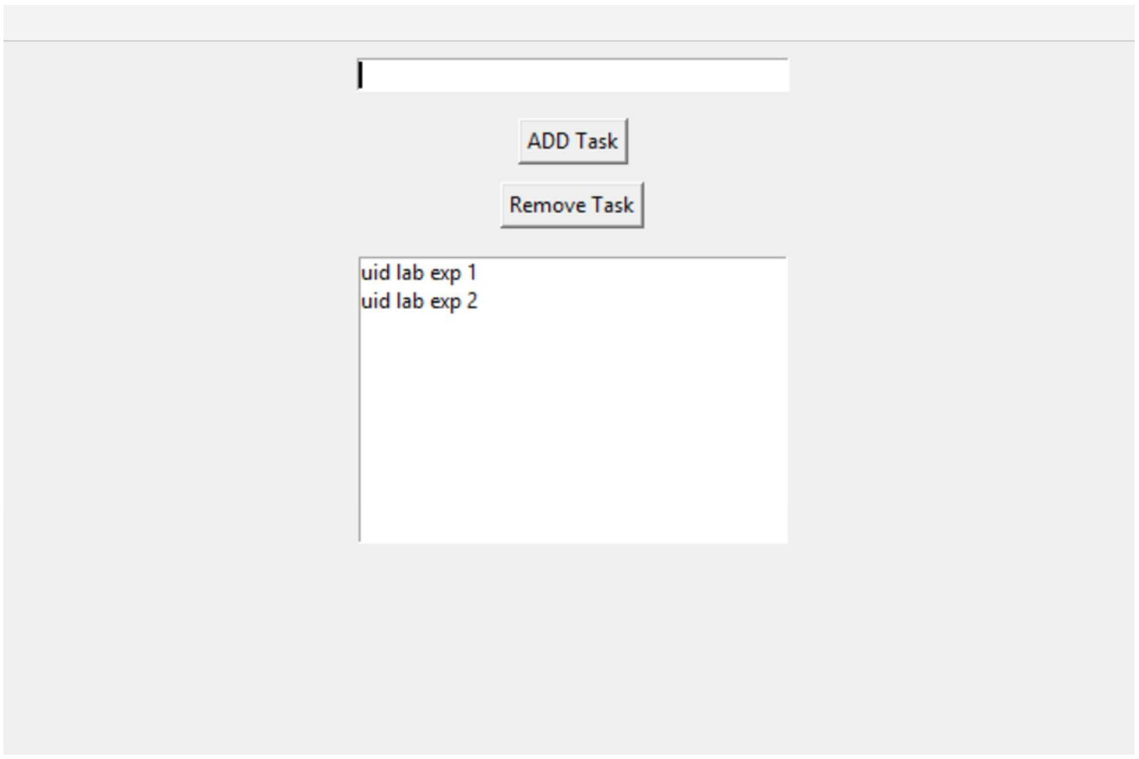


```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
================ RESTART: C:/Users/HDC0422041/Documents/CLI 312.py ==============

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:2.
No tasks to show.

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:1.
Enter task: we
Task 'we'added.

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:1.
Enter task: the
Task 'the'added.

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:1.
Enter task: mee
Task 'mee'added.

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:2.
Your tasks:
1.we
2.the
3.mee

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:3.
Enter task number to remove: 1
Task'we'removed.

Options: 1. Add Task 2.View Tasks 3.Remove Task 4.Exit
enter yoour choice:4.
Exiting..
>>>
```

GUI – Graphical User Interface

```python
import tkinter as tk
```

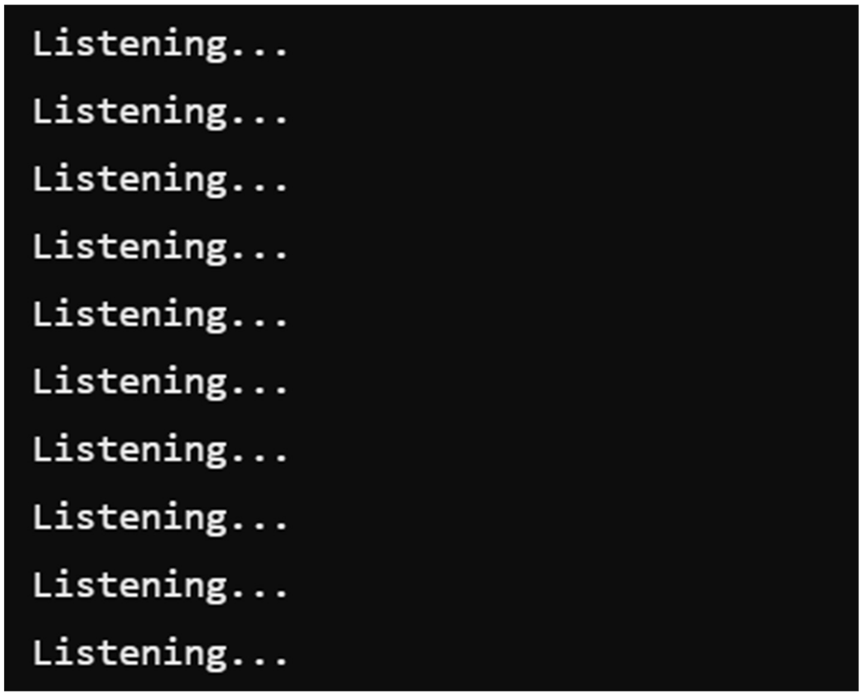
```python
from tkinter import messagebox
tasks = []
def add_task():
    task = task_entry.get()
    if task:
        tasks.append(task)
        task_entry.delete(0, tk.END)
        update_task_list()
    else:
        messagebox.showwarning("Warning","Task cannot be empty.")
def update_task_list():
    task_list.delete(0, tk.END)
    for task in tasks:
        task_list.insert(tk.END, task)
def remove_task():
    selected_task_index = task_list.curselection()
    if selected_task_index:
        task_list.delete(selected_task_index)
        tasks.pop(selected_task_index[0])
app = tk.Tk()
app.title("To-Do List")
task_entry = tk.Entry(app, width=40)
task_entry.pack(pady=10)
add_button = tk.Button(app, text="ADD Task",command=add_task)
add_button.pack(pady=5)
remove_button = tk.Button(app, text="Remove Task", command=remove_task)
remove_button.pack(pady=5)
task_list = tk.Listbox(app, width=40, height=10)

task_list.pack(pady=10)
app.mainloop()
```



uid lab exp 1
uid lab exp 2

VUI – Voice User Interface

```python
import speech_recognition as sr
import pyttsx3

tasks = []
recognizer = sr.Recognizer()
engine = pyttsx3.init()

def add_task(task):
    tasks.append(task)
    engine.say(f"Task {task} added")
    engine.runAndWait()

def view_tasks():
    if tasks:
        engine.say("Your tasks are")
        for task in tasks:
            engine.say(task)
    else:
        engine.say("No tasks to show")
    engine.runAndWait()

def remove_task(task_number):
    if 0 < task_number <= len(tasks):
        removed_task = tasks.pop(task_number - 1)
        engine.say(f"Task {removed_task} removed")
    else:
        engine.say("Invalid task number")
    engine.runAndWait()

def recognize_speech():
    with sr.Microphone() as source:
        print("Listening...")
        audio = recognizer.listen(source)
        try:
            command = recognizer.recognize_google(audio)
            return command
        except sr.UnknownValueError:
            engine.say(";Sorry, I did not understand that")
            engine.runAndWait()
            return None

def main():
    while True:
        engine.say("Options: add task, view tasks, remove task, or exit")
        engine.runAndWait()
        command = recognize_speech()
        if not command:
            continue
        if "add task" in command:
            engine.say("What is the task?")
            engine.runAndWait()
            task = recognize_speech()
            if task:
                add_task(task)
        elif "view tasks"in command:

            view_tasks()
        elif "remove task" in command:
            engine.say(";Which task number to remove?")
            engine.runAndWait()
            task_number = recognize_speech()
            if task_number:
                remove_task(int(task_number))
        elif "exit" in command:
            engine.say(";Exiting...")
            engine.runAndWait()
            break
        else:
            engine.say(";Invalid option. Please try again.")
            engine.runAndWait()
if __name__ == "__main__":
    main()
```



```
Listening...
Listening...
Listening...
Listening...
Listening...
Listening...
Listening...
Listening...
Listening...
Listening...
```

RESULT:

Thus the to do list for GUI CLI,VUI  has benn implemented suceesfully .