EXPERIMENT 3

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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:

i) CLI (Command Line Interface)

CLI implementation where users can add, view, and remove tasks using the terminal.

```
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 your 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()
```

OUTPUT:

```
Options: 1.Add Task 2.View Tasks 3.Remove Task 4.Exit
Enter your choice: 1
Enter task: Running
Task 'Running' added.

Options: 1.Add Task 2.View Tasks 3.Remove Task 4.Exit
Enter your choice: 1
Enter task: Cycling
Task 'Cycling' added.

Options: 1.Add Task 2.View Tasks 3.Remove Task 4.Exit
Enter your choice: 2
Your tasks:
1. Running
2. Cycling

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

Options: 1.Add Task 2.View Tasks 3.Remove Task 4.Exit
Enter your choice: 2
Your tasks:
1. Running

Options: 1.Add Task 2.View Tasks 3.Remove Task 4.Exit
Enter your choice: 4
Exiting...
```

ii) GUI (Graphical User Interface)

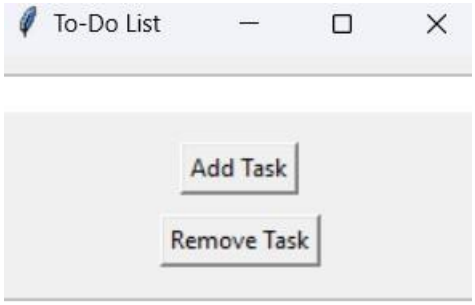
Tkinter to create a simple GUI for our To-Do List application.

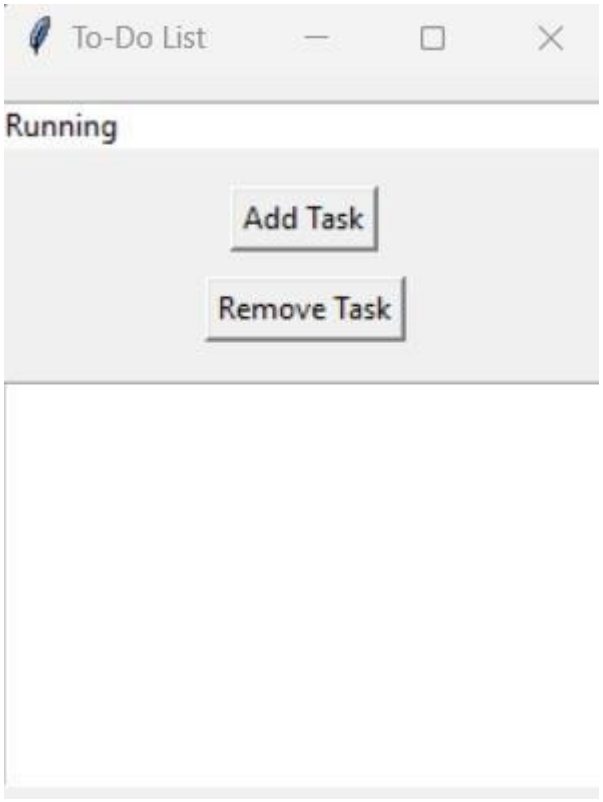
import tkinter as tk from tkinter import messagebox

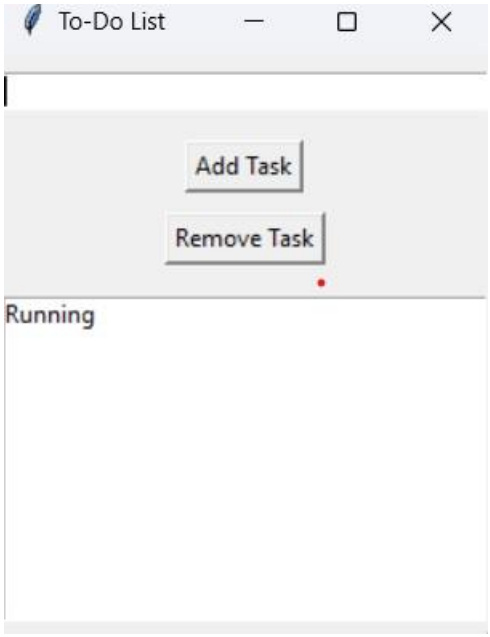
```
tasks = []


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()
```

OUTPUT:




To-Do List
Running
Add Task
Remove Task


To-Do List
Add Task
Remove Task
Running

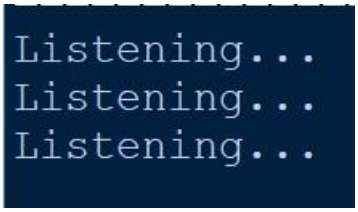
iii) VUI (Voice User Interface)

```
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()
```

OUTPUT:



RESULT:

Hence , Comparison for command line interface ,graphical user interface,voice user interface for same task has been studied successfully.