Voice Control For an OS

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Introduction

- A voice control which works like an OS

- Can handle many tasks which an OS will

- Can handle some tasks which a voice assistant can't

- Sounds like Human but works like a machine

Functions that it can handle

- **Folders / Directories:**
  - Create, Delete, Open
  - Change, Go Back, Rename
  - List directories, files
- **Files:**
  - Create, Open, Delete, Edit, Run, Rename
- **Search:**
  - Google, Wikipedia, Youtube

```
Hi rishi, I am your personal desktop assistant
How can I help you?
Response is: show folders
functions.py, pics, run_app.py, sdf.py, setup.py, __pycache__, None
How can I help you?
Response is: go back
How can I help you?
Response is: show folders
ACD, Code, DBMS, DSA, Mic lecs, os, osproj, seminar, som, Web, webproj, None
Ok bye and take care
```

Continuation

- Shut down in __ minutes
- Close all apps
- Tell the Time

★ **Fill a form:**
  - Input a url in UI
  - Fill form by Voice control
  - Exit

```
Hi rishi, I am your personal desktop assistant
How can I help you?
Response is: what is the time
the time is 01:01:33
```

Work Done

★ Voice Control:
   ○ Made "functions.py" which has shell commands for each operation that we were planning to do
   ○ Made "voice.py" which basically calls the functions in "functions.py" based on the voice commands given by the user
★ Form Filling:
   ○ Made a UI which appears when user asks for "Form filling" which asks the URL of the form, it redirects to that URL & user can fill the form by his/her voice.

Methodology

- Voice control
  - Shell commands are written in separate file which will be imported & appropriate function will be called when needed.
  - talk() function will ask the user for command, it will convert into text & it will pass it to check for required function.
  - respond() function is used to reply the user about his/her commands
  - Form filling basically involves checking for all the fields having <input> tag in the html (except for passwords).
- Tech stack: os, selenium, tkinter, gTTs libraries are used

Error handling

- Incase user's voice is not recognisable properly, after trying 2 times, it asks for user to type his command.
- Form filling
  - If input type is email then appropriate replace commands are written to replace it with "@"
  - Due to privacy issues, if input type is password, then voice input is not accepted.
- Only lowercase letters are considered to remove the ambiguity since a voice doesn't know capital or small.
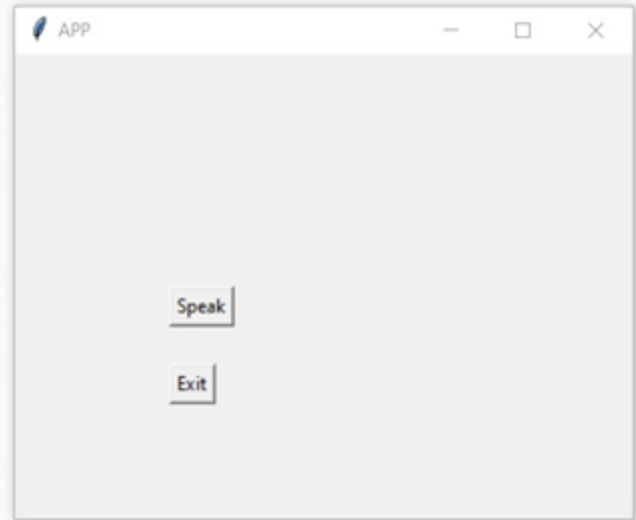- Can run only Python, C, C++ files.

Results

It opens a console where the conversation of the user will be printed.
It opens a UI where user has to select "Speak" or "Exit"
If user has no query after one or two tasks, he can click "Exit"

Hi rishi, I am your personal desktop assistant

Incase the voice control is unable to understand the user even after 2 times, it asks for user to type his request
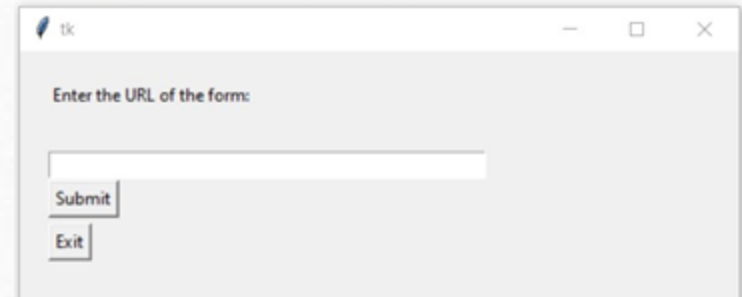
```
Sorry, I can't get you. Please type your command
Please type your command: wikipedia about operating systems
Searching Wikipedia
According to Wikipedia
An operating system (OS) is system software that manages computer hardware, soft
ware resources, and provides common services for computer programs.
Time-sharing operating systems schedule tasks for efficient use of the system an
d may also include accounting software for cost allocation of processor time, ma
ss storage, printing, and other resources.
For hardware functions such as input and output and memory allocation, the opera
ting system acts as an intermediary between programs and the computer hardware,
although the application code is usually executed directly by the hardware and f
requently makes system calls to an OS function or is interrupted by it.
```

Searching in Wikipedia & Reporting the answer

Filling a form by Voice

```
Hi rishi, I am your personal desktop assistant
How can I help you?
Response is: I want to fill a form
```

tk — □ ×

Enter the URL of the form:

[   ]

Submit

Exit

URL of the form must be pasted here & click Submit

After clicking submit, a new window opens like this where user can fill the form

We can use it only for non password fields for privacy purposes

```
Hi rishi, I am your personal desktop assistant
How can I help you?
Response is: search about new movies
```

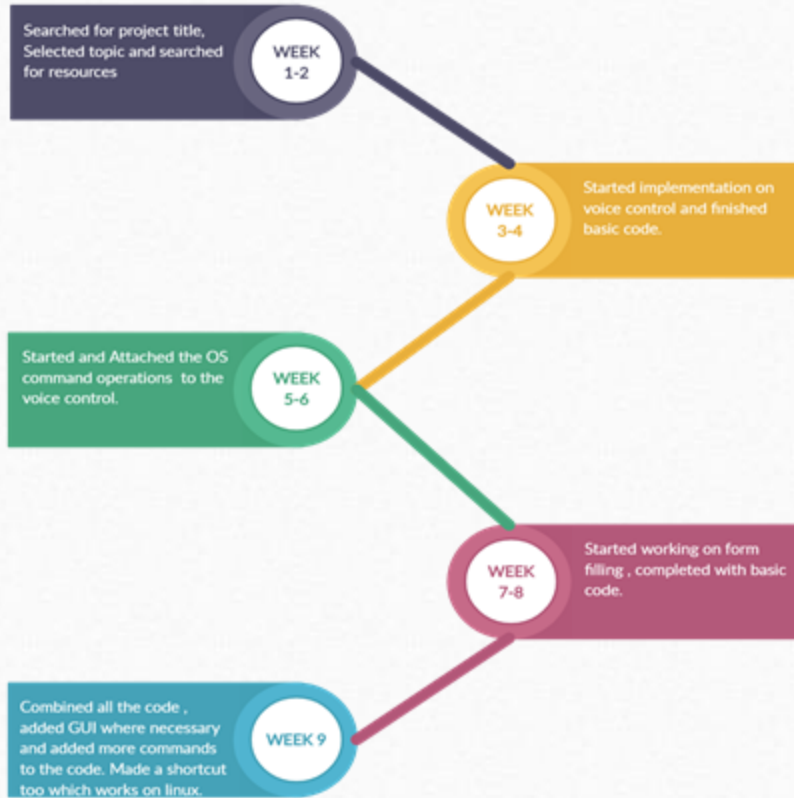**Searching in google about new movies**
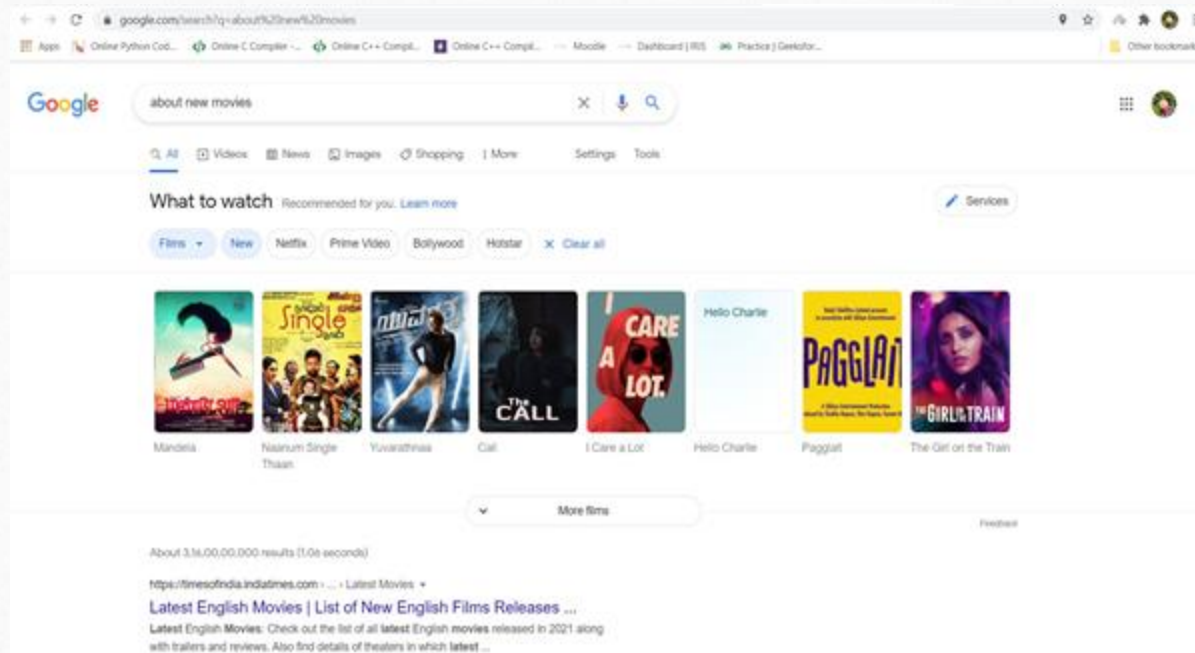
Individual Contribution

- Voice control – Anandita Tiwari and Nancy Kumari
- Developing Shell commands code for all the functionalities – Nancy Kumari
- Form filling – Anchal Kumari and Nancy Kumari
- GUI – Nancy Kumari
- Error handling – Anandita Tiwari
- PPT, Report - Everyone

TIMELINE

Searched for project title, Selected topic and searched for resources

WEEK 1-2

Started implementation on voice control and finished basic code.

WEEK 3-4

Started and Attached the OS command operations to the voice control.

WEEK 5-6

Started working on form filling, completed with basic code.

WEEK 7-8

Combined all the code, added GUI where necessary and added more commands to the code. Made a shortcut too which works on linux.

WEEK 9

Thank You