Operating Systems Project

Members -

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Title - **Linux Voice Assistant**

Introduction

Thor is a simple personal assistant for Linux and Windows which works on the command line. He can talk to you if you enable his voice. He can tell you the time, set the volume and brightness on your commands, can open any apps you want and can also search anything you want on wikipedia, youtube or google.

Methodology

- We used the Python programming language for this project.
- Firstly we implemented two basic functions say() - By calling this function our Voice assistant Thor can speak anything passed as a string parameter to the function by using the python library pyttsx3. recog() - By calling this function Thor recognises our voice command and converts it to string command by using the python library

speech_recognition.

- Now we have the voice command as text, so we can easily search for the keywords inside the text and match them to our desired string. For example let's say the user gave the voice command as "increase volume by 5" so we already have a function which searches for the text "increase volume" inside the voice command converted into text, and then by using the pyautogui library the volume up button on keyboard is pressed 5 times.
- Similarly other functions for changing brightness, taking screenshot, changing volume, searching on google, wikipedia and youtube and opening various apps such as calculator, camera, notepad etc.
- Basically we can implement any function we just need to learn about the desired library which will assist us to do so.

Outcomes

Thor, the voice assistant, provides the following features-

1. Greet with date-time
2. Open/Close X
3. Google/Search X
4. Wikipedia X
5. Youtube X
6. Direct open X.com
7. Volume up/down
8. Brightness up/down
9. Take Screenshot

Lessons Learned

- **Terminal** : In this project needed to extensively the terminal ,both on windows and ubuntu systems. We dealt with various dependency check failures which needed to be rectified on the terminal and each

time we came across a different dependency, we had to modify our devices' permissions which was tricky. In the meanwhile we learnt to use the vim editor and practically came across the **principle of least privilege -** An OS should allot just enough privileges to users and programs to perform their tasks.

- We faced various issues where the same program would run on one linux system but fail on another which made us research a lot on the internet and question the compatibility of multiple operating systems. Eventually our code ran on the computer center PC’s but failed on the virtual machine.
- We came across various new **python libraries** which made working on this project interesting.