Voice Controlled PC

Submitted in partial fulfillment of the requirements for the award of degree of

BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE & ENGINEERING

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INTRODUCTION

The voice controlled PC is the project to make our personal computer fully controlled by voice. This project use google speech recognition to recognize the words from the voice. This implementation of this project is done in Python language.

It uses different types of libraries for its functionality. It uses speechreocnition, pyaudio, beatifulsoup, google, gtts, pyttsx3 etc.

SPEECH RECOGNITION

Library for performing speech recognition, with support for several engines and APIs, online and offline. This library supports google speech recognition to recognize the words from the voice.

PYAUDIO

PyAudio provides Python bindings for PortAudio, the cross-platform audio I/O library. With PyAudio, you can easily use Python to play and record audio on a variety of platforms. PyAudio is inspired by:

- pyPortAudio/fastaudio: Python bindings for PortAudio v18 API.
- tkSnack: cross-platform sound toolkit for Tcl/Tk and Python.

BEAUTIFULSOUP

Beautiful Soup is a Python library for pulling data out of HTML and XML files. It works with your favorite parser to provide idiomatic ways of navigating, searching, and modifying the parse tree. It commonly saves programmers hours or days of work.

GOOGLE

It persorms google search operation in python. It shows the result of the google search.

GTTS

Gtts (*Google Text-to-Speech*), a Python library and CLI tool to interface with Google Translate's text-to-speech API. Writes spoken MP3 data to a file, a file-like object (bytestring) for further audio manipulation. Customizable speech-specific sentence tokenizer that allows for unlimited lengths of text to be read, all while keeping proper intonation, abbreviations, decimals and more. Customizable text pre-processors which can, for example, provide pronunciation corrections. Automatic retrieval of supported languages.

PYTTSX3

pyttsx3 is a text-to-speech conversion library in Python. Unlike alternative libraries, it works offline, and is compatible with both Python 2 and 3. It includes tts engines sapi5, nsss, espeak.

SPOTDL

Download your Spotify playlists and songs to MP3 files for free. spotdl is an online downloader that's fast, free, and easy to use. No registration is required to use this service, but upgrading gives you extra features.
To convert a song/playlist, simply copy the Spotify link into the search bar, click the convert button, and your files will be available to download as soon as they are done converting.

FEASIBILITY STUDY

Speech recognition is the ability of a machine or program to identify words and phrases in spoken language and convert them to a machine-readable format. Rudimentary speech recognition software has a limited vocabulary of words and phrases, and it may only identify these if they are spoken very clearly. voice recognition is a computer software program or hardware device with the ability to decode the human voice. Voice recognition is commonly used to operate a device, perform commands, or write without having to use a keyboard, mouse, or press any buttons. Today, this is done on a computer with ASR (automatic speech recognition) software programs. Many ASR programs require the user to "train" the ASR program to recognize their voice so that it can more accurately convert the speech to text. For example, you could say "open Internet" and the computer would open the Internet browser.

It can handle simple calls and enable customers to guide themselves into finding the answers they require. Cost is one of the greatest advantages of Voice recognition. By offering voice recognition options and automated access, businesses do not have to invest as much money into call centers.

METHODOLOGY

1. A function will be defined to recognize the voice and convert that into words.

```
def command_recog():
    with microphone as source:
        recognizer.adjust_for_ambient_noise(source)
        print('listening...')
        audio = recognizer.listen(source)
        print('processing...')
        try:
            command = recognizer.recognize_google(audio)
        except sr.UnknownValueError:
            return 'speak again'
        return command
```

2. import different modules which can perform different operation
3. Function for google search

```
def googlesearchresult(wanttosearch):
            query = wanttosearch
            for j in search(query, tld="co.in", num=10, stop=1, pause=2):
                    print(j)
```

4. Function for web browser automatic controlling

```
def openwebbrowser(search):
    driver = webdriver.Chrome(ChromeDriverManager().install())
    driver.get("https://www.google.co.in/")
    wait = WebDriverWait(driver, 600)
    xpath = '//*[@id="tsf"]/div[2]/div/div[1]/div/div[1]/input'
    search_area = wait.until(EC.presence_of_element_located((By.XPATH, xpath)))
    search_area.send_keys(search + Keys.ENTER)
```

5. Use of different function on which our PC works like

```
# to tell what command is given
    if command != 'speak again':
        engine.say(command)
```

MODULE & TEAM MEMBER WISE DISTRIBUTION OF WORK

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INNOVATION IN PROJECT

Voice recognition is commonly used to operate a device, perform commands, or write without having to use a keyboard, mouse, or press any buttons. Today, this is done on a computer with ASR (automatic speech recognition) software programs. Many ASR programs require the user to "train" the ASR program to recognize their voice so that it can more accurately convert the speech to text. For example, you could say "open Internet" and the computer would open the Internet browser.

There are some projects which are already implemented but they all are for mobile phones and seperate device. This project will able to control our personal system by voice. Through this project one can handle their PC, Raspberry pi with their voice.

Machine learning will be used for more correct answer. Machine learning is the scientific study of algorithms and statistical models that computer systems use to perform a specific task without using explicit instructions, relying on patterns and inference instead. It is seen as a subset of artificial intelligence.

SOFTWARE AND HARDWARE REQUIREMENTS

1. HARDWARE REQUIREMENTS

1. COMPUTER OR LAPTOP OR RASPBERRY PI
2. MICROPHONE
3. SPEAKER

2. SOFTWARE REQUIREMENTS

1. WINDOWS OR LINUX OR RASPBERRY PI OS
2. SPEECH RECOGNITION LIBRARY
3. PYAUDIO LIBRARY

BIBLIOGRAPHY

1. GITHUB
2. UDEMY
3. PYTHON PROGRAMMING BOOK