

Desktop Assistant using Python and Json

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ABSTRACT

The foremost goal of Artificial intelligence is the realization of natural dialogue between humans and machines. There are several IT companies have used the dialogue methods technology to establish various kinds of Virtual private assistants relied on their applications and areas for increasing interaction between human and machine, such as Microsoft's assistance named Cortana, Apple's virtual assistance Siri, Amazon's assistance named Alexa, Google Assistant. As like Microsoft's Cortana we have created our own virtual personal assistant only for windows using python which is able to access on any windows explorer such as windows version 7 version 8, version 10. We use language named python as a programming language because it has a vast amount of libraries which is used to run commands. By help of python installer packages our personal virtual helper to identify the user sound and do analysis on it.

I. INTRODUCTION (DESKTOP ASSISTANT)

This paper intends to show how Virtual assistant is used to run machine like laptop or Personal Computers on your own command. This digital assistant is a program that identifies original language and sound commands to finish tasks for the users. The Users can request their assistants normal greeting, search anything in online platform, wikipedia about any person or place and media playback by voice, and manage other basic tasks such as email, making bill with just verbal commands only. Some other types of Voice Assistant are:

- Intelligent Personal Assistant
- Automated Personal Assistant
- Virtual Digital Assistants

II. EASE OF USE

- We will use artificial intelligence because in our busy life it is very important to save lots of time and do work with minimum effort. So I am introducing this project which will be used by most retailers and wholesalers for making bill and

sending mail. But there is also a different user that they will use this project to send mail.

- Making Bill is a very weary process and time taking process. So we use this assistant and with help of this function we can make bill easily moreover we don't even need to make total of it. This function will also do this tiresome process and without making any errors.
 - In this function we will use built-in module `smtplib` module to send mail to anyone. It takes three arguments from user: from, to, and content. As you can see in that figure I have given all details for better understanding. But for all you need to do is to login into your gmail account using `userid` and `oneapp` password.
- A. Existing Technology VS New Technology:
- There are many IT companies have used the dialogue systems technology to establish various kinds of own private assistants based on their applications and areas for increasing interaction between human and machine, such as Microsoft's assistance named Cortana, Apple's virtual assistance Siri, Amazon's assistance named Alexa, Google Assistant. As like Microsoft Cortana we have created our own virtual personal assistant only for any window using python language which is able to access on any devices.
 - On the other hand, I have made something which is used by wholesalers and retailers for making bill. I have introduced this whole function though I have added some older features into this project because it was very important and makes device to work efficiently.
 - I have added some features to boost efficiency of users are
 - Check gmail
 - Open web browser
 - Make bill
 - Send Email
 - Play Music
 - Wikipedia anything
 - Open Social Media (like youtube, FB, ..)

III. METHODS

I have used most python programming language for backend system and for store the data efficiently , JSON. In this, libraries and modules of python have played very important role in programme.

Let's Discuss about all of them in details.

A. Python:

Python is a very popular programming language. It was created by famous developer named Guido van Rossum, and released in 1991. It is used for: web development (server-side), software development, maths, system scripting.

Python can be used on any server to create web application. Python can also be used alongside software to create workflows. This can also connect to database systems. It can also read and modify files. This language can used to handle big data and perform complex mathematics. This programming language can be used for rapid prototyping and/or for production-ready software development.

B. Ison

- JSON or JavaScript Object Notation is a lightweight text-based open standard designed for human-readable data interchange. The JSON format was originally originated by Douglas Crockford, and is described in RFC 4627. The official Internet media type for JSON is application. The JSON filename extension is .json. This will help you understand JSON and its also use within varied programming languages such as PHP, Python ,Java and so on.



(How does a virtual Assistant work?)

C. Speech recognition :-

The programme is using Google's online speech recognition system for converting speech input to string text. Through this the users can command and get the text in exchange of voice input from the special organized on computer server at the information center from the microphones which is temporarily stored in the system data and then sent to google cloud for speech recognition. The same string

text is then received and sent to the voice assistant program.

D. Google-Text-to-Speech:-

Text-To-Speech is generally used for conversion of Speech from Text provided by the user. In other words, a TTS Engine Converts written form of text into phonemic representation, then inverts the phonemic representation to waveforms which results in sound. TTS had developed a lot and comes with various languages provided by the third party broadcaster.

E. Equations:-

$$A = A + A * t \quad (1)$$

This equation is used for obtaining the total of all the items and it will then help to print the total of all units. Firstly, it will add the value of first item and then second item and so on until user stops . After this process it send the data to main application of this page and print documets.

F. System Architecture and Modules:-

```

1 import pyttsx3
2 import datetime
3 import speech_recognition as sr
4 import wikipedia
5 import webbrowser
6 import os
7 import billing
8 import sendingMail
9 import smtplib
10 import json
    
```

(Snapshot 1)

- **Pyttsx3:**

pyttsx3 is a string to speech conversion library among Python.

Unlike other libraries, it works offline, and is compatible with both Python 2 and 3.

- **Datetime**

Datetime package is also used to displaying Date and Time. This date and time module comes with builtin module.

- **Speech_recognition**

Speech recognition simply means that when masses are speaking, a machine need to recognize it. In our project we had used Google Speech API in Python programming language to make software which is used to run machines on command. We need to install the Pyaudio package for recognize the voice commands. this is installed using pip install Pyaudio commands.

- **Wikipedia**

We all know Wikipedia is one of the great and huge source of knowledge just like Geeks for Geeks or any other sources. we have used the Wikipedia module in our project to get more information from Wikipedia or to perform a Wikipedia search. To install this Wikipedia module use pip install wikipedia.

- **Webbrowser**

To perform Website Search. This module comes built-in with Python.

- **Os**

The OS module in Python language provides functions for communication with the operating system. this comes under Python's utility modules. This module provides a way of using operating system dependent functionality.

- **Smtplib**

The simple mail transfer protocol library is a library for sending emails using the Simple Mail Transfer Protocol. The smtplib is a built-in module in python language and it do not need to install it. It abstracts all the complexities of Simple Mail Transfer Protocol away. It also provides a Simple Mail Transfer Protocol (SMTP) client implementation.

- **Json**

JavaScript Object Notation technique. JSON file is a lightweight format for storing and accessing data. this is used when data is sent from a server to a web page. this is "self-describing" and easy to understand

IV. CONCLUSION

After completion of Project, I would like to say that Python and its modules are fun and easy to understand and while making that project, this has not been a good experience but it helped in the develop of my creativity and logical thinking. I would be more than pleasure to work with different projects in this type of project Development operations because its amazing to work. Python language is currently used

by lot of application in back end . The use of python and its service makes it easier and straightforward for anyone to accelerate their work needs with less coat and time. The proposed code snippet discussed in this research paper will be useful for many as it is user friendly. Hence, by the use of python can be designed for various applications.

V. FUTURE SCOPE

It still facing some delay and efficiency problems. and I am looking forward it. I am looking for better speech recognition except google speech and I want to add some face recognition and face lock for better security .besides it ,also need to add some devices which will work with this assistance like printing paper, deliver it.

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