REPORT FOR

A DUMMY ASSISTANT (GOOGLE ASSISTANT)

As a project work for Course

PYTHON PROGRAMMING(INT-213)

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DECLARATION:

We do hereby declare that the report entitled “A Dummy Assistant (Google Assistant)” submitted by us to School of Computer Science and Engineering, Lovely Professional University Punjab in partial of the requirement for the award of the degree of B.TECH in COMPUTER SCIENCE AND ENGINEERING is a record of Bonafide project work carried out by us under the guidance of Mr. P. Raja and Department of Computer Science and Engineering.

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CERTIFICATE:

This is to certify that the project entitled "A Dummy Assistant (Google Assistant)" is a Bonafide work done by Mr. Ankit Kumar (12007097) and Mr. Prince Kr. Deka (12006624) of 3rd Semester B.Tech in Computer Science and Engineering from Lovely Professional University, Punjab under the guidance of Mr. P. Raja in the partial fulfilment of the requirement of the award for the Degree of B.TECH. in COMPUTER SCIENCE AND ENGINEERING.

Project Guide: Mr. P. Raja, Department of Computer Science and Engineering

Place - Punjab

Date – 09-11-2021

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Date – 09-11-2021 Ankit Kumar

ABSTRACT:

An AI personal assistant is a piece of software that understands verbal or written commands and completes task assigned by the client. It is an example of weak AI that is it can only execute and perform quest designed by the user.

In recent years, Artificial Intelligence (AI) has shown significant progress and its potential is growing. An application area of AI is Natural Language Processing (NLP). Voice assistants incorporate AI by using cloud computing and can communicate with the users in natural language. Voice assistants are easy to use and thus there are millions of devices that incorporates them in households nowadays. Most common devices with voice assistants are smart speakers and they have just started to be used in schools and universities. The purpose of this report is to study how voice assistants are used in everyday life and whether there is potential in order for them to be used for educational purposes.

Keywords: artificial intelligence, smart speakers, voice assistants, education.

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INTRODUCTION:

Emerging technologies like virtual reality, augmented reality and voice interaction are reshaping the way people engage with the world and transforming digital experiences. Voice control is the next evolution of human-machine interaction, thanks to advances in cloud computing, Artificial Intelligence (AI) and the Internet of Things (IoT). In the last years, the heavy use of smartphones led to the appearance of voice assistants such as Apple's Siri, Google's Assistant, Microsoft's Cortana and Amazon's Alexa. Voice assistants use technologies like voice recognition, speech synthesis, and Natural Language Processing (NLP) to provide services to the users. A voice interface is essential for IoT devices that lack touch capabilities (Metz, 2014). Besides smartphones, voice assistants are now incorporated in devices that are equipped with a microphone and a speaker to communicate with the users, called smart speakers.

The basic idea is that the user makes a request through the voice-activated device, and then, the voice request gets streamed through the cloud, and here voice gets converted into text. Then, the text request goes to the backend and after processing, the backend replies with a text response. Finally, the text response goes through the cloud and gets transformed into voice, which will be streamed back to the user.

PACKAGES REQUIRED AND ITS USAGES:

To build a personal voice assistant it's necessary to install the following packages in your system using the pip command.

- **Speech recognition** — Speech recognition is an important feature used in house automation and in artificial intelligence devices. The main function of this library is it tries to understand whatever the humans speak and converts the speech to text.

To install this module, write below command in the terminal:

pip install SpeechRecognition

- **Pyttsx3**— This module is used for the conversion of text to speech in a program it works offline.

To install this module, type the below command in the terminal:

pip install pyttsx3

- **Wikipedia** — Wikipedia is a multilingual online encyclopedia used by many people from academic community ranging from freshmen to students to professors who wants to gain information over a particular topic. This package in python extracts data required from Wikipedia.

To install this module, type the below command in the terminal:

pip install wikipedia

- **os** — This module is an in-built standard library in python and it provides the function to interact with operating system

- **datetime** — This is an inbuilt module in python and it is used to showing Date and Time.

- **request** — The request module is used to send all types of HTTP request. It accepts URL as parameters and gives access to the given URL'S.

To install this module, type the below command in the terminal:

pip install requests

- **BeautifulSoup** — Beautiful Soup is a library that makes it easy to scrape information from web pages.

To install this module, type the below command in the terminal:

pip install beautifulsoup4

- **wolfram alpha** — Wolfram Alpha is an API which can compute expert-level answers using Wolfram's *algorithms, knowledge* base and AI technology. It is made possible by the Wolfram Language.

To install this module, type the below command in the terminal:

pip install wolframalpha

- **Subprocess** — This module is used for getting system subprocess details which are used in various commands i.e., Shutdown, Sleep, etc. This module comes built-in with Python.

FEATURES IN THE ASSISTANT:

❖ **Skill 1 -Fetching data from Wikipedia:**

The following commands helps to extract information from wikipedia. The **wikipedia.summary()** function takes two arguments, the statement given by the user and how many sentences from wikipedia is needed to be extracted is stored in a variable **result.**

```
149
150     elif "from wikipedia" in query:
151
152         # if any one wants to have a information
153         # from wikipedia
154         speak("Checking the wikipedia ")
155         query = query.replace("wikipedia", "")
156
157
158         result = wikipedia.summary(query, sentences=4)      # it will give the summary of 4 lines from
159         speak("According to wikipedia")                     # wikipedia we can increase and decrease
160         speak(result)                                       # it also.
161
```

❖ Skill 2 -Accessing the Web Browsers — Google chrome, G-Mail and YouTube:

Videos have remained as a main source of entertainment, one of the most prioritized tasks of virtual assistants. They are equally important for entertainment as well as educational purposes as most teaching and research activities in present times are done through Youtube. This helps in making the learning process more practical and out of the four walls of the classroom.

```
121         query = takeCommand().lower()
122         if "open youtube" in query:
123             speak("Opening youtube ")
124
125             # in the open method we just to give the link
126             # of the website and it automatically open
127             # it in your default browser
128             webbrowser.open("www.youtube.com")
129             continue
130
131         elif "open google" in query:
132             speak("Opening Google ")
133             webbrowser.open("www.google.com")
134             continue
135
```

❖ Skill 3 -Predicting time:

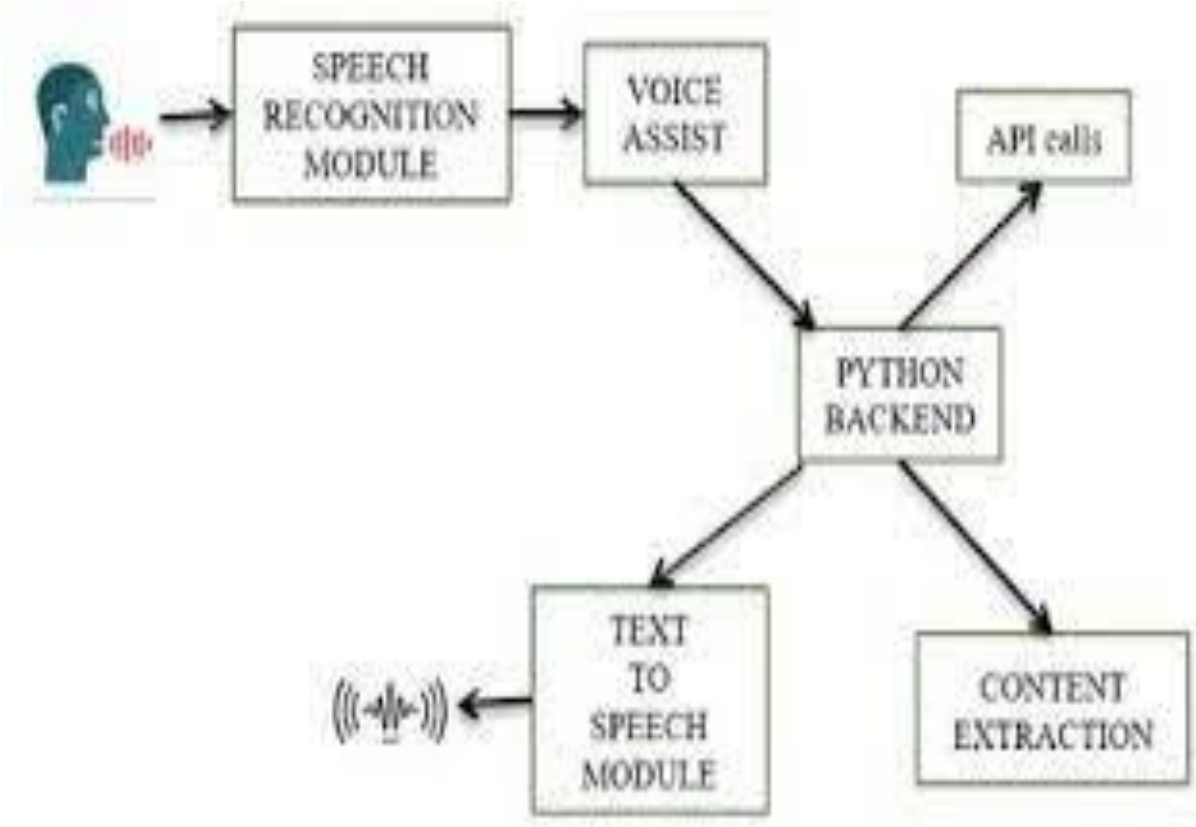
The current time is abstracted from **datetime.now()** function which displays the hour, minute and second and is stored in a variable name **time.**

```
83
84  def tellTime():
85
86      # This method will give the time
87      time = str(datetime.datetime.now())
88
89      print(time)
90      hour = time[11:13]
91      min = time[14:16]
92      speak( "The time is sir" + hour + "Hours and" + min + "Minutes")
93
94      #o/p:  the time will be displayed like
95              # this "2020-06-05 17:50:14.582630"
96              #nd then after slicing we can get time
97
```

Skill 4- Extra features:

It would be interesting to program your AI assistant to answer the following questions like what it can and who created.

FLOWCHART:


SPEECH RECOGNITION MODULE
VOICE ASSIST
API calls
PYTHON BACKEND
TEXT TO SPEECH MODULE
CONTENT EXTRACTION

CONCLUSION:

Immersive learning technologies have the ability to update the existing education system. Virtual reality, augmented reality and voice assistants can provide new learning experiences. In this paper, research regarding the integration of AI voice assistants in education is presented. Research on this topic is limited since voice assistants and smart speakers are now gaining popularity. Findings presented in this paper will hopefully inspire other researchers to further investigate this topic. Smart speakers and voice assistants will be at the centre of interest in coming years as they enter the everyday life of households. The ways they can be used efficiently in the learning process is the subject of research as there are many challenges. One of these challenges is the lack of many languages as voice assistants do not speak all languages. In addition, voice assistants do not have many of the appropriate security measures and protection filters that can be used in class by students. Teachers need to be trained and motivated about the usefulness of these devices in order to adopt them in their class. Although in most cases positive results have been reported regarding students and teachers, results are limited, incomplete and unorganized. As a conclusion, the role of these devices and their use in the classroom are still at an early stage of research and more studies need to address this topic.

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