MAKING ALEXA THROUGH PYTHON PROGRAMMING

Trapti Mishra[1], Prof. Kuldeep Swarnkar[2]

Student of Madhav Institute Of Technology and Science Gwalior, (M.P), India[1]

Professor in Madhav Institute of Technology and Science Gwalior, (M.P), India[2]

Abstract: Alexa is getting common these times in every home and people are much interested to make their homes smart homes by making their devices smart devices. And controlling everything through their voice command and turning on lights, etc
My project is also based on alexa a virtual assistant which answers our question it tells us time, do google search opens a YouTube video or plays a song. Tells a joke when asked to make, tells her name when asked and more interestingly calculates distance between two cities located on any part of earth and all this is done just by using simple software PYCHARM version 2020.2 and done by just installing 8 simple packages.

Keywords : Alexa, pycharm, virtual assistant.

I. INTRODUCTION

Amazon Alexa, also known called as Alexa acts like a virtual assistant AI technology developed by Amazon, itself variousother devices for the technology are Amazon smart speaker and also   the Amazon Dot, Amazon Studio and many others are there Amazon Tap speakers developed by Amazon Lab126. It can perform voice interaction, music playback, making to do the lists, setting alarms, streaming podcasts, playing audio. books, and providing weather, traffic, sports, and other real-time information, advertisements may make   more interesting thing like news   ,etc. Alexa also control large number of smart devices using itself as a home automation system,Users are ready to extend the   capabilities by installing "skills" (additional functionality developed by developer   or   vendors, in other settings more commonly called apps) like weather programs and audio features.

Alexa also control several smart devices using itself as a home automation system. There   are   different   packages   we have used in this code:
- speech_recognition
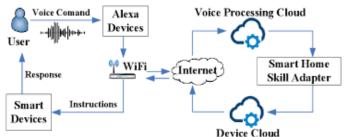- pywhatkit
- pyjokes
- pyttsx3
- geocoders
- Wikipedia

Fig 1 -Image depicting Alexa working model

Alexa performs large number of functions some of them I would like to mention below they are:
1.   Home automation
2.   Messaging and calling
3.   Business
4.   Severe weather alerts

---

5.   Traffic updates
6.   Music
7.   Sports, many more

II. METHODOLOGY

A. *Description*

Firstly we have to install all the mentioned packages in our PYCHARM importing speech recognition package and giving it a name of sr and will refer speech recognition package by the name of sr.And the   second line is used to use recognizer function in listener variable.
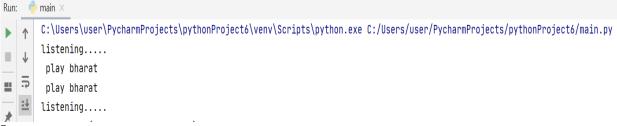
A microphone as a source with the help of sr variable after executing this line the output we get is as "listening" to make us know that alexa iss ready to listen and accept our command the next line uses listener variable to understand the source input and stores it in input named voice.

Function of recognize_google and store it in variable named as command. To initialize our pttsx3 package and store that function into variable named engine this means gives voice and speaking ability to alexa. to change the male voice into a female voice for this we access the get property command and using engine command having the speech signal we get the female voice at the 1st position or 0th index and thus converts our speaking alexa to a female voice.function defined under the name of talk to make our alexa talk the second line is use to make alexa speak whatever is passed as text to the function talk. then our engine wait for certain time to start the next iteration.define a function named as run_alexa to make our alexa function.

The next line is used to call the function named as take_ command() and store the given response in variable named command. And thus prints the command on output window to make us know that our response is   taken correctly by alexa.

B. *Results and discussion*

After alexa takes our command this lines checks if play word as 'play 'is mentioned in our command or not.
And after that we replace this play word in command by a blank space and talk Or speaks ' playing song'
Input:

Output:

Bharat - Full Video | Manikarnika | Kangana Ranaut | Shankar Mahadevan

Output:
Pywhatkit is a package is used to open our song on YouTube with the function.
Alexa compares whether our command has a keyword of time or not if the statement is true control enters the loop ad calls datetime package to get the datetime function with now keyword saying that time of current instant strf means in string form. Then the time along with the message is printed and spoken by alexa

%H:%M:%S' means in the format of hour minute and second

Output:

When alexa finds the keyword of google in command given by us. The condition is satisfied and control   enters the loop In that command the word google is replaced by space and printed.
#line 3 tells us that from package of Wikipedia we have used a function named summary that fetches the information on Wikipedia and the number mentioned in brackets tells us that it will fetch information of The term stored in variable person in 3 lines only. Them this information is printed on output window and spoken by alexa too.

Output:

When alexa finds the keyword of jokes in command given by us. The condition is satisfied and control enters the loop Then a function pyjokes.get_joke () is used to fetch a joke from programmers side Then this joke is printed and is spoken by alexa.

Output:

when alexa finds the keyword of name in command given by us. The condition is satisfied and control enters the loop Then she just prints the message of 'my name is alexa and i am your assistant ,you may ask me anything to help you' and speaks the same.

Output:

---

when alexa finds the keyword of name in command given by us.The condition is satisfied and control enters the loop Then she just prints the message of 'my name is alexa and i am your assistant, you may ask me anything to help you') and speaks the same.

Ouput:

When alexa finds the keyword of distance in command given by us. The condition is satisfied and control enters the loop this is the heart of our program that tells the distance between two cities take as inputs as c1 & c2 respectively Now distance function from distance package is used to calculate the distance between loc1 and loc2. This dis is then printed and spoken by alexa.

Output:

Alexa comes to this option if none of the above condition are satisfied only then this condition is execute command the message as given is printed and spoken.

Output:

```
listening.....

bahut achi chitra

 I could not get what you said !! please repeat the command

listening.....



Process finished with exit code -1
```

III. CONCLUSION

By running the program in pycharm and giving different outputs it can be seen alexa responding to our questions verifying to be an actual virtual assistant.
 Superiority of my Alexa:
Alexa can calculate distance between any two places located on the globe adding more scope for the future innovations.

ACKNOWLEDGEMENT

REFERENCES

[1] link for speech_recognition package Speech_recognition · PyPI *https://pypi.org* › project Speech_recognition
[2] link for pywhatkit packagepywhatkit · PyPI https://pypi.org › project › pywhatkit
 [3]link for pyjokes package pyjokes · PyPI https://pypi.org › project › pyjokes
[4]link for pyttsx3 package pyttsx3 · PyPI https://pypi.org › project › pyttsx3
 [5]link for geocoders package geopy · PyPI   https://pypi.org › project › geopy
[6]link for Wikipedia package wikipedia · PyPI   https://pypi.org › project › wikipedia