The Implementation of AI Based Virtual Personal Assistant

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A R T I C L E I N F O

A B S T R A C T

In modern times, everyday life has become smarter and more sophisticated. We already know some personal assistant services like google, alexa and Siri etc. Our Virtual Personal Assistant[VPA] is considered as a platform to perform the daily task of the user by using the voice. Personal virtual personal assistant is an assistant program that works on the desktop by using concepts of Python Programming. These days we aren't even using fingers. We just speak of the task and it is done. Our Artificial Intelligence based virtual personal assistant listens to the user's voice and responds to the verbal commands. Virtual Assistants are software programs that help you ease your day to day tasks, such as showing weather report, creating reminders, playing videos on YouTube, seeking information fro m net etc. and many more tasks we can perform using VPA. This VPA is created by using Python programming and some concepts of Artificial Intelligence which are embedded with some libraries which we have used.

Keywords : Virtual Assistant Using Python Programming, Speech Recognition, Text To Speech, Natural Language Processing, Python Libraries.

I. INTRODUCTION

[1]The Virtual Personal Assistant is an Artificial Intelligence (AI) based intelligent machine which performs Various tasks based on daily activities and some automation. It is the science and engineering of making machines to demonstrate intelligence especially speech recognition, decision-making, and translation between languages like human beings. By using AI we can simulate the human intelligence processes by machines, especially computer systems. Virtual assistants help users or enterprises with a set of tasks previously only made possible by humans. The Virtual assistant uses Python Programming and some concepts of AI which is natural language processing(NLP), to assist people or automate tasks. The Virtual Personal Assistant listen to and observe behaviours, build and maintain data models, and predict and recommend actions. VPAs can be deployed in several use cases, including virtual personal

assistants, intelligent personal assistants and virtual employee assistants.

AI has already become an intrinsic part of our daily life and has greatly impacted our lifestyle despite the imperative uses of digital assistants of mobile phones, driver assistance systems, the bots, texts and speech translators, and systems that assist in recommending products and services and customized learning.

Every emerging technology is a source of enthusiasm. AI is a source of both advantages and disadvantages indifferent perspectives. However, we need to overcome certain challenges before we can realize the true potential and immense capabilities of this emerging technology.

II. LITERATURE SURVEY

Voice assistant consume stood the hot topic of AI in fresh studies. We collect a number of papers in order to examine voice assistant and then analyze data. P. meliorate [1] . A computer mainly grounded method for execution a command through a voice user interface on a subdivision of items. The item contains written contents that's converted to voice output. A.M Weeretunga [2] . This project is mainly focused to help visually disabled to access social media and other internetbased services, because understanding digital content is an extremely important and hard problem for this user group. The system enables the user to get fractures provided by different applications on a single platform. The application will world and provide profile management automation. This system performs statically without any human intervention. The most familiar application of phone is "SIRI" which reasons the end user to inform end user adaptable with voice and it furthermore respond to the voice charge of the client in this scheme open data is assembly consideration for imaginative administrative creation, mainly in the region ancient government, bio science and attached undertaking. This paper presents a voice associate which apply exposed information as its education foundation.it is highlighted by alteration of

exactness as per the user reproaches and procurement of unregistered statistics by the user provision.

III. PROPOSED PLAN OF WORK

The work started with analyzing the audio commands given by the user through the microphone. This can be anything like getting any information, operating a computer's internal files, etc. This is an empirical qualitative study, based on reading above mentioned literature and testing their examples. Tests are made by programming according to books and online resources, with the explicit goal to find best practices and a more advanced understanding of Voice Assistant.

Speech recognition is used to convert the speech input to text. This text is then fed to the central processor which determines the nature of the command and calls the relevant script for execution. But, the complexities don't stop there. Even with hundreds of hours of input, other factors can play a huge role in whether or not the software can understand you. Background noise can easily throw a speech recognition device off track. This is because it does not inherently have the ability to distinguish the ambient sounds it "hears" of a dog barking or a helicopter flying overhead, from your voice. Engineers have to program that ability into the device; they conduct data collection of these ambient sounds and "tell" the device to filter them out. Another factor is the way humans naturally shift the pitch of their voice to accommodate for noisy environments; speech recognition systems can be sensitive to these pitch changes.

IV. DESIGN METHODOLOGY

Based on past work and assessment, the project is accomplished with understanding of an intelligent assistant capable of taking user command and analyses it and respond the user by using voice media. Python libraries and speech reorganization API's are used to integrate the personal voice assistant python speech to text model is used.

International Journal of Scientific Research in Science, Engineering and Technology | www.ijsrset.com | Vol 10 | Issue 2
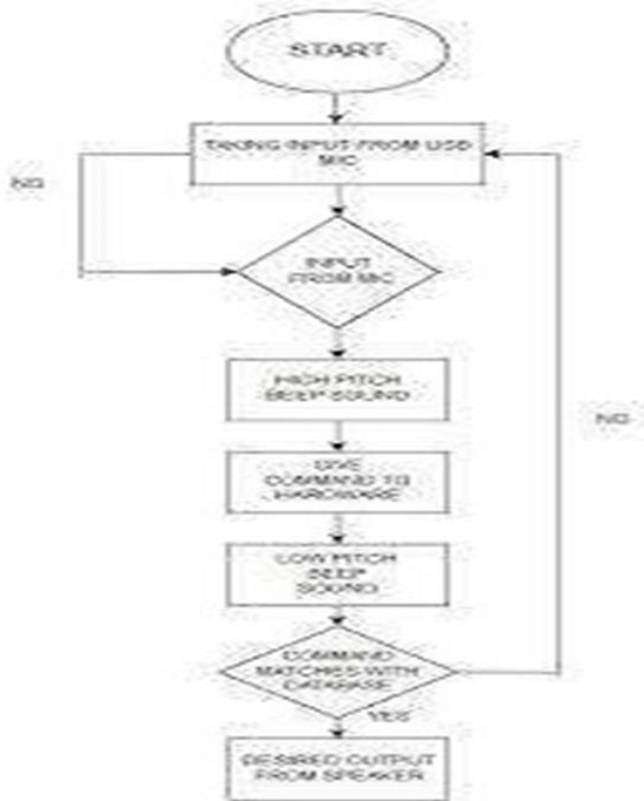
785

Fig. Data Flow Diagram of VPA

Design and implementation refer to the process of planning, creating, and executing a solution to a problem or project. This can refer to a wide range of areas, including software development, product design, and project management. Here are some general guidelines for designing and implementing a solution:

Here is a look of our Jarvis VPA:

Overall, the key to successful design and implementation is to be methodical, flexible, and responsive to feedback. By following these steps, you

can increase your chances of creating a solution that meets your goals and effectively addresses the problem at hand.

V. SCOPE OF SYSTEM

Voice assistant will remain to proposal additional distinct involvement as they get improved at distinguishing amongst speech. however, it's not just developers that need to address the complexity of developing for voice as brand also need to understand the capabilities of each device and integration and if it makes sense for their specific brand. They will also need to focus on minting a user experience that is consistent within the coming year as complexity becomes more concern. This is because the graphic interface with voice subordinate is absent user basically cannot realize or touch a voice assistant interface.

ADVANTAGES OF VPA
· A voice assistant makes your life easier.
· It can be an expert in any field.
· A voice assistant allows you to provide more coverage in all kinds of different technologies.
· You have a smart and intelligent friend always with you.

WHAT VPA DO FOR YOU
· A voice assistant makes your life easier. It can be an expert in any field.
· A voice assistant allows you to provide more coverage in all kinds of different technologies.
· You have a smart and intelligent friend always with you.

APPLICATIONS OF VPA
· Voice tech in healthcare.
· Mobile app integration.
· Disabled's helping guide.
· Adults helping hand.

International Journal of Scientific Research in Science, Engineering and Technology | www.ijsrset.com | Vol 10 | Issue 2

786

VI. RESULTS

Virtual personal assistants (VPAs) are computer programs or mobile applications that use natural language processing (NLP) to provide personalized assistance to users. Some popular examples of VPAs include Siri, Google Assistant, and Amazon Alexa. Here are some potential results of using a VPA.

Expected output is shown as follows:
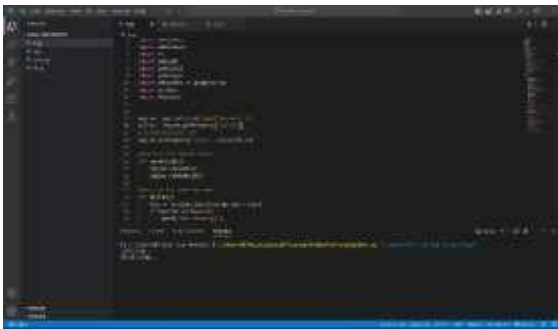
Overall, the results of using a VPA will depend on the individual user's needs and preferences. However, many people find that VPAs can provide valuable assistance and help them manage their lives more effectively. VPAs can provide personalized recommendations and assistance that are tailored to their specific needs and interests. By providing access to information and tools, VPAs can help users stay organized and keep track of important tasks and deadlines.

VII. CONCLUSION

In this paper "Virtual Assistant Using Python" we discussed the design and implementation of Digital Assistance. The project is built using open source software modules with VS-Code backing which can accommodate any updates shortly. The modular nature of this project makes it more flexible and easy to add additional features without disturbing current system functionalities. It not only works on human commands but also give responses to the user based on the query being asked or the words spoken by the user such as opening tasks and operations. It is greeting the user the way the user feels more comfortable and feels free to interact with the voice assistant. The application should also eliminate any kind of unnecessary manual work required in the user life of performing every task. The entire system works on the verbal input rather than the next one.

VIII. REFERENCES

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787

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Cite this article as :

Prathamesh Kalyankar, Gaurav Kaikade, Monika Mundwaik, Sakshi Mirzapure, Dnyaneshwar Kale , Rupali. S. Sawant, "The Implementation of AI Based Virtual Personal Assistant", International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 10 Issue 2, pp. 784-788, March-April 2023.
Journal URL : https://ijsrset.com/IJSRSET23102139

International Journal of Scientific Research in Science, Engineering and Technology | www.ijsrset.com | Vol 10 | Issue 2

788