

Virtual Personal Assistant

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Abstract - Smart voice assistants are devices that connect to the Internet, listen to their location and respond to the instructions of spoken users to extract information online, manage in-appliances, or notify the user with incoming messages, reminders, and the like. With their growing visibility in smart homes, their app seems to be limited only by the imagination of developers, who connect these off-the-shelf devices to existing applications, online services, or electronics. However, since their environment is user-friendly in their home, their environment also raises concerns about user safety and privacy. In order to justify the trust placed on devices, devices must be protected from unauthorized access and the back-end infrastructure provided for speech and text analysis, command interpretation, and connectivity for other services and electronic devices must maintain data privacy. In order to investigate the current risks, mitigation measures, and common assumptions in this emerging field, add recent research findings to the results of systematic reviews. We were able to compile a list of six main types of user privacy risks, which slightly confirm previous findings, but also find additional problems. We discuss these risks, their associated attack vectors, and the limitations that users may take to protect themselves

Key Words: Intelligent Voice Assistants, Virtual Assistants, Smart Home, Privacy, Security, Systematic Literature Review, Alexa

1. INTRODUCTION

Nowadays almost all jobs are done digitally. We have a Smartphone in hand and it is nothing less than having land in your hands. These days we don't even use our fingers. We are just talking about work and it is done. There are plans where we can say to the Father of the Scriptures, "I'll be late today." Text is also sent. That is the work of the Visible Assistant. It also supports specialized functions such as booking a flight or finding the cheapest book online from various e-commerce sites, and providing a visual order booking link that helps to make search, discovery, and online orders automatically.

Virtual Assistants are software programs that help you simplify your daily activities, such as displaying a weather report, creating reminders, making a shopping list etc. They can take commands from text or by voice. Smart voice-based assistants need a request word or a wake-up call to make the listener work, following the command. In my project the name JIA. We have many visible assistants, such as Apple's Siri, Amazon's Alexa and Microsoft's Cortana. In this project, the wake-up name has been selected for JIA

The project was started on the basis that there is a sufficient amount of publicly available data and information on the web that can be used to create a visual assistant that is able to make smart decisions for common users' activities.

1.1 Purpose

The purpose of a virtual assistant, voice player, music player, to make ratifications, setting allocations, podcasts spread, voice playing, engineering, networks, eyes visual assistants enable users to speak voice instructions in the natural language in order to use the device and its operations.

1.2 Scope

Voice assistants will continue to provide much more in each as they are better at the difference between words. However, it's not just entrepreneurs who should face the problem of voice development as kinds are required to understand the power of each development and organization and when making the direction of their kind. They will also need to focus on the end of the continued user home during the next years as badness becomes additional. This is because visual interface with voices available. Users must be able to see or touch the voice interface.

2. Project Methodology

Voice Assistant (VA), a type of voice-enabled artificial intelligence, is no longer just an actor in science fiction films. Currently, the voice is integrated into a variety of products

such as smartphones (mobile apps) and smart speakers in consumer homes. In addition, voice assistants have become part of our daily lives. While human personality shapes the way we interact with the world, voice helpers can have an impact on our daily interactions with our environment. This study identifies seven VAP Assistant features for three commonly used mobile applications: Microsoft's Cortana, Google Assistant, and Amazon Alexa. Voice Assistant is an app that helps users to interact with their devices using voice commands in an intuitive and natural way. Recently, many voice assistant applications have been popularly deployed on smartphones and voice-controlled smart speakers.

2.1: Implementation of model

The base of this project is built using Python programming language which gives us an overall advantage as it helps us to reduce the code from a ton of lines to a lot less. As python has a lot of packages and directories and also gives us the freedom to create our own packages we use it to is full potential by using some of the most advanced packages like Pyaudio, Speech recognition, Ptyss3x etc. We also are planning to create some of our own packages to further improve the project in all the possible ways we can.

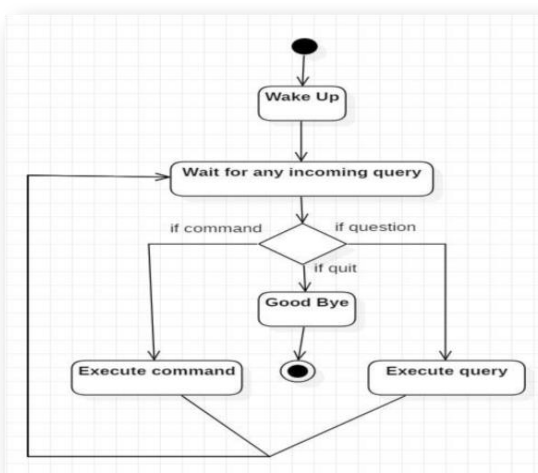


Chart -1: Implementation of The Model

Initially, the system is in idle mode. As it receives any wake-up call it starts working. The instruction received is determined by whether it is a questionnaire or a task to be performed. The specific action is taken accordingly. After the question is answered or the task is done, the system waits for another command. This loop continues unless it receives a stop order. At that moment, she fell asleep again.

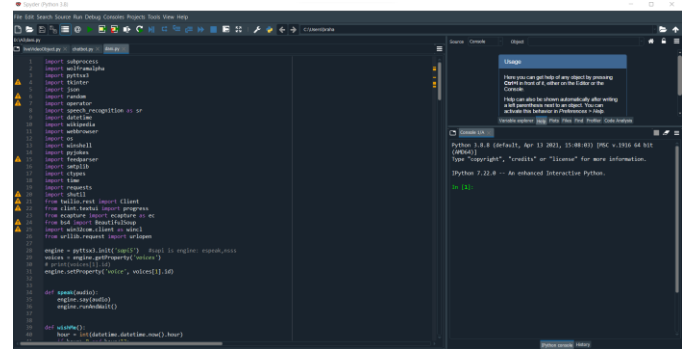


Fig -1:

3. Hardware and Software Requirements

The software is designed to be lightweight so as not to be a burden on the machine you are using. This program is designed to remember the hardware that is usually available with software compatibility. Here are a few of the hardware and software requirements for the visual assistant

3.1 Hardware

- Pentium-pro processor or later.
- RAM 512MB or more.

3.2 Software

- Windows 7(32-bit) or above
- Python 2.7 or later
- Chrome Driver
- Selenium Web Automation
- SQLite

4. Survey of Technology

Technology is upgrading day by day to ease up our workload. We have applied current technology to the making of this project. Some of the technologies that we have used are as follows :-

4.1 Python

Python is an oops (Object Oriented Programming) based, high quality, translated programming language. It is a strong, very useful language that focuses on rapid application development (RAD). Python assists easy writing and coding. Python can use the same concept with code up to 1/5 compared to other oops languages. Python offers a huge list of benefits for all. The use of Python is such that it cannot be limited to just one function. Its growing popularity has allowed it to embark on some of the most popular and complex processes such as Artificial Intelligence (AI), Machine Learning (ML), natural language processing, data science etc. Python has many libraries for all the needs of this project. In JIA, the libraries used are speech recognition

for voice recognition, Pyttsx text to speech, selenium web flexibility etc.

4.2 AI

Artificial intelligence (AI), the ability of a digital computer or a computer-controlled robot to perform tasks that are commonly associated with intelligent creatures. The term is often used in a project to develop systems that are endowed with cognitive processes that are human characteristics, such as the ability to think, to interpret, to act normally, or to learn from past experiences. Since the advent of digital computing in the 1940's, it has been shown that computers can be programmed to perform more complex tasks — for example, to obtain evidence of mathematical theory or to play chess — with greater efficiency

4.2 Machine Learning

What exactly is ML?

Machine learning (ML) is a form of artificial intelligence (AI) that allows software programs to be more correct in predicting results without explicitly planning to accomplish that Machine learning algorithms use historical data as input to predict new output value

Result and Conclusion:

The system can allow long conversations with users through a large chat database. This VPA program uses speech, graphics, video, body language and other communication tools in both the input and output channels.

It may be a fine answer that can be utilized by packages, which include:

1. Respond to customers
2. Customer service agent
3. Training or education
4. To facilitate transactions
5. Shopping on V Online
6. Travel information

4. CONCLUSION

Voice Assistant is created on Spyder 3.9 with the help of technologies such as Python , Aspects of Artificial Intelligence and Machine learning with the help of lots of libraries.

The assistant successfully takes voice , recognise it and delivers us the gives output as per the commands and situation.

Overall the assistants works successfully in almost all the given situation and performs almost all the tasks.

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