SUBMISSION REPORT

FOR

AI PROJECT

COURSE CODE: INT404

SECTION: K21KA

PROJECT TITLE: AI in Personal Assistant

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ABSTRACT

Technological developments are diversified every day from the early periods of human existence, changing human life more and more.

The most intense period of these developments is the IT Revolution. This period has brought processes such as artificial intelligence,

electronic commerce and online life. Just as a hundred years ago, electricity transformed everything, and artificial intelligence is expected to transform all industries today.

The main goal of Artificial intelligence (AI) is the realization of natural dialogue between humans and machines. There are many IT companies have used the dialogue systems technology to establish various kinds of Virtual Personal Assistants (VPAs) based on their applications and areas for increasing interaction between human and machine, such as Microsoft's Cortana, Apple's Siri, Amazon Alexa, Google Assistant. We use python as a programming language because it have a major libraries which is use to execute commands. By using python installer packages our personal virtual assistant recognize the user voice and process on it.

It's impossible to predict what the future will look like. However, it will show time whether human intelligence will increase or remain in the shadow of artificial intelligence, thanks to smart homes that are becoming widespread by the development of technology. The purpose of this study was analysed by the SWOT method of smart homes thanks to extensive literature research on smart homes and interviews with smart home experts. This study is expected to make an important contribution to interdisciplinary studies.

INTRODUCTION

Virtual assistant is used to run machine like laptop or PC's on your own command. Virtual assistant is an application program that understands natural language and voice commands to complete tasks for the users.Virtual assistant is used to perform a typical task like showing datetime, managing emails, open apps, etc. on your command. Now a days virtual assistant is very useful to human. It makes human life easier like operate PC's or laptop on only voice command. Virtual assistant is a less time consuming. By using virtual assistant we saves our time and contribute in other works. Virtual assistants are typically cloud-based program that requires internet connected devices. Virtual assistant is the flexibility to contract for just the services they need. For creating virtual assistant for your computer go from basics python. Virtual assistants are task-oriented. Virtual assistants ability to understand and perform requests. Virtual assistants is a software that understands verbal and written commands and completes task assigned by clients. Virtual assistants are able to interpret human speech and respond via synthesized voices. There are several voice assistants in market like Siri for apple TV remote, Google Assistant for pixel XL smartphones, Alexa as a smart speaker which is developed by using Raspberry Pi, Microsoft Cortona for windows 10. As like this all virtual assistants we also created a virtual assistant for windows. We use Artificial Intelligence technology for this project. Also use python as a programming language, because python offers a good major libraries. For this software use microphone as input device to receive voice requests from user and speaker as output device to give the output voice.

OBJECTIVE

Main objective of building personal assistant software (a virtual assistant) is using semantic data sources available on the web, user generated content and providing knowledge from knowledge databases.

The main purpose of an intelligent virtual assistant is to answer questions that users may have. This may be done in a business environment, for example, on the business website, with a chat interface. On the mobile platform, the intelligent virtual assistant is available as a call-button operated service where a voice asks the user “What can I do for you?” and then responds to verbal input.

Virtual assistants can tremendously save you time. We spend hours in online research and then making the report in our terms of understanding. Your personal assistant can do that for you. Provide a topic for research and continue with your tasks while your personal assistant does the research. Another difficult task is to remember test dates, birthdates or anniversaries. It comes with a surprise when you enter the class and realize it is class test today. Just tell your personal assistant in advance about your tests and it reminds you well in advance so you can prepare for the test.

One of the main advantages of voice searches is their rapidity. In fact, voice is reputed to be four times faster than a written search: whereas we can write about 40 words per minute, we are capable of speaking around 150 during the same period of time15. In this respect, the ability of personal assistants to accurately recognize spoken words is a prerequisite for them to be adopted by consumers.

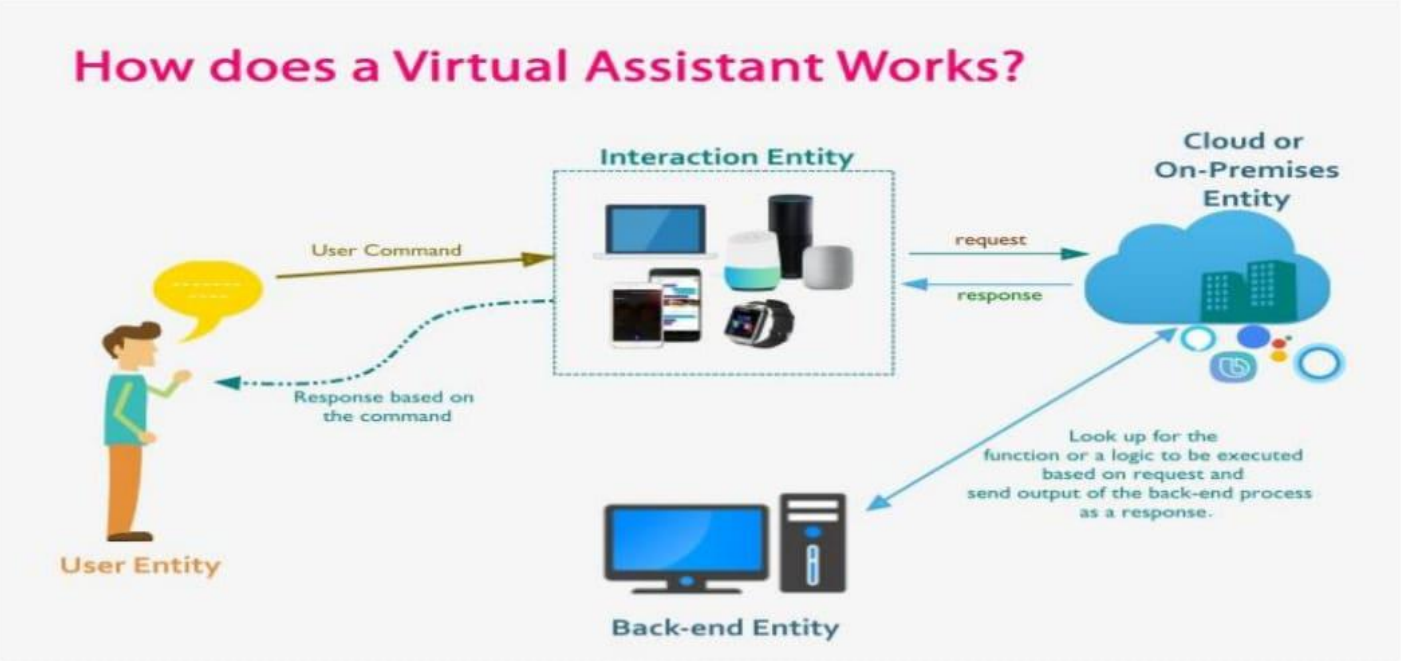
METHODOLOGY

The methodology of the project "AI in Personal Assistant " involves several steps that are necessary to develop and implement an intelligent system . These steps include:

1. **Requirements gathering and analysis**: The first step is to identify the requirements of the intelligent system, including the functions it needs to automate, the sensors and devices that need to be integrated, and the user interfaces that will be used. This involves consulting with experts in the field, conducting surveys and interviews with potential users, and analysing existing solutions.
2. **Design and prototyping**: Based on the requirements gathered in the first step, the next step is to design the system architecture, algorithms, and user interfaces. This involves developing software prototypes and hardware mock- ups to test the feasibility of the design.
3. **Data collection and processing:** The intelligent system relies on data collected from sensors, user behaviour, and other sources to make decisions and automate functions. This step involves identifying the necessary data sources, collecting the data, and processing it to extract relevant information.
4. **Machine learning and AI modelling**: The intelligent system uses machine learning and AI algorithms to analyse the data and make decisions. This step involves developing and training models for tasks such as image and voice recognition, anomaly detection, and predictive analytics.

5. **Integration and testing**: Once the software and hardware components have been developed, they need to be integrated into a working system. This step involves testing the system under various scenarios and fine-tuning the algorithms and interfaces.
6. **Deployment and maintenance**: The final step is to deploy the system in a real-world environment and maintain it over time. This involves monitoring the performance of the system, addressing any issues that arise, and updating the software and hardware components as needed.

Throughout the project, it is important to follow established software development and project management best practices, such as agile development, version control, and testing methodologies, to ensure that the system is delivered on time and meets the requirements of the users.



EXISTING AND PROPOSED SYSTEM

Existing Model

Most existing projects use only speech recognition using emotional networks. Although their systems are relatively accurate, they are not for real use and are not suitable for any real use. There are a few basic methods they use:

Context-aware computing:

Context-aware computing is a category of programs that can sense their physical location and adapt accordingly. These can be used to identify words spoken by people with different characteristics. It may also spell out words that may have been mispronounced.

MFCC:

MFCC refers to Mel-Frequency Cepstral Coefficients. MFC (Mel-frequency Cepstrum) is a collection of this coefficient. It is equal to the short-term energy spectrum of sound. These can be used to hear sound variations to detect the various variables needed for voice recognition.

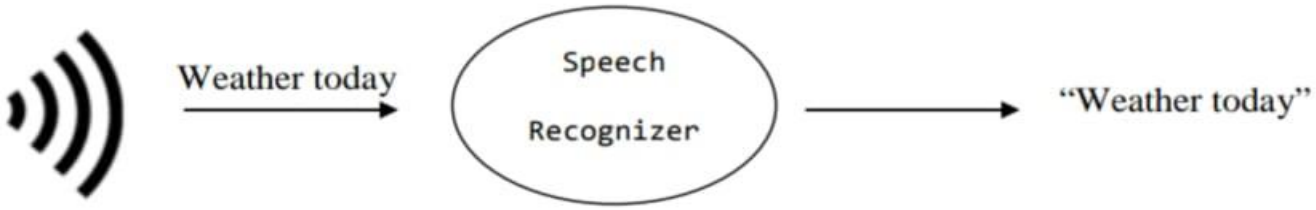
NLP:

Natural Language Programming is a branch of Artificial Intelligence responsible for computer interactions and human languages. It focuses on programming computers so that they can process large amounts of data in native languages. This concept is used to familiarize a computer with a variety of words in a given language and to recognize them when spoken.

Proposed Model

Speech to text:

A Piece of software used that converts audio to text. It doesn't understand just anything you might say.



Text Analyzing:

- Converted text is just letters for computers.
- A piece of software converts text to something understandable for the computer.
- Computer understands the command, so Virtual Assistants like Siri converts this text to a computer command.
- VPAs map the words to functions and parameters to create a command that the
- computer can understand.

APPLICATIONS

- **Improved customer support**

Improved customer support while cutting down on the number of calls and service requests to human agents

With AI assistants you can automate the business flow of interacting with customers . This will allows your employees to focus on more complex tasks and not waste time on requests that can be processed in an automated way.

- **Building a smart home**

You can build smart home and other products that customers can control from millions of Alexa devices with just their voice. Expand your device's capabilities with Alexa to create delightful experiences for lights, switches, thermostats, cameras, playing audio, locks, and more.

- **Personalized user experience**

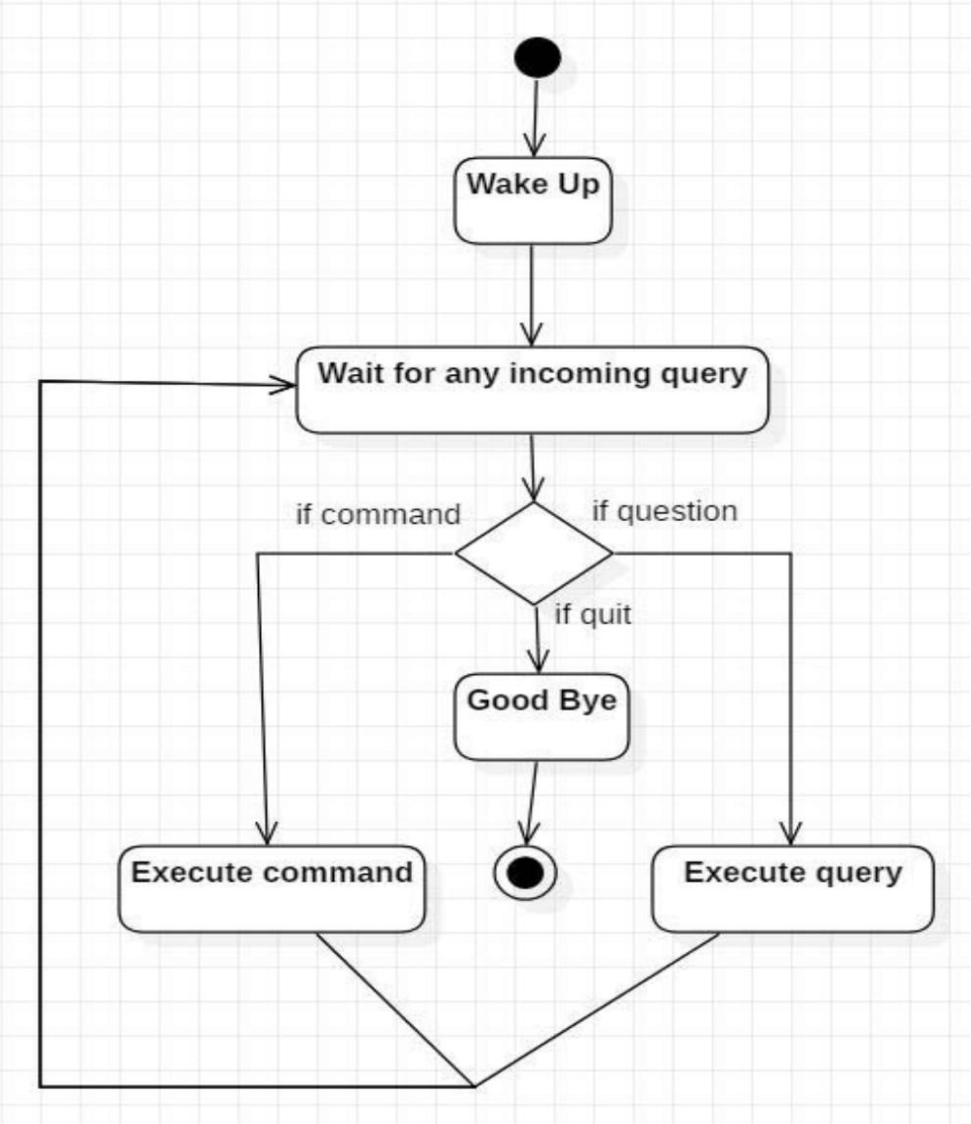
AI assistants adapt to the needs of each user, providing the client with a high level of personalization. For example, IPAs can remember not only the user's name but also their preferences. This helps to increase user engagement, as well as improve customer satisfaction and loyalty.

- **Save time and increase efficiency**

A virtual assistant can help you stay organized by managing your calendar and contact list, helping you stay on top of important tasks. Help you save money. Virtual assistants are generally a fraction of the costs of full-time or part-time employees. Most work by the hour and only charge when they are completing tasks.

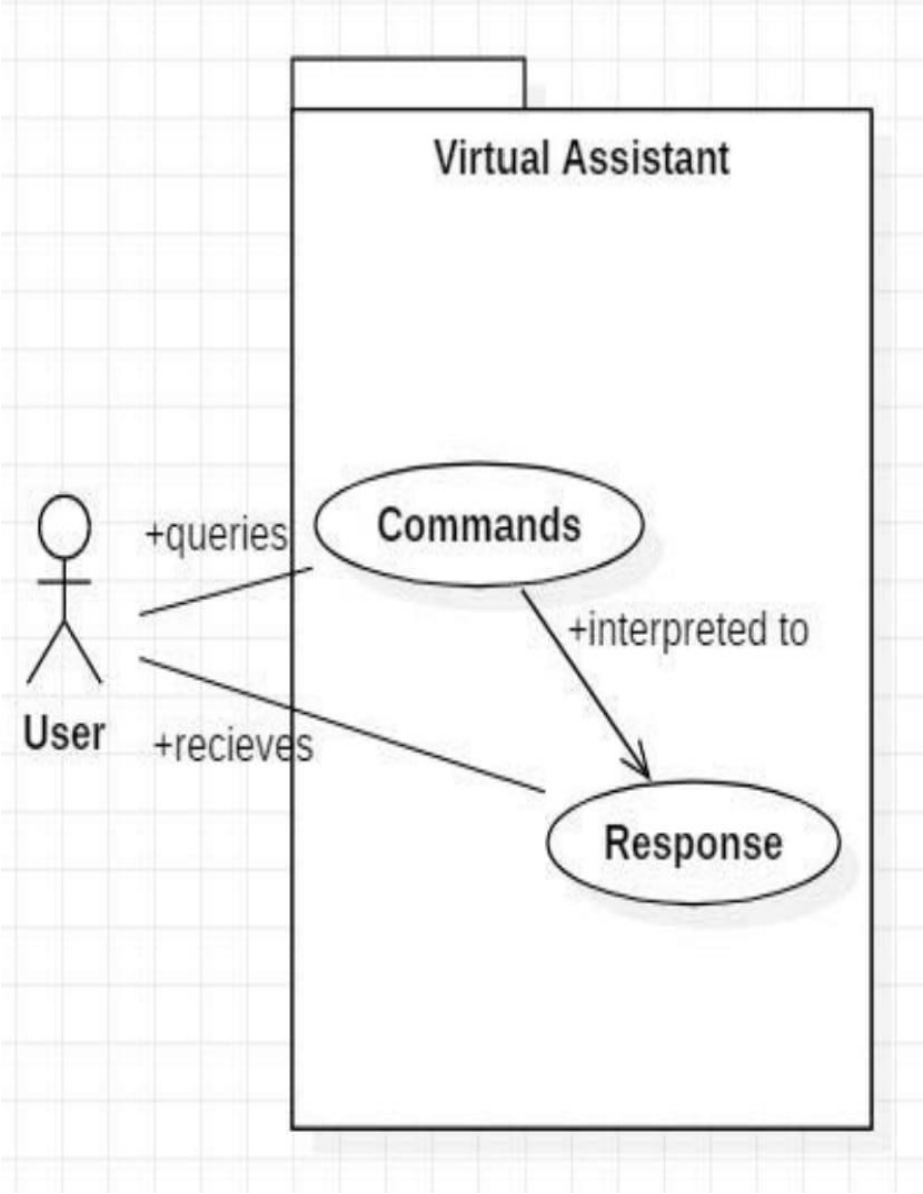
SYSTEM DESIGN

Activity Diagram:



Initially, the system is in idle mode. As it receives any wake up cal it begins execution. The received command is identified whether it is a questionnaire or a task to be performed. Specific action is taken accordingly. After the Question is being answered or the task is being performed, the system waits for another command. This loop continues unless it receives quit command. At that moment, it goes back to sleep.

Use Case Diagram:



In this project there is only one user. The user queries command to the command to the system. System then interprets it and fetches answer. The response is sent back to the user.

IMPACT OF VIRTUAL ASSISTANTS

Healthcare: Virtual assistants schedule appointments and enter data into applications easily. It also aids front-office operations by accelerating admissions, discharges, transfers, scheduling patient consultations, and sending and receiving referrals with easy patient medical record updates.

Banking: Regardless of the time or location, a banking AI-enhanced virtual assistant can be available anytime consumers need them. On-demand personal bankers, wealth managers, loan service agents, and ATM locators are now readily available to customers. They make banking as simple as texting, rapidly responding to questions ranging from simple requests to challenging functions. It can support a vast spectrum of customer support like fraud detection, adding or removing a payee, setting up a recurring bill payment, checking account overdrafts, and more.

Food: A virtual assistant lets you address your customers' most frequent queries, reducing order delay time and easing your order tracking process. It provides a contactless experience for your customers, starting with the meal ordering process and ending with safe payment and delivery, offering them a seamless experience throughout.

Travel: Virtual assistants can enable you to guide your customers with trip planning, room types, food, trip notes, travel insurance, visa information, safety, medical information, backpacking list, accommodation, transfers from one place to another, climate, and seasonal information. They can also collect this data from your customers in real-time and link it with your CRM, keeping your customers updated with new offers and discounts.

FUTURE SCOPE

As we see children interact effortlessly with virtual assistants, we can assume that they're here to stay and could be embedded in all aspects of our lives in the future, including our work lives. There is already some progress being made with B2B marketing virtual assistants extending the abilities of marketing professionals to improve communications. The voice technology is being tied into the omnichannel marketing strategy that is being adopted by many businesses. For business operations, there is the potential for virtual assistants to become trusted collaborators while leveraging the predictive abilities of AI tools. Given the recent improvement of accuracy and intelligence of virtual assistants, coupled with the rising popularity of their use, it is not impossible to think that they will be transformative in business.

For virtual assistants to become fully trusted and completely incorporated into business, they must overcome a couple of hurdles. First, the security of the voice transmissions needs be addressed, so that businesses feel comfortable accessing confidential data through voice command. Second, workers' comfort level in using virtual assistants must increase; they need to be thought of as useful tools, and not regarded as a passing gimmick. These are not impossible feats for virtual assistants, and will probably be resolved sooner than we think.

GANTT CHART

Roles and Responsibilities:

Utsav Kumar	Code Implementation
Tauqueer Alam	Design, Content and Overview
Anup Kumar	Report and Presentation

CONCLUSION

We've covered Python-based Personal Virtual Assistants for Windows in this report. Humans' lives are made simpler by virtual assistants. Using a virtual assistant gives you the freedom to contract for just the services you need.. Python is used to create virtual assistants for all Windows versions, much as Alexa, Cortana, Siri, and Google Assistant. Artificial Intelligence is used in this project, and virtual personal assistants are an excellent method to keep track of your calendar. Because of their portability, loyalty, and availability at any moment, virtual personal assistants are more dependable than human personal assistants. Our virtual assistant will get to know you better and be able to provide ideas and follow orders. This device will most likely be with us for the rest of our lives.

It is possible to enhance education by using immersive technology. Voice assistants may help students study in new and innovative ways. This article contains studies on the use of AI voice assistants in education. There hasn't been a lot of study done on voice assistants yet, but that's about to change. New discoveries could be made in the future as a result of this study's results. Next years will be all about voice-activated devices like smart speakers and virtual assistants. Exactly how they will be most successful in the classroom is still a mystery. As a result, not all voice assistants are bilingual, and this might be problematic. Additionally, voice assistants lack sufficient security safeguards and protection filters that students may use in the classroom. The use of these devices in the classroom can only be successful if instructors are given the proper training and incentives to do so. Despite the fact that most students and teachers have reported positive results, the data are sparse, fragmentary, and unstructured. More research is required to better understand the use of these devices in the classroom, according to our findings so far.