**PROJECT**

**SYNOPSIS ON**

**“S.O.V.I.A”**

**Service Oriented Virtual Intelligent Assistant**

Semester VII

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at

Department of Information Technology



**BABU BANARASI DAS INSTITUTE OF TECHNOLOGY &**

**MANAGEMENT, LUCKNOW**

**Submitted By:**

Nayan Srivastava 1705413040

Pragya 1705413043

Manvi Singh 1805413901

Smriti Verma 1605413091

Vanchhita 1805413902

**Submitted to:**

Dr. Manuj Darbari

HOD, Department of Information Technology

**ABSTRACT**

Voice assistants are digital assistants who work with the assistance of speech recognition, speech synthesis and linguistic communication processing provide services through any applications. This paper describes the approach in developing a non-public assistant that lowers the employment of input devices like keyboards and mouse and would focus more on a rather “touch free” experience.

Giving the assistant commands via speech makes it more user friendly and convenient instead of typing out the entire command or using the other devices for input. This report describes the representation model, along with the implementation of this system. Implementation of additional features like remote access or latest commands are going to be discussed. Different and innovative ways within which new technology could be accustomed an intelligent Voice Assistant attentively on user-based data are going to be explored. This paper will analyse different samples of various intelligent programs with tongue processing which is accessible to us currently, with various categories of support, and scrutinize the usefulness of 1 particular piece of software as a Voice Assistant. This engages the ability to talk socially through tongue processing, holding and analysing data within the context of the user. Our goal is to create the concept of Voice Assistant more robust on grow their utility in both the private and business realms.

**INTRODUCTION**

For us the last word dream would be having an assistant who can hear your instructions, process those commands, foresee any needs and take actions whenever necessary, this dream is now available to us within the style of computing assistants, aka voice assistants. Virtual voice assistant or can say intelligent virtual assistant or another term for this is Smart Chatbots. Tasks such as to create to-do lists or set remainders. They play a very important role if you make them your friend because they can interpret your voice and respond in a pre-set voice like Zira. This is a software used as an assistant which does work on the basis of individual commands. Most common examples for these assistants are Siri or Cortana. This software performs tasks when they are called to do. They take input as your voice and reply back in the same manner you ask them. This software is taught through supervised learning for how to behave. These assistants are basically used for Assisting purposes and they are called to do minor tasks.

It works in three major steps:

1. Recognising voice

2. Speech to text conversion

3. Text analysis

4. Response to commands

The project aims to provide users with a Virtual Assistant called **S.O.V.I.A** that would not only aid in their daily routine tasks like Searching the web, reading news, playing songs but would provide assistance for advanced tasks like understanding emotions and acting upon the same like playing songs to cheer up or telling jokes. S.O.V.I.A has the ability to learn and grow psychologically as well.

**LITERATURE SURVEY**

“Next-Generation of Virtual Personal Assistants by using Python, Node Red, and IBM Watson” by Veton Këpuska and “Next-generation of virtual personal assistants (Microsoft Cortana, Apple Siri, Amazon Alexa and Google Home)” by Veton Këpuska ; Gamal Bohouta

Artificial Intelligence is aiming a very high goal in the human life and technological development. Various multinational organizations are aiming for development of the best outcome of AI. It has been in trend about the machine and human interaction. AI gives us the way for making this interaction better and frequent. Development of Apple’s Siri, Google’s Assistant, Microsoft’s Cortana, Amazon’s Alexa, Facebook’s M etc. are the example of the same. The model he suggested is tested on various platforms but the main work is done on IBM Watson cloud using Node red. They suggest the use of VPA in various application such as self-driving cars etc. The IBM cloud was used to accelerate the working of the VPA by providing various tools and API’s for IOT and ML. The model increases the machine and user interaction. This became inspiration for so many to create such smart devices so that life of human being become easier.

**PROBLEM STATEMENT**

Voice based command systems like Cortana, and other virtual assistants that aid the tasks of users in several different platforms. But to our surprise these software consumes heavy data, heats up the system, and moreover they work on their specific Operating System, and have some lack points like they cannot control the application they have inbuilt in them.

**PROPOSED SOLUTION**

The proposed model of this program runs at a basic programming fundamental which will lead us to make a personal assistant for managing the desktop applications. It is basically provided with some input in speech form and it converts it using Google API into machine understandable language. According to the training provided to the system, it reacts on those commands. It compares the voice commands with the configuration file and later on performs bash functions on it. Google voice output collects the output of the instruction and finally delivers it in the speech form. It is very useful for all the phases of life and also to the differently abled person.

* Age (physical and mental frailty): It can be useful for the person who might be in a depression phase or some kind of tension. Whenever we are tensed, we try to communicate with something who understands us and react according to out mood. We can perfectly make this system work for that situation. Human behaviour is readable and the learning provided to it can be further used to help someone in his traumatic situation. Older age group people are unable to find a friend to talk or discuss their thoughts, this can be helpful for those situations. It can handle their mental and physical health by setting remainders for their medicine etc.
* Nature of their jobs: Due to its flexibility it can perfectly fit in the new generation era. It can control all your applications on your system.
* Mental disability (dyslexic patients etc.): Emotional support as discussed earlier can be the main feature to help out very severe conditions.
* Physical disability (amputations, blindness etc.): People with physical disability such as a blind person will be able to interact to this machine by listening and giving orders to do the work accordingly.

**PROJECT TEAM**

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| --- | --- |
| NAMES | ROLE |
| Nayan Srivastava | Basic Structure and Machine Learning Models, Overall Integration |
| Smriti Verma | GUI, Machine Learning Models |
| Vanchhita | Games, Basic Features of Assistant |
| Manvi Singh | Chatbot implementation |
| Pragya | Documentation, Deployment of modules |

**ACTIVITY CHART**

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| --- | --- |
| ACTIVITY | TIME(IN MONTHS) |
| Basic Structure | 1 Month |
| ML Models | 1 Month |
| Features and GUI | 1 Month |
| Final Integration | 2 Week |
| Deployment and Testing | 1 Month |

**SYSTEM REQUIREMENTS:**

CPU: 1.4Ghz, 32 Bit/64 Bit

RAM: 2GB

OS: Windows 7 and above/MacOS

**TECHNOLOGY USED**:

Domain: Artificial Intelligence

IDE: PyCharm, Jupyter Notebook, Google Colab

Language: Python-3.6

**RFERENCES**

**1.** Github.com

**2.** YouTube.com

**3.** Wikipedia.com

4. Google Patents