

“Education through self-help is our motto” – Karmaveer

**Rayat Shikshan Sanstha's
ANNASAHEB AWATE COLLEGE, Manchar
DEPARTMENT OF COMPUTER APPLICATION
B.B.A (CA)**



**A
PROJECT REPORT
ON
“Desktop AI Assistance System”
By**

**Pattar Aditya Mahesh
Khandeshe Sameer Sudhir**

**under the guidance of
Prof. Khatal. S.D**

Pune University, Pune

DECLARATION

We, **Aditya Mahesh Pattar & Sameer Sudhir Khandeshe**, hereby declare that this project work entitled “**Desktop AI Assistance System**” submitted at Annasaheb Awate College, Manchar (Affiliated to Savitribai Phule Pune University) is a record of original work done by me under the supervision and guidance of Prof. Khatal S.D, (Department of Computer Application)

ACKNOWLEDGEMENT

In completing this project report on project titled VIRTUAL ASSISTANT, I had to take the help and guideline of a few respected people, who deserve my greatest gratitude.

The completion of this project report gives me much Pleasure. I would like to show my gratitude to Prof. Sangita Khatal for giving me a good guideline for project throughout numerous consultations. I would also like to expand my deepest gratitude to all those who have directly and indirectly guided us in writing this project report.

Many people, especially my classmates and friends themselves, have made valuable comments and suggestions on this proposal which gave me inspiration to improve my project. Here I thank all the people for their help directly and indirectly to complete this project report.

Table of Contents

❖	ABSTRACT	6
1.0	INTRODUCTION	7
1.1	Need Of Voice Assistant	8
1.2	Present System	9
1.3	Proposed System	9
1.4	Aim And Purpose	10
1.5	Objectives of the System	11
2.0	PURPOSE , SCOPE AND APPLICABILITY	12
2.1	Purpose of System	12
2.2	Scope of System	12
2.3	Applicability of system	12
3.0	METHOD AND RESOURCES	13
3.1	Methodology	13
3.2	Existing System	13
3.3	Packages and Libraries	14
4.0	SYSTEM DESIGN	16

4.1	Requirement Specification	16
4.2	Feasibility Study	17
5.0	HARDWARE AND SOFTWARE SPECIFICATION	19
5.1	ER –diagram	20
5.2	Data Flow Diagram	21
5.3	Sequence Diagram	23
5.4	Sequence Diagram for task Execution	23
5.5	Activity diagram	24
5.6	Class Diagram	25
5.7	Use Case Diagram	26
5.8	Component Diagram	28
5.9	Deployment Diagram	28
6.0	SOFTWARE DETAILS	30
6.1	PyCharm	30
6.2	PyQt5	30
6.3	Implementation of work	31
6.4	Real Life Application	31
6.5	Data Implementation	32
6.6	System Testing	32
6.7	Functionality	32
7.0	CONCLUSION	33

ABSTRACT

As we know Python is an emerging language so it becomes easy to write a script for Voice Assistant in Python. The instructions for the assistant can be handled as per the requirement of user. Speech recognition is the process of converting speech into text. This is commonly used in voice assistants like Alexa, Siri, etc. In Python there is an API called **SpeechRecognition** which allows us to convert speech into text. It was an interesting task to make my own assistant. It became easier to send emails without typing any word, Searching on Google without opening the browser, and performing many other daily tasks like playing music, opening your favorite IDE with the help of a single voice command. In the current scenario, advancement in technologies are such that they can perform any task with same effectiveness or can say more effectively than us. By making this project, I realized that the concept of AI in every field is decreasing human effort and saving time.

Now the basic question arises in mind that how it is an AI? The virtual assistant that I have created is like if it is not an A.I, but it is the output of a bundle of the statement. But fundamentally, the main purpose of A.I machines is that it can perform human tasks with the same efficiency or even more efficiently than humans. It is a fact that my virtual assistant is not a very good example of A.I., but it is an A.I.

1. INTRODUCTION

Upcoming trending technologies such as virtual reality, augmented reality, voice interaction, IOT etc are changing the way people engage with the world and transforming digital experiences. Voice control is one of important development of human-machine interaction, which was possible because of advancement in Artificial Intelligence. In current era, we are able to train our machine to do their tasks by themselves or to think like humans using technologies like Artificial Intelligence, Machine Learning, Neural Networks, etc. we can talk to our machines with the help of virtual assistants. In recent time great appearance of voice assistants such as Apple's Siri, Google's Assistant, Microsoft's Cortana and Amazon's Alexa have been noticed due to heavy use of smartphones. Voice assistants uses technologies like voice recognition, speech synthesis, and Natural Language Processing (NLP) to provide various services which help users to perform their task using their machine by just giving commands in voice format and also with the help of Voice Assistant there will be no need to write the commands again and again for performing particular task.

Virtual assistants are very useful for old generation people, people with disabilities or special cases, small children who don't know to operate machines or smart gadgets, by making them sure that their interaction with machine is not difficult anymore and also enable them to perform Multitasking.

Basics fundamental tasks performed by Voice assistants are as follows:

- Search on web
- Play a music or video
- Setting a reminder and alarm
- Run any program or application
- Getting weather updates
- Sending WhatsApp, email messages etc.

These are very few examples of tasks performed by voice assistants, we can do many more things according to our requirement. The capabilities and improvements of voice assistants are continuously developing day by

day to provide better performance to users. We have used python modules and libraries for making our Desktop based voice assistant so that our personal voice assistant can run easily, smoothly on desktop.

The basic idea of our Project is that the user makes a request to voice assistant through the Microphone of the device to get their work done and then their command gets converted into text. Then the text request goes to processing gives text response along with work done by voice assistant. Along with basic day to day functionalities we are also trying to implement the concept of Face detection for security purpose in our voice assistant to make it more flexible and to it make it more personal. our program uses the least amount of system resources which minimizes the expensive system requirements also reduces threat to your system as it directly does not interact with servers.

1.1 Need of voice assistants:

There are lots of reason why this verbal voice command application is in need in real time situations. Some of them are given below.

- **To enable a highly engaging user experience:**

Voice assistance engages users like no other interface. Users can speak to the applications naturally to ask for whatever they'd like.

- **To make application frustration free:**

We have to touch, type and mouse in the existing machine system to getting our work done, which are makes user frustrated sometimes. By using voice assistant users can directly ask what they wanted to get done.

- **To personalize your app experience for every user:**

Voice assistants are actually able to respond for every user based on their locality, language and preferences.

- **To Remove Language Barriers:**

Voice Assistant technology are blended with Translation services which helps users to handle them in their own language without concerning about language barriers which allows them to interact more freely with voice assistant.

1.2 PRESENT SYSTEM

We are familiar with many existing voice assistants like Alexa, Siri, Google Assistant, Cortana which uses concept of language processing, and voice recognition. They listens the command given by the user as per their requirements and performs that specific function in a very efficient and effective manner.

As these voice assistants are using Artificial Intelligence hence the result that they are providing are highly accurate and efficient. These assistants can help to reduce human effort and consumes time while performing any task, they removed the concept of typing completely and behave as another individual to whom we are talking and asking to perform task. These assistants are no less than a human assistant but we can say that they are more effective and efficient to perform any task. The algorithm used to make these assistant focuses on the time complexities and reduces time.

But for using these assistants one should have an account (like Google account for Google assistant, Microsoft account for Cortana) and can use it with internet connection only because these assistants are going to work with internet connectivity. They are integrated with many devices like, phones, laptops, and speakers etc.

1.3 PROPOSED SYSTEM

It was an interesting task to make my own assistant. It became easier to send emails without typing any word, Searching on Google without opening the browser, and performing many other daily tasks like playing music, opening your favorite IDE with the help of a single voice command. Jarvis is different from other traditional voice assistants in terms that it is specific to desktop and user does not need to make account to use this, it does not require any internet connection while getting the instructions to perform any specific task.

The IDE used in this project is PyCharm. All the python files were created in PyCharm and all the necessary packages were easily installable in this IDE. For this project following modules and libraries were used i.e. pyttsx3, SpeechRecognition, Datetime, Wikipedia, Smtplib, pywhatkit, pyjokes, pyPDF2, pyautogui, PyQt etc. I have created a live GUI for

interacting with the JARVIS as it gives a design and interesting look while having the conversation.

With the advancement JARVIS can perform any task with same effectiveness or can say more effectively than us. By making this project, I realized that the concept of AI in every field is decreasing human effort and saving time. Functionalities of this project include, It can send emails, It can read PDF, It can send text on WhatsApp, It can open command prompt, your favorite IDE, notepad etc., It can play music, It can do Wikipedia searches for you, It can open websites like Google, YouTube, etc., in a web browser, It can give weather forecast, It can give desktop reminders of your choice. It can have some basic conversation.

1.4 AIM AND PURPOSE

According to the overall description in the context, the purpose of the project is to develop an Android application that provides an intelligent voice assistant with the functionalities as calling services, message transformation, mail exchange, alarm, event handler, location services, music play service, checking weather, searching engine (Google, Wikipedia), camera, Bing translator, Bluetooth headset support, help menu and Windows azure cloud computing.

Many years ago, software programs were developed and run on the computer. Nowadays, smart phones are widely used by all people. About 35 percent of the Americans have some sort of Smartphone. This shows that the market is increasing fast and there are also more capabilities for Smartphone because of this wide use. [2]

Therefore, the software development on the Smartphone is very promising. The operation modes on the Smartphone are by working with gestures and through the keyboard. It is not a convenient way for users with completely manually input. The common way of communication used by people in daily life is through the speech. If the mobile phone can listen to the user for the request or handle the daily affairs, then give the right response, it will be much easier for users to communicate with their phone, and the mobile phone will be much more “Smart” as a human assistant.

This project is focusing on the Android development over the voice control (recognition, generate and analyze corresponding commands, intelligent responses automatically), Google products and relevant APIs (Google map, Google weather, Google search and etc), Wikipedia API and mobile device references ranging from Speech-To-Text, Text-To-Speech technology, Bluetooth headset support and camera; advanced techniques of Cloud computing, Multi-threading, Adobe Photoshop image editing skills. As all those functionalities and services for the project have been explained, the main structure and construction of the project has been basically illustrated with its goals.

1.5 OBJECTIVES

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. JIA can do that for you. Provide a topic for research and continue with your tasks while JIA 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 JIA in advance about your tests and she 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.

2. PURPOSE, SCOPE AND APPLICABILITY

2.1 Purpose

Purpose of virtual assistant is to being capable of voice interaction, music playback, making to-do lists, setting alarms, streaming podcasts, playing audiobooks, and providing weather, traffic, sports, and other real-time information, such as news. Virtual assistants enable users to speak natural language voice commands in order to operate the device and its apps.

There is an increased overall awareness and a higher level of comfort demonstrated specifically by millennial consumers. In this ever-evolving digital world where speed, efficiency, and convenience are constantly being optimized, it's clear that we are moving towards less screen interaction.

2.2 Scope

Voice assistants will continue to offer more individualized experiences as they get better at differentiating between voices. However, it's not just developers that need to address the complexity of developing for voice as brands 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 maintaining a user experience that is consistent within the coming years as complexity becomes more of a concern. This is because the visual interface with voice assistants is missing. Users simply cannot see or touch a voice interface.

2.3 Applicability

The mass adoption of artificial intelligence in users' everyday lives is also fuelling the shift towards voice. The number of IoT devices such as smart thermostats and speakers are giving voice assistants more utility in a connected user's life. Smart speakers are the number one way we are seeing voice being used. Many industry experts even predict that nearly every application will integrate voice technology in some way in the next 5 years.

3. METHOD AND RESOURCES

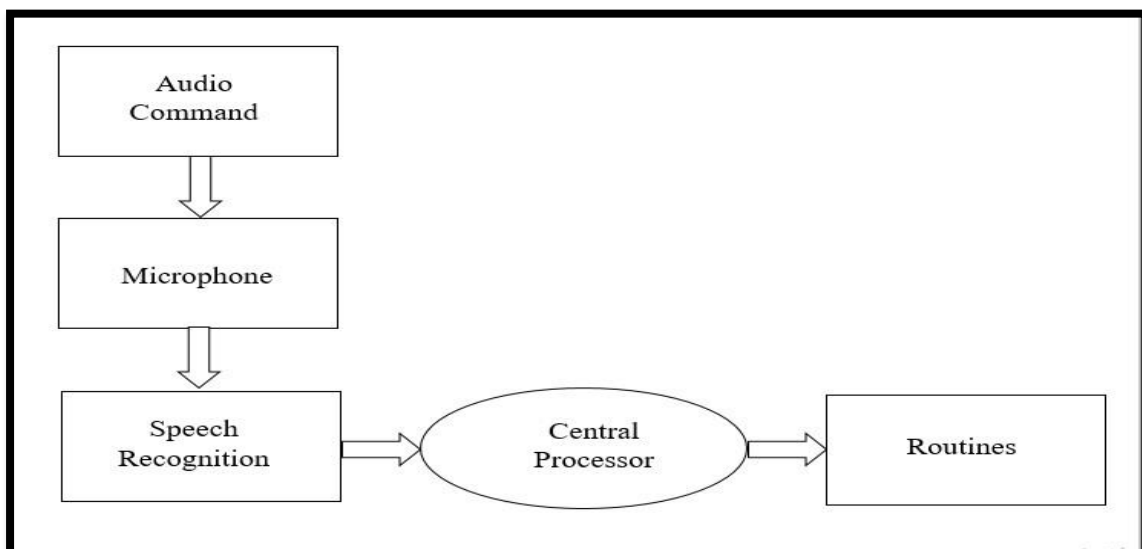
This project mainly concerns the work on Android application development; request calling between different Android applications, human-mobile phone interaction, database creation and management, the program will reference a lot of APIs from Google, Wikipedia, and Android development skills.

Apart from the project itself, there is also some investigation works on the existed products in this area and the tendency of voice product, personal assistant developing.

3.1 METHODOLOGY:

3.1.1 Existing System

In existing system, the audio command is taken as input through microphone of the device. The next task of voice assistant will be to analyse audio command and give appropriate output to the user.



The working process of existing system shown below:

3.3 Packages and Libraries used:

➤ Speech Recognition:

Speech Recognition library is used for listening to the words spoken by the users that is taken as input from microphone as a source and then process it for finding out its meaning and convert them into text format. This library allows machine system to understand the human language.

➤ Pyttsx3:

Pyttsx3 stands for Python text to speech library is used for making our voice assistant talk to us. It supports common text to speech engines which is like a tool that converts text into speech and makes voice assistant able to talk to its user. We can make it talking in both male and female voices according to requirement.

➤ Wikipedia:

We need to use Wikipedia library so that we can get information from Wikipedia on any topic or we can also ask for solution to our query or simply we can perform Wikipedia search for any topic using this library. This Library in python needs Internet connection for fetching results and it will provide results to user in text as well as voice format.

➤ Datetime:

This is an essential module to support the functionality of Date and time. Whenever user wants to know the current date and time or the user wants to schedule a task at a certain time then this module will be helpful to them.

➤ Pyautogui:

Pyautogui is a Python Package which has control over the mouse and the keyboard it is able to simulate the mouse cursor moves as well as clicks

the button press. With the help of particular 2-D coordinate we can click on exact location on screen.

➤ **Pywhatkit:**

Pywhatkit is a Python Library which has number of features like Sending messages, images through WhatsApp, playing YouTube videos, converting image to ASCII, sending emails etc.

➤ **Keyboard:**

Keyboard is library in Python which provides user the full control over the Keyboard. Especially the 'press ()' and 'write ()' function helps for controlling keyboard keys as well as writing messages on screen.

➤ **SpeedTest:**

Speedtest library is essential to test internet bandwidth. It helps to evaluate the uploading as well as downloading speed of Internet. All the result that we get are in Megabits.

➤ **OS:**

OS (Operating System) module in Python is used for interacting with operating system. Particularly we are using the 'Start file ()' to open any application that are installed in our system.

➤ **Smtplib:** Simple mail transfer protocol that allows us to send mails and to route mails between mail servers.

➤ **Pyjokes:** It is a python libraries which contains lots of interesting jokes in it.

➤ **Webbrowser:** It provides interface for displaying web-based documents to users.

➤ **Sys:** It allows operating on the interpreter as it provides access to the variables and functions that usually interact strongly with the interpreter.

4. SYSTEM DESIGN

4.1 REQUIREMENT SPECIFICATION

Personal assistant software is required to act as an interface into the digital world by understanding user requests or commands and then translating into actions or recommendations based on agent's understanding of the world.

JIA focuses on relieving the user of entering text input and using voice as primary means of user input. Agent then applies voice recognition algorithms to this input and records the input. It then use this input to call one of the personal information management applications such as task list or calendar to record a new entry or to search about it on search engines like Google, Bing or Yahoo etc. Focus is on capturing the user input through voice, recognizing the input and then executing the tasks if the agent understands the task. Software takes this input in natural language, and so makes it easier for the user to input what he or she desires to be done.

Voice recognition software enables hands free use of the applications, lets users to query or command the agent through voice interface. This helps users to have access to the agent while performing other tasks and thus enhances value of the system itself. JIA also have ubiquitous connectivity through Wi-Fi or LAN connection, enabling distributed applications that can leverage other APIs exposed on the web without a need to store them locally.

Virtual assistants must provide a wide variety of services. These include:

- Providing information such as weather, facts from e.g. Wikipedia etc.
- Set an alarm or make to-do lists and shopping lists.
- Remind you of birthdays and meetings.
- Play music from streaming services such as Saavn and Gaana.
- Play videos, TV shows or movies on televisions, streaming from e.g. Netflix or Hotstar.

4.2 Feasibility Study

Feasibility study can help you determine whether or not you should proceed with your project. It is essential to evaluate cost and benefit. It is essential to evaluate cost and benefit of the proposed system. Five types of feasibility study are taken into consideration.

1. **Technical feasibility:** It includes finding out technologies for the project, both hardware and software. For virtual assistant, user must have microphone to convey their message and a speaker to listen when system speaks. These are very cheap now a days and everyone generally possess them. Besides, system needs internet connection. While using JIA, make sure you have a steady internet connection. It is also not an issue in this era where almost every home or office has Wi-Fi.
2. **Operational feasibility:** It is the ease and simplicity of operation of proposed system. System does not require any special skill set for users to operate it. In fact, it is designed to be used by almost everyone. Kids who still don't know to write can read out problems for system and get answers.
3. **Economical feasibility:** Here, we find the total cost and benefit of the proposed system over current system. For this project, the main cost is documentation cost. User also would have to pay for microphone and speakers. Again, they are cheap and available. As far as maintenance is concerned, JIA won't cost too much.
4. **Organizational feasibility:** This shows the management and organizational structure of the project. This project is not built by a team. The management tasks are all to be carried out by a single person. That won't create any management issues and will increase the feasibility of the project.
5. **Cultural feasibility:** It deals with compatibility of the project with cultural environment. Virtual assistant is built in accordance with the

general culture. The project is named JIA so as to represent Indian culture without undermining local beliefs.

This project is technically feasible with no external hardware requirements. Also it is simple in operation and does not cost training or repairs. Overall feasibility study of the project reveals that the goals of the proposed system are achievable. Decision is taken to proceed with the project.

5. HARDWARE AND SOFTWARE REQUIREMENTS

The software is designed to be light-weighted so that it doesn't be a burden on the machine running it. This system is being build keeping in mind the generally available hardware and software compatibility. Here are the minimum hardware and software requirement for virtual assistant.

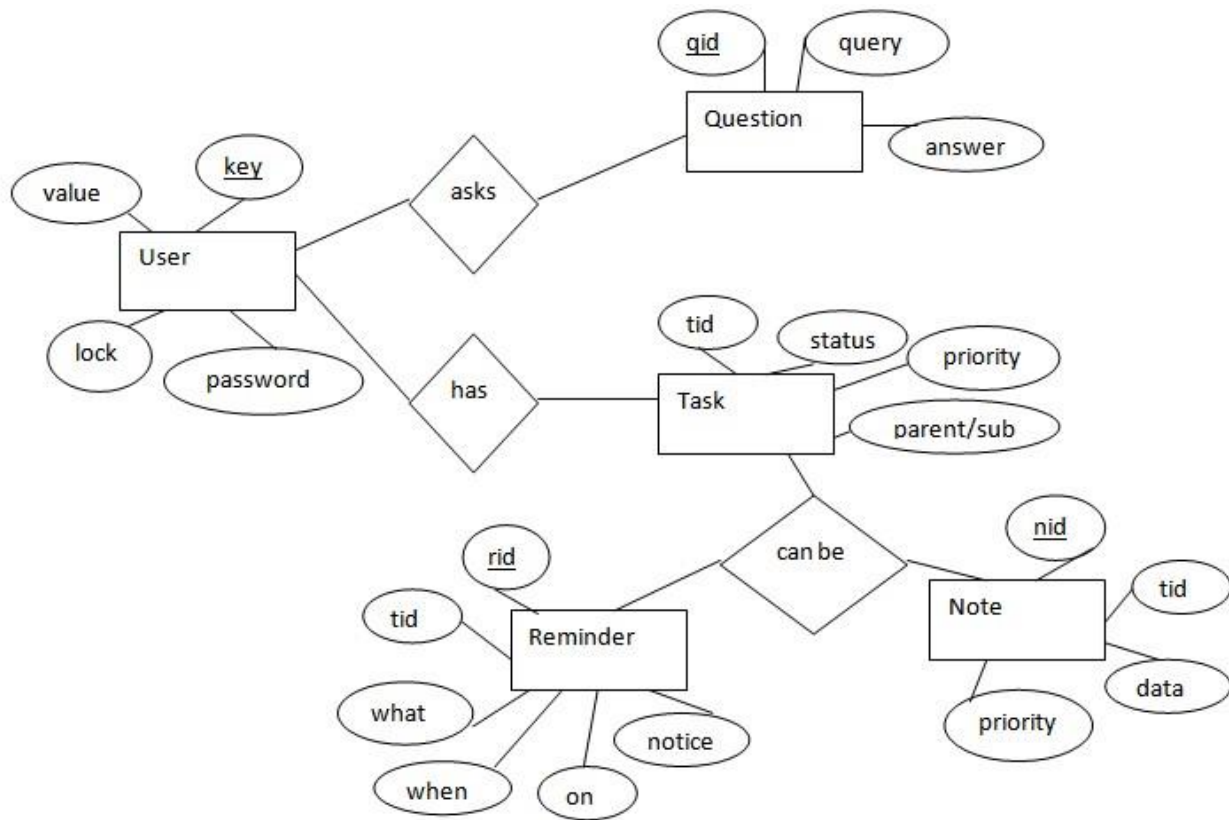
Hardware:

- **Pentium-pro processor or later.**
- **RAM 8 GB or more.**

Software:

- **Windows 10(64-bit) or above.**
- **Python 3.11.1 or later**
- **Chrome Driver**
- **VS- Code**
- **PyCharm IDE**

5.1 ER DIAGRAM

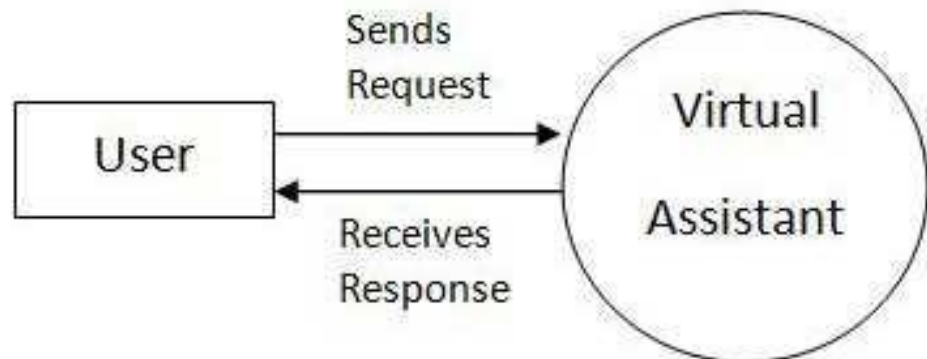


The above diagram shows entities and their relationship for a virtual assistant system. We have a user of a system who can have their keys and values. It can be used to store any information about the user. Say, for key “name” value can be “Jim”. For some keys user might like to keep secure. There he can enable lock and set a password (voice clip).

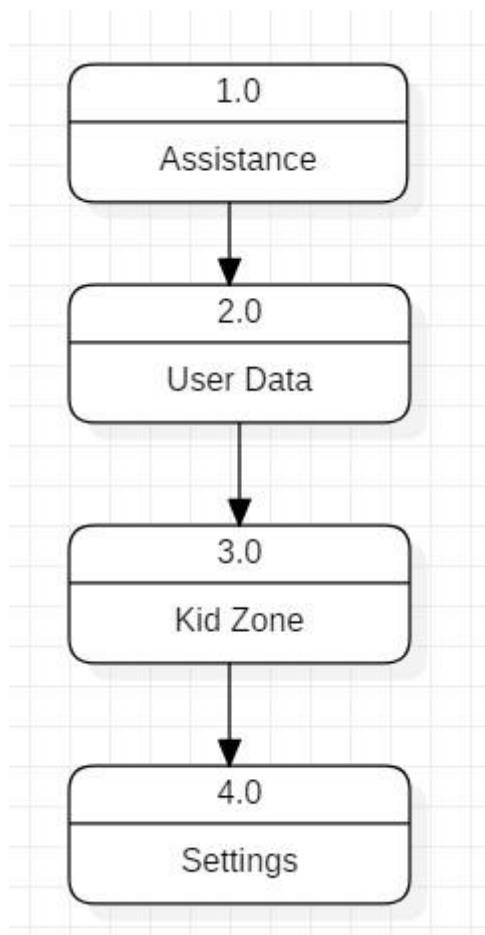
Single user can ask multiple questions. Each question will be given ID to get recognized along with the query and its corresponding answer. User can also be having n number of tasks. These should have their own unique id and status i.e. their current state. A task should also have a priority value and its category whether it is a parent task or child task of an older task.

5.2 DATA FLOW DIAGRAM

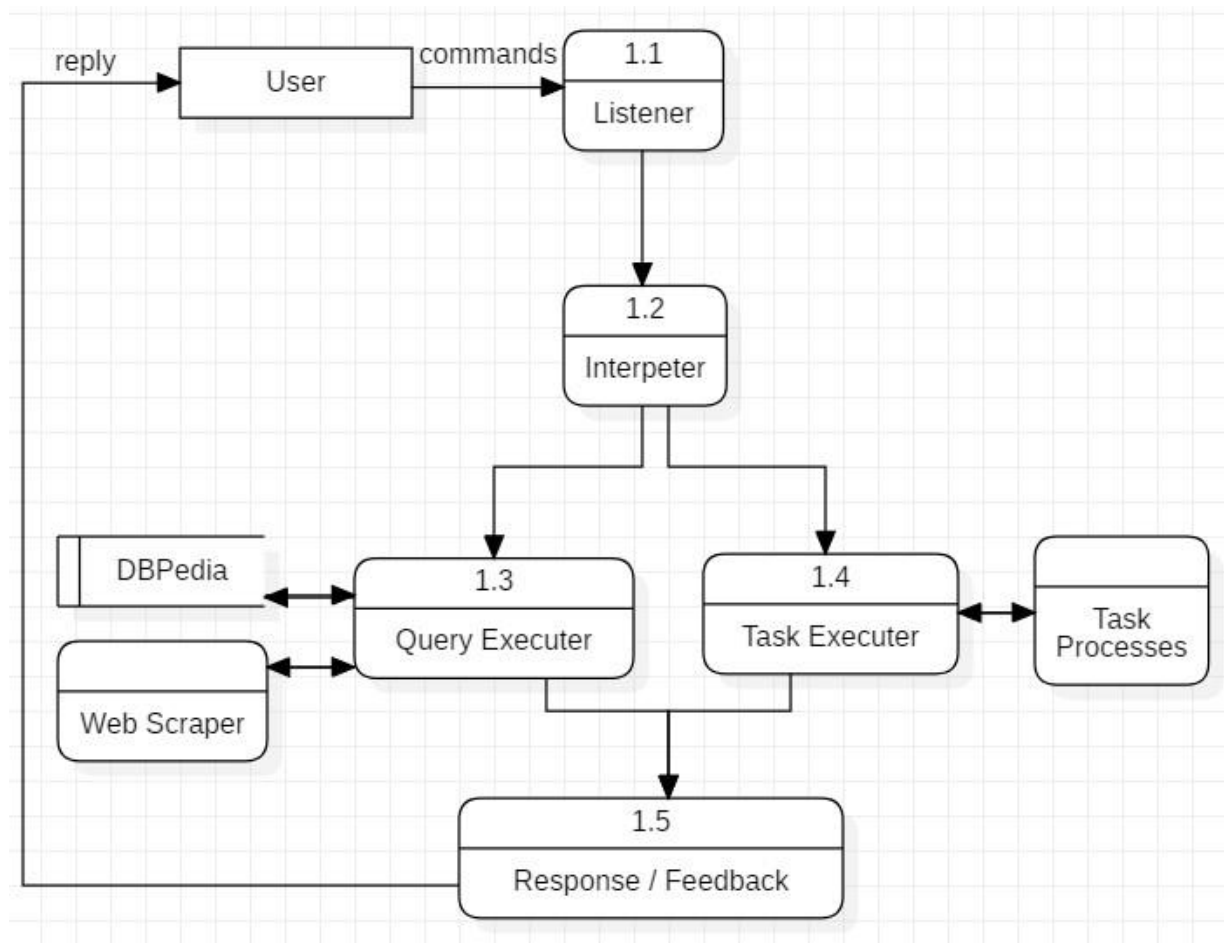
DFD Level 0 (Context Level Diagram)



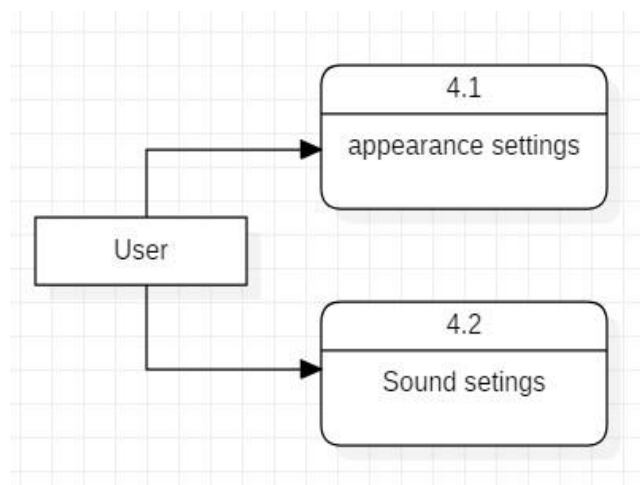
DFD Level 1



DFD Level 2

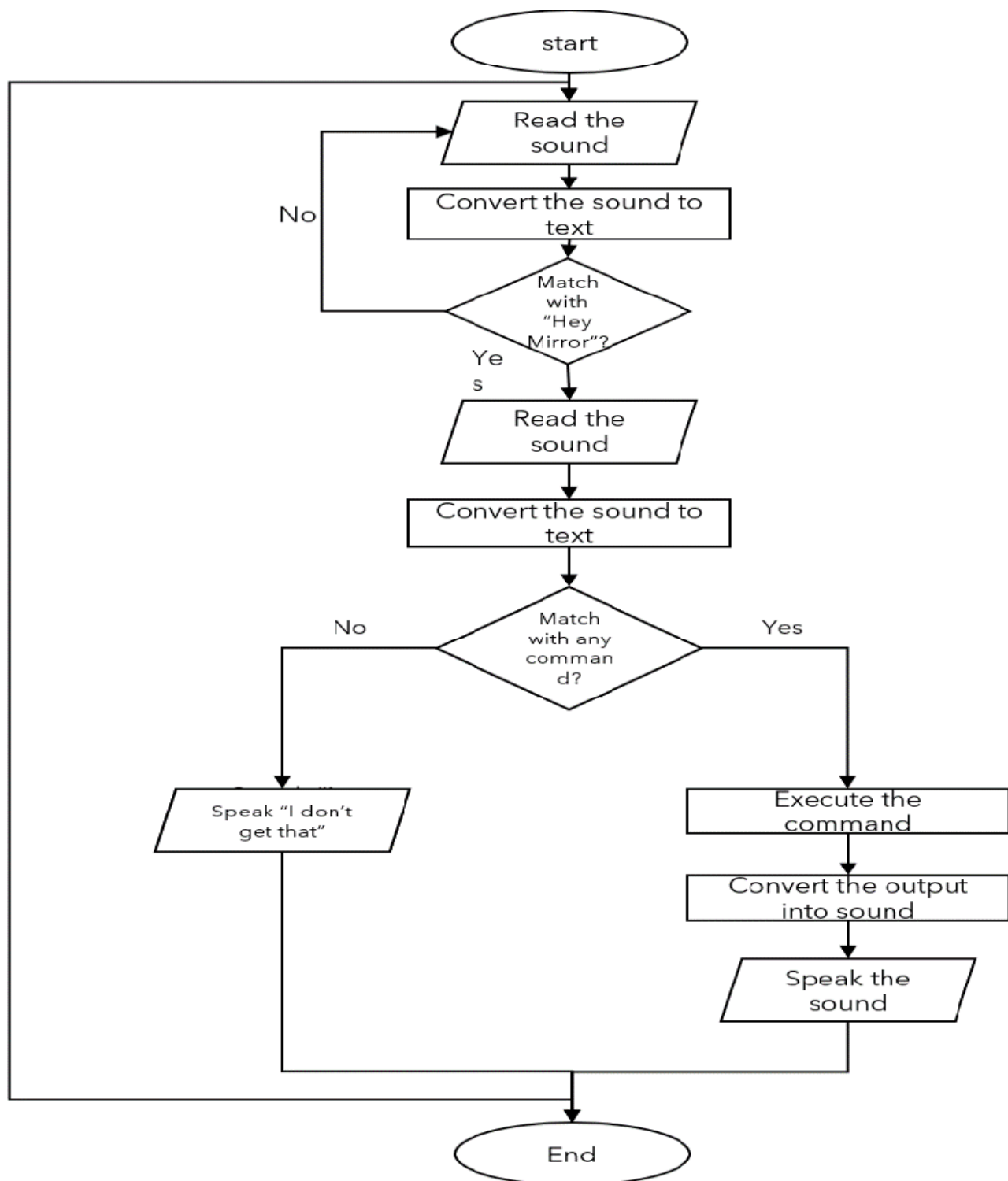


Data Flow in Assistance

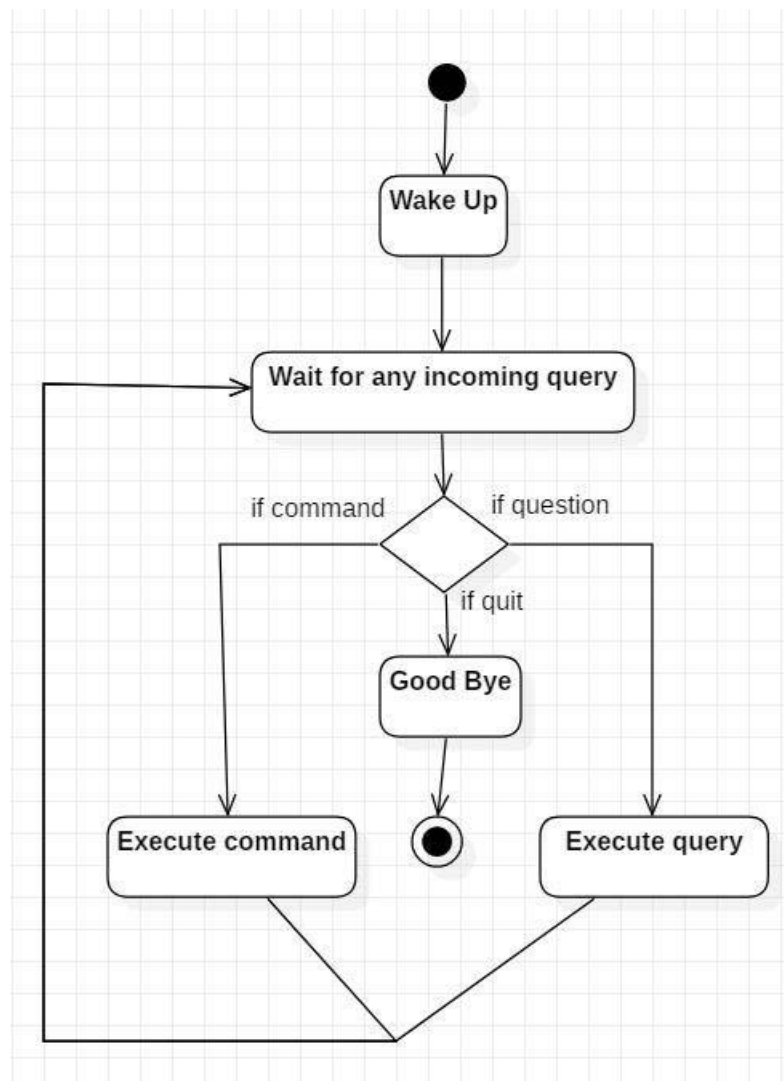


Settings of virtual Assistant

5.3 Sequential Data Flow Diagram



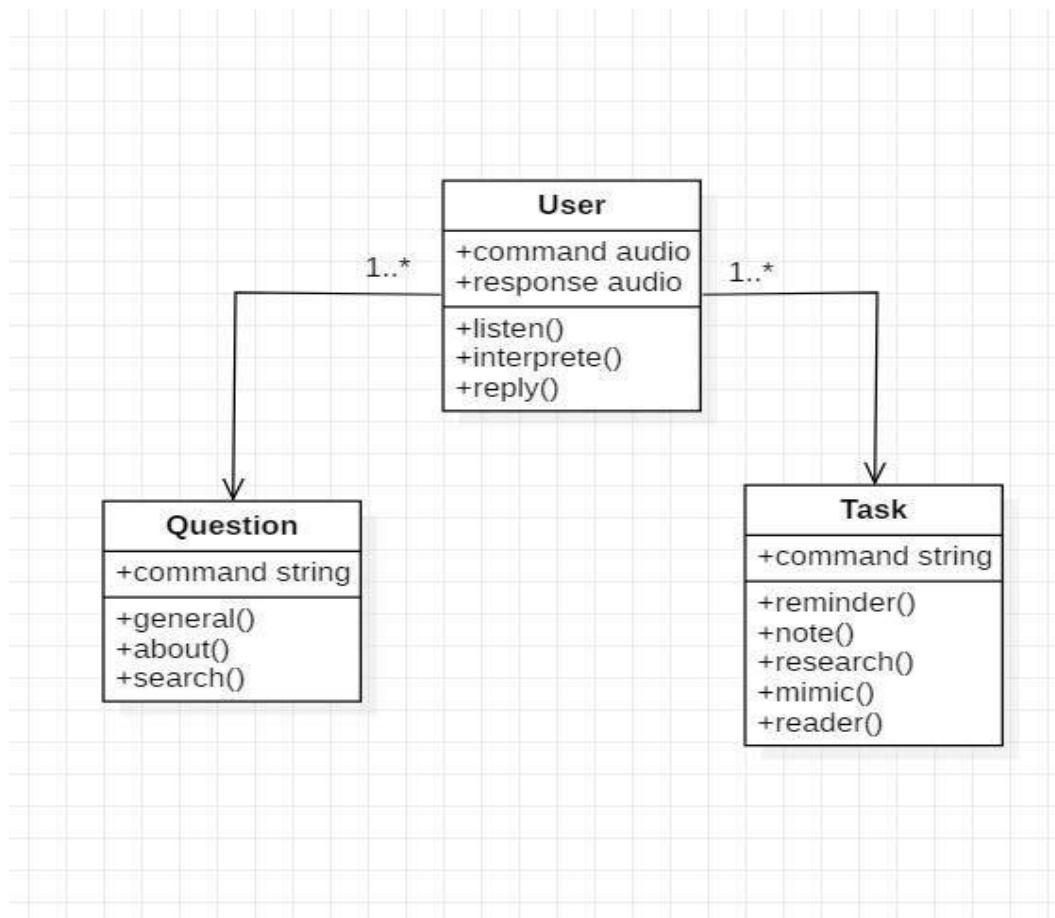
5.4 ACTIVITY DIAGRAM



Initially, the system is in idle mode. As it receives any wake up call 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.

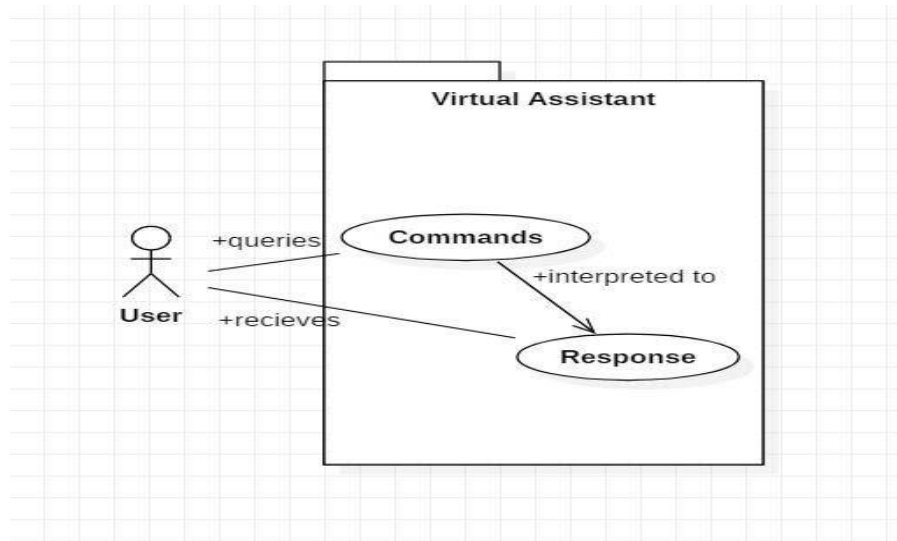
5.5 CLASS DIAGRAM



The class user has 2 attributes command that it sends in audio and the response it receives which is also audio. It performs function to listen the user command. Interpret it and then reply or sends back response accordingly. Question class has the command in string form as it is interpreted by interpret class. It sends it to general or about or search function based on its identification.

The task class also has interpreted command in string format. It has various functions like reminder, note, mimic, research and reader.

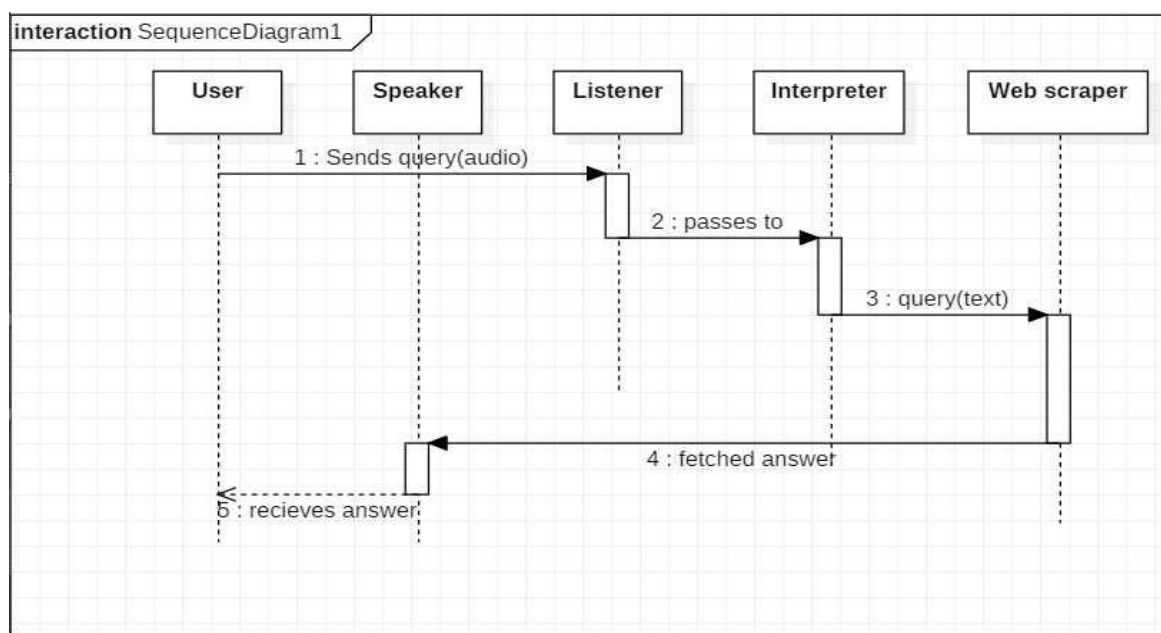
5.6 USE CASE DIAGRAM



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

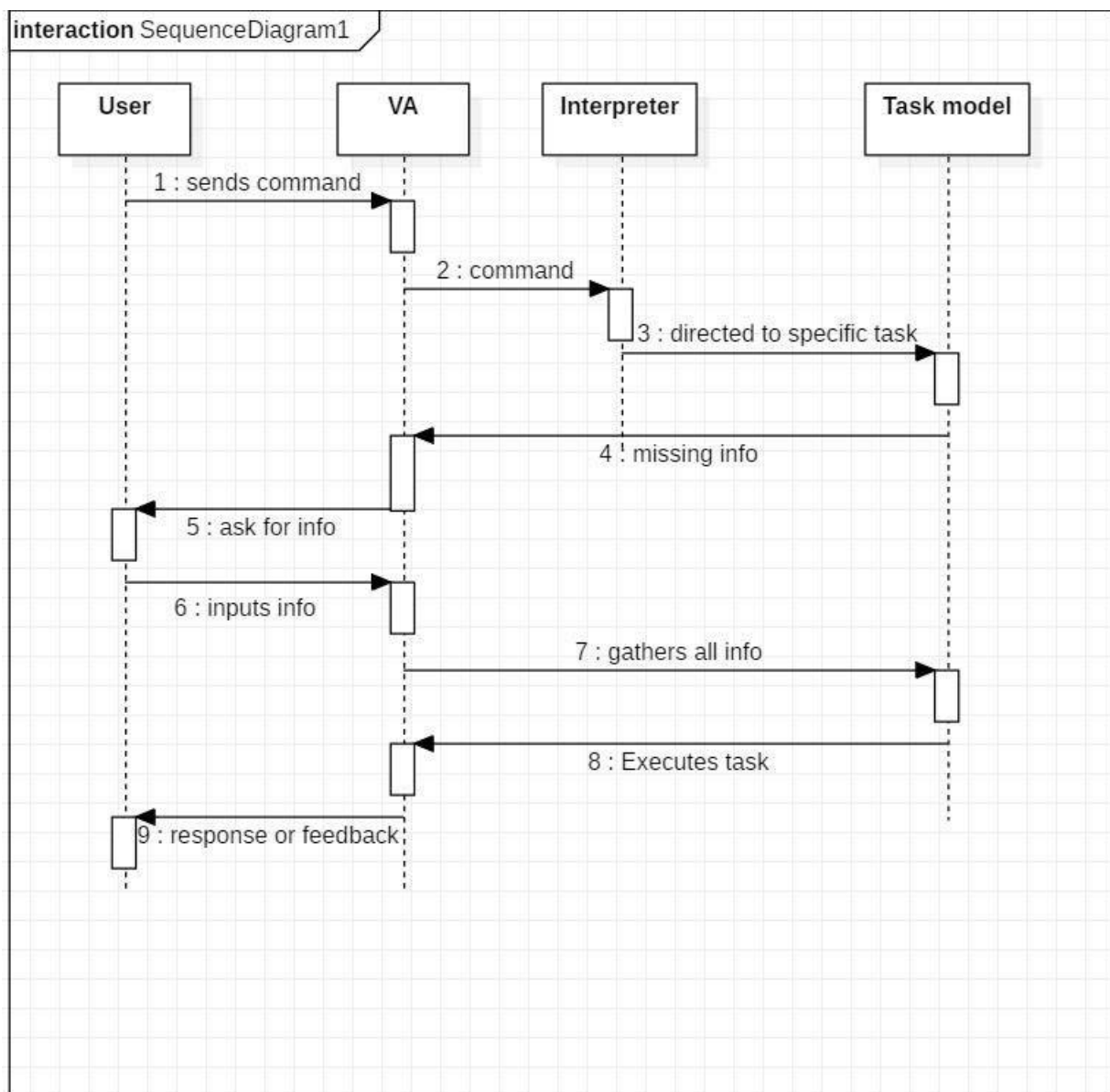
5.7 SEQUENCE DIAGRAM

Sequence diagram for Query-Response



The above sequence diagram shows how an answer asked by the user is being fetched from internet. The audio query is interpreted and sent to Web scraper. The web scraper searches and finds the answer. It is then sent back to speaker, where it speaks the answer to user.

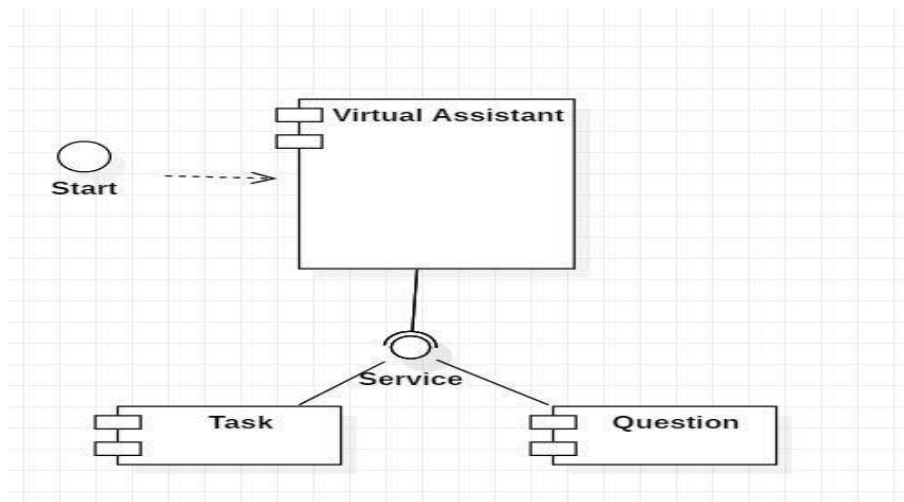
5.8 Sequence diagram for Task Execution



The user sends command to virtual assistant in audio form. The command is passed to the interpreter. It identifies what the user has asked

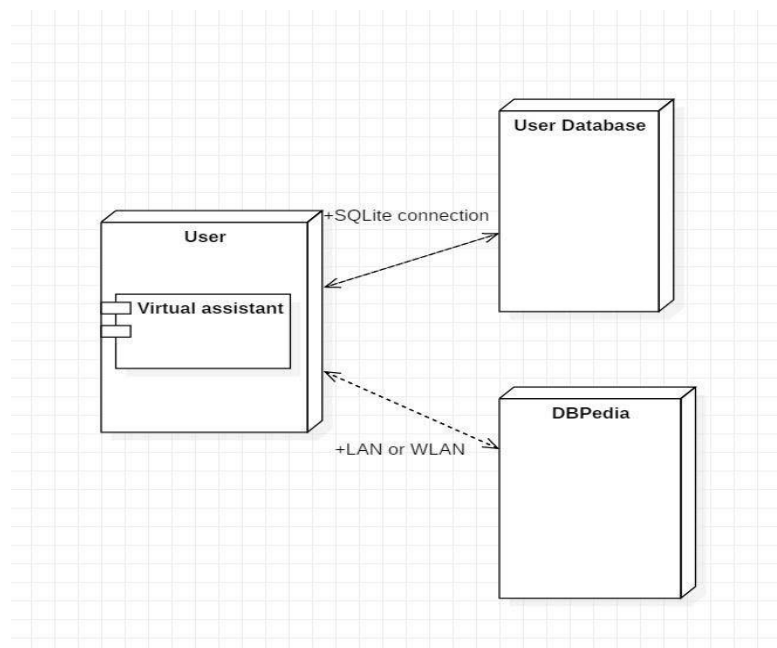
and directs it to task executor. If the task is missing some info, the virtual assistant asks user back about it. The received information is sent back to task and it is accomplished. After execution feedback is sent back to user.

5.9 COMPONENT DIAGRAM



The main component here is the Virtual Assistant. It provides two specific service, executing Task or Answering your question.

5.10 DEPLOYMENT DIAGRAM



The system is designed using the concept of Artificial Intelligence and with the help of necessary packages of Python. Python provides many libraries and packages to perform the tasks, for example pyPDF2 can be used to read PDF. The details of these packages are mentioned in Chapter 3 of this report.

The data in this project is nothing but user input, whatever the user says, the assistant performs the task accordingly. The user input is nothing specific but the list of tasks which a user wants to get performed in human language i.e. English.

6. SOFTWARE DETAILS

The IDE used in this project is PyCharm. All the python files were created in PyCharm and all the necessary packages were easily installable in this IDE. For this project following modules and libraries were used i.e. pyttsx3, SpeechRecognition, Datetime, Wikipedia, Smtplib, pywhatkit, pyjokes, pyPDF2, pyautogui, PyQt etc. I have created a live GUI for interacting with the JARVIS as it gives a design and interesting look while having the conversation.

6.1 PYCHARM

It is an IDE i.e. Integrated Development Environment which has many features like it supports scientific tools (like matplotlib, numpy, scipy etc) web frameworks (example Django, web2py and Flask) refactoring in Python, integrated python debugger, code completion, code and project navigation etc. It also provides Data Science when used with Anaconda.

6.2 PYQT5 FOR LIVE GUI

PyQt5 is the most important python binding. It contains set of GUI widgets. PyQt5 has some important python modules like QTWidgets, QtCore, QtGui, and QtDesigner etc

6.3 IMPLEMENTATION OF WORK DETAILS

JARVIS, a desktop assistant is a voice assistant that can perform many daily tasks of desktop like playing music, opening your favourite IDE with the help of a single voice command. Jarvis is different from other traditional voice assistants in terms that it is specific to desktop and user does not need to make account to use this, it does not require any internet connection while getting the instructions to perform any specific task.

6.4 REAL LIFE APPLICATION

Saves time: JARVIS is a desktop voice assistant which works on the voice command offered to it, it can do voice searching, voice-activated device control and can let us complete a set of tasks.

Conversational interaction: It makes it easier to complete any task as it automatically do it by using the essential module or libraries of Python, in a conversational interaction way. Hence any user when instruct any task to it, they feel like giving task to a human assistant because of the conversational interaction for giving input and getting the desired output in the form of task done.

Reactive nature: The desktop assistant is reactive which means it know human language very well and understand the context that is provided by the user and gives response in the same way, i.e. human understandable language, English. So user finds its reaction in an informed and smart way.

Multitasking: The main application of it can be its multitasking ability. It can ask for continuous instruction one after other until the user “QUIT” it.

No Trigger phase: It asks for the instruction and listen the response that is given by user without needing any trigger phase and then only executes the task.

6.5 DATA IMPLEMENTATION

As the first step, install all the necessary packages and libraries. The command used to install the libraries is “pip install” and then import it. The necessary packages included are as follows:

6.6 SYSTEM TESTING

The system testing is done on fully integrated system to check whether the requirements are matching or not. The system testing for JARVIS desktop assistant focuses on the following four parameters:

6.7 FUNCTIONALITY

In this we check the functionality of the system whether the system performs the task which it was intended to do. To check the functionality each function was checked and run, if it is able to execute the required task correctly then the system passes in that particular functionality test. For example to check whether JARVIS can search on Google or not, as we can see in the figure 7.1, user said “Open Google”, then Jarvis asked, “What should I search on Google?” then user said, “What is Python”, Jarvis open Google and searched for the required input.

TakeCommand (): The function is used to take the command as input through microphone of user and returns the output as string.

WishMe (): This function greets the user according to the time like Good Morning, Good Afternoon and Good Evening.

taskExecution(): This is the function which contains all the necessary task execution definition like sendEmail(), pdf_reader(), news() and many conditions in if condition like “open google”, “open notepad”, “search on Wikipedia”, “play music” and “open command prompt” etc.

7. CONCLUSION

In this Paper we have discussed uses, methodology as well as implementation details of the personal Desktop based voice assistant using Python which is built using open-source software PyCharm as an implementation tool. This Project will be helpful for people of all generations as well as to people with some disabilities or people with some special cases. The personal voice assistant will be easy to use and will reduce the manual human efforts for performing various tasks. The functionality of the current voice assistant system is limited to working on Desktop based and working online (required to have internet connection to perform tasks) only. The voice assistant system is modular in nature so that addition of new features is possible without disturbing current system functionalities.