Speaking Assistant

Submitted in partial fulfillment of the requirements for the award of degree of
BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE & ENGINEERING

Submitted to:
Geet k. Kaur mam

Submitted By:
AYUSH RANA
19BCS1143
PRAJWAL SHARMA
19BCS1144

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
Chandigarh University, Gharuan
September 2021

INTRODUCTION

An **intelligent virtual assistant** (**IVA**) or **speaking assistant** is a software that can perform tasks or services for an individual based on commands or questions. The term "chatbot" is sometimes used to refer to virtual assistants generally or specifically accessed by online chat. In some cases, online chat programs are exclusively for entertainment purposes. Some virtual assistants are able to interpret human speech and respond via synthesized voices. Users can ask their assistants questions, control home automation devices and media playback via voice, and manage other basic tasks such as email, to-do lists, and calendars with verbal (spoken?) commands. A similar concept, however with differences, lays under the dialogue systems.

As of 2017, the capabilities and usage of virtual assistants are expanding rapidly, with new products entering the market and a strong emphasis on both email and voice user interfaces. Apple and Google have large installed bases of users on smartphones. Microsoft has a large installed base of Windows-based personal computers, smartphones and smart speakers. Amazon has a large install base for smart speakers. Conversica has over 100 million engagements via its email and sms interface Intelligent Virtual Assistants for business.

Brief History

The 1990s digital speech recognition technology became a feature of the personal computer with IBM, Philips and Lemout & Hauspie fighting for customers. Much later the market launch of the first smartphone IBM Simon in 1994 laid the foundation for smart virtual assistants as we know them today.

In 1997 Dragon's Naturally Speaking software could recognize and transcribe natural human speech without pauses between each word into a document at a rate of 100 words per minute. A version of Naturally Speaking is still available for download and it is still used today, for instance, by many doctors in the US and the UK to document their medical records.

In 2001 Colloquis publicly launched SmarterChild, on platforms like AIM and MSN Messenger. While entirely text-based SmarterChild was able to play games, check the weather, look up facts, and converse with users to an extent.

The first modern digital virtual assistant installed on a smartphone was Siri, which was introduced as a feature of the iPhone 4S on 4 October 2011. Apple Inc. developed Siri following the 2010 acquisition of Siri Inc. a spin-off of SRI International, which is a research institute financed by DARPA and the United States Department of Defense. Its aim was to aid in tasks such as sending a text message, making phone calls, checking the weather or setting up an alarm. Over time, it has developed to provide restaurant recommendations, search the internet, and provide driving directions.

In November 2014, Amazon announced Alexa alongside the Echo.

In April 2017 Amazon released a service for building conversational interfaces for any type of virtual assistant or interface.

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 Jerry, 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. Economic 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, it 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.

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.

METHODOLOGY

This project contains three steps :

1. Development of GUI Interface for speaking assistant
2. Coding of functions to be deployed for the working of speaking assistant
3. Insertion of queries for the functioning of speaking assistant

MODULE & TEAM MEMBER WISE WORK DISTRIBUTION

This project is divided into two modules :

1. Module-1(GUI Interface) : It will be done by **Prajwal Sharma** with the help of **Pyqt5(Python)**
2. Module-2(Functioning) : It will be done by **Ayush Rana** with the help of **Python**

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 speaking assistant.

Hardware:

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

Software:

- Windows 7(32-bit) or above.
- Python 3.0 or later

REFERENCE AND BIBLIOGRAPHY

• Websites referred

 www.stackoverflow.com

 www.pythonprogramming.net

 www.tutorialspoint.com

 www.google.co.in

• Books referred

 Python Programming - Kiran Gurbani

 Learning Python - Mark Lutz

• YouTube Channels referred

 Code with Harry