Speech Based Assistant

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Abstract:
For the past couple of years, the voice assistant has been the most successful software agent which can assist an individual through a voice. To accommodate new demands and applications, there is a need to developed a speech–based assistant which helps farmers to sell their products. However, this project intends to provide users a platform to market their products and also allows them even to bargain with the other users. Since, language barrier a problem in India, English is not widely spoken among farmers where this project aims to deliver them in their local language. The other main purpose of this speech-based assistant is to provide an advantage for the farmers and the consumers to buy or sell their agriculture products without any third-party involvement. This helps in improving contacts with others. Hence it provides privilege to the farmer for pricing and selling of the product. Through this, it can make sure farmers are well reached out.

Keywords: Voice assistant, Google dialog, Dialog flow, Firebase.

I. INTRODUCTION
Speech-based assistant (SPEBA) is the term refers to an assistant that works or assists any individual based on the voice. It works as a chatbot that responds to the text and speech as well. This project involves text-to-speech and speech-to-text mechanisms. SPEBA recognizes the voice that is given as input and responds accordingly. The accuracy of the voice is considered and responses are provided. The limitations of this system are more clear when a larger number of clients are working at a time. This process includes a large processing requirement for the server’s processor and memory resources. The client has to interpret the signal while he utilizes the operating system for an input mechanism to receive a signal. Response generation from the server is divided into two categories: receiving data and providing information. This requires particulars of news and an intelligent algorithm to generate user-specific responses that contain helpful information.

II. LITERATURE SURVEY
Agriculture is the most crucial sector in India. Agricultural marketing is the conjunction of agriculture and marketing. In the widest meaning, Agriculture means activities point at the consumption of natural resources for human well-being, and marketing brings a chain of activities that involves bringing the products from the place of production and moving them to the place of consumption. A farmer’s market is an actual retail marketplace where farmers sell goods directly to the consumers. A farmer’s market may include indoor or outdoor and typically consists of booths, stands, and tables where farmers sell their agriculture grown products, live animals, and sometimes make foods and beverages. From the survey, it is found that there are two types of marketing: wholesale direct marketing and wholesale distribution. Wholesale direct marketing is the process of sales of goods and products to the local markets whereas wholesale distribution is the process done by distribution companies in a series of marketing steps that are organized to end up in retail sales to consumers. On choosing wholesale direct marketing, it’s not easy to find markets for the product when there is an immigrant farmer or someone new to farming. Since a direct approach will help the farmers to gain more profits it is helpful to connect them directly to the consumer. A study conducted by Khakkar et. al., (2005) has found that in, Marketing of Mushroom in Haryana major share of consumer’s rupee is gone to the pockets of the middlemen. He, therefore, advocated the government intervention to safeguard the farmers” interest by introducing cooperative marketing and processing of agricultural products [1]. Jaffer et.al (2005), show that when the number of intermediaries reduces more the market efficiency increases [2]. Sudha. et.al (2005) have found that the consumers use to profit well when there are no middlemen exists than when middleman existed. So, marketing efficiency is more where there is no middle man existed[3].

III. DESCRIPTION
There are many formidable challenges faced by farmers in agricultural marketing in the past few years. Many farmers have been subjected to various production issues due to poor access and lack of awareness in technology and their efficiency. As described earlier certain problems are being faced by the farmers when they want to sell the products in the market without any third-party involvement. Hence there is an utmost need for advancement in methods followed while in trading.

Software used:
A. Flutter
Flutter is open-source. It is also known as a cross-platform development framework for mobile and web applications from Google. It provides high-performance and beautiful applications to be designed for both iOS and Android from a single base.

Figure.1. Backend of Flutter
It is the event platform for the upcoming Fuchsia package by Google. Additionally, it is designed in a way that it will be dropped from other platforms, via embedders such as customer flutter engine.

The major components of Flutter include:
- Dart Platform
- Flutter Engine
- Foundation Library
- Design-specific widgets

B. Dialog flow
Dialogflow may be a language understanding platform that has a simple thanks to styling and accommodate a conversational interface into your mobile app, web application, device, chatbot, interactive voice response system, and so on.

![Figure 2. Working of Dialogflow](image)

With the help of Dialogflow, we can provide new and fascinating ways for users to interact with your product. Dialogflow can scrutinize multiple sorts of input from your customers, including text or audio inputs (like from a phone or voice recording). It also can reply to the customers in a few ways, either through text or with synthetic speech.

C. Google Cloud Platform
Google Cloud Platform may be a suite for cloud computing services that runs on the identical base structure which is used internally by Google for its end-user products. It’s a cloud-based machine. It provides computing resources for installing and operating applications on the net. It has a specialty of producing an area for people and enterprises to develop and run the software, which is can use the net to attach to the users of that software. It ha a good range of services like IaaS (Infrastructure as a Service), PaaS (Platform as a Service), and serverless computing.

![Figure 3. Services of GCP](image)

D. Firebase Database
Firebase is well known for its development platform which offers a huge set of products and tools that are needed. Firebase acts as a Backend as a Service (BaaS). The major advantage of Firebase is its real-time capacity. Functionalities that include in Firebase are analytics, databases, messaging, and crash reporting.

![Figure 4. Mobile app backend service using Firebase](image)

Firebase APIs are packaged into a single SDK so that we can expand to many platforms and include other languages like c++ and many others.

IV. WORKING
The project developed has two applications one based on the seller and other based on the buyer perspective. The user can access the application through voice and get response in speech, which makes the applications hands-free. The input voice can be recognized through speech-to-text api, which further processed in dialogflow to get response in speech through speech-to-text api. The language medium here used can be any local language and in this in case Telugu. The workflow analysis of the project can be depicted through class diagrams and these uml diagrams are used for project structure.

![Figure 5. UML Diagram of the project](image)

V. OBJECTIVE
The objective of this project is to provide an assistant to the farmer in agricultural marketing. It helps in constructing a bridge between the farmer and the consumer. This application helps in avoiding the third-party involvement in marketing, which helps in increasing profits for the farmers and also involving them to interact in their local language (in this case Telugu)
VI. OUTPUT

Figure.6. Splash Screen with shimmer effect

Figure.7. A sample screenshot of assistant interacting with the user

VII. FUTURE ENHANCEMENT

The present proposed system can be utilized to a new extent where it can work as an intelligent assistant for the farmers and also proves to be a positive impact of the business. As this proposed system can be integrated into various local languages and hence can curb the language barrier, this system can be used by government organizations for reaching the remote participant.

VIII. CONCLUSION

The project proposed can help the farmers gain profit in agricultural marketing and will not leave anybody with any loss. This helps them increase their communication borders and make more contacts that help in the future. Hence it is concluded that using advanced technologies we can overcome any problem that our country farmers are facing nowadays. Thus, look forward to the future enhancements in the technology that will lead to a developed country.

XI. REFERENCES


