Touch Screen Based Menu Card Using Google Assistant

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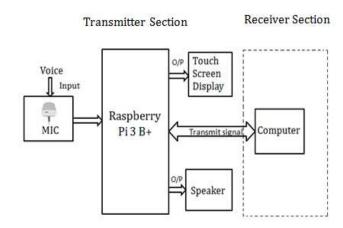
Abstract - *Touch screen menu card using Google assistant System can help Restaurants decrease number of human resources, improve work efficiency. Using wireless modules, can save the development costs. It is a portable device. In this paper, development of the touch screen based menu card using Google assistant system is based on the Google assistant SDK platform and Raspberry pi. A traditional restaurant management process usually used to take customer's orders by writing it down on a piece of paper. Using this method many mistakes are done during ordering process, and it takes a lot of time during process. For reduce that time we developed this system. This project covers the implementation of ordering system for restaurants by using Google assistant. The menu will be displayed on the screen of the raspberry pi. There is no requirement of human to take the order. We can order the food from menu using the Google assistant by giving voice commands.*

Key Words: **Raspberry pi3, Google Assistant, Touch Screen Display, HTML, Python**

1. INTRODUCTION

The basic aim of implementing the Touch screen based Menu card using Google assistant system is to the make whole process of food ordering in hotels or restaurants automatic. This system also providing comfortable and easy services to the customers. The other aim is to reduce the number of workers in the hotels. Customer will place the order from the system and the order will directly go to the kitchen section. The Touch screen based menu card using Google assistant system is built to table in restaurants. If the workers take the order manually from the customers it takes a lot of time and other customer have to wait for the ordering the food. The Touch screen based Menu card using Google assistant helps to overcome this situation and provide an efficient way to order the food. The Google assistant is a wireless technology developed as an open global standard to address the unique needs of low cost, low power, wireless network. Customer give order using Google assistant by giving voice commands. During ordering process customer can play game, listen songs, watch movie or can do anything using Google assistant by giving voice commands. In this system we use HTML in receiver side means in kitchen computer to display the menu which ordered by the customer. It helps for fast ordering process.

1.1 Block Diagram

Fig.1.1 Block diagram

1.2 Working

The whole system is divided into two sections which are Transmitter Section and Receiver Section as shown in block diagram. The user place order in transmitter side and receiver section is in kitchen. System uses Google assistant, Raspberry pi 3 and 3.5 inch touch screen for the customer to make orders. At the transmitter section, the customer will make an order by selection the menu item category by Google assistant using voice commands. The menu will display on the touch screen LCD. This menu comes together with the different item along with prices and quantity require, when the user finishes his selection and press send button the data will be sent to the receiver section by Raspberry pi 3. In the Kitchen received the data in computer. After ordering the food, the customer is acknowledged of the time their order will be ready. It will show the list of food items that have been chosen by the customer at the screen in the kitchen section. The processed data been to be sent to the kitchen Monitor display for ordering purpose this system will be done after the customer completed their orders.

2. HARDWARE USED

1.   Raspberry pi 3 B+
2.   SD card
3.   Speaker
4.   USB cable
5.   Touch screen display
6.   Microphone
7.   Adapter

8. Ethernet cable
9. MIC

2.1 Raspberry pi 3 B+

The Raspberry Pi is a small size computer that plugs into your TV and keyboard. It is use for many for projects. It can do many operations like a normal PC does, like spreadsheets, word-processing, and game. Also, plays high-definition videos. We also search many things on raspberry pi by connecting internet or Wi-Fi. The Raspberry Pi is system on a chip, which include four USB ports, one audio output jack, HDMI input, camera input. System has Secure Digital socket for boot media and persistent storage. The chip consists of the hardware, and the software controlling the microcontroller, microprocessor or DSP cores, peripherals, and interfaces. Design of Raspberry pi 3 B+ as shown in Fig.2.1.
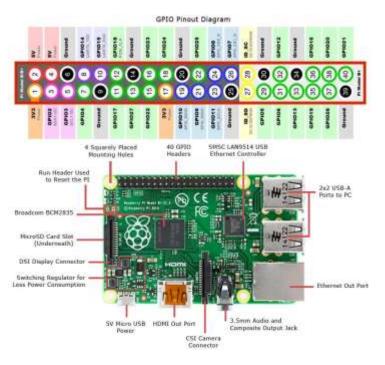

Fig.2.1 Raspberry pi 3

IT has dual-band 802.11ac Wi-Fi, so it's able to support both 2.4 and 5GHzWi-Fi. It has Bluetooth 4.2 and 1.4GHz 64-bit quad-core ARM Cortex-A53 CPU. It has a faster gigabit Ethernet connection.

2.2 Google Assistant

The Google assistant is a wireless technology developed as an open global standard to address the unique needs of low cost, low power, wireless network. Now days Google assistant is generally used for home care, digital home control, and industrial and security control. The Google assistant is normally available in computers, mobiles, tablets, etc. In this project we use Google assistant for ordering process. Customer can order food giving voice commands. The Google Assistant made by using Raspberry pi 3, speaker and mica.

2.3 Touch Screen LCD

A touch screen is a display and input device which shows the content on the screen and user can also make changes. A user can give input or control the information processing system through simple or multi-touch gestures by touching the screen with a special stylus or one or more fingers. The user can use the touch screen to react to what is displayed and, if the software allows, controlling how it is displayed. In this project we built touch screen display on a Raspberry pi 3. Menu is displayed on a touch screen display along with quantity and price.

Fig.2.3 Touch Screen LCD

Specifications

LCD Type   : TFT
LCD Interface   : SPI
Touch Screen Type: Resistive
Touch Screen controller: XPT2046
Colors   :65536
Backlight   :LED
Resolution   : 480*320 (Pixel)

Features

480x320 resolution
Universal 3.5" Display for the Raspberry Pi
Compatible with Raspberry Pi A, B, A+, B+, and Pi 2/3 versions
Adapt for Raspbian system

3. SOFTWARE USED

1. Google assistant SDK

2. Python language

3. Raspbian OS

4. CONCLUSION

The system is of low cost. It is convenient and easy to use for order placement in restaurants. In this system, we used Google assistant for taking orders from the Customers. Thus, we can easily order food, collect feedback using this device. We can collect and pay bills using this system. This system also ensures good quality of service and customer satisfaction.

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