e-Restaurant Management System Using IoT

Bachelor of Technology - Electronics and Communication Engineering
Geethanjali College of Engineering and Technology

PATI VANDANA, Pursing B.tech, GCET
M.RAMBABU, Pursing B.tech, GCET
M.VENKATESH, Pursing B.tech, GCET

ABSTRACT

In restaurant waiters keep the record of customers' orders and then order goes to kitchen for preparation. Total amount of bill is calculated by cashier. When number of customer increases then workload on waiters increase due to this order misplace can take place. Hence overall service quality may be degrade. Therefore, by using enhance technology we can replace the older way of taking order by pen and paper. Advance technology like touch screen menu display and IoT has been adopted in our system. The tendency of this system is to raise up dining table service. This system has on table touchable menu list and using fingers customer gives order to restaurant server. That's why this project aims to support processes needed for the restaurant staff and allow them to focus on the important part – friendly customer service. Adapting this aim for the customers this project increases the overall experience at the next trip to a restaurant. The project is focused on the order process; the kitchen organization and business processes like invoice management. It provides a digital management system for each of these processes.

INTRODUCTION

E-restaurant management system is rapidly growing technology. The main aim of our system is to provide speed of operation, large storage capacity, large operating range and less time consuming. In recent days IoT is popular technology which hit the market to exchange the information through internet. In recent days web enable computer system is imply to control traffic flow of order, to create proper billing, reduce waiting time, reduce human mistake. Usually waiters is require to take order, making reservation, to serve meal. After finishing customers has to paid the bill at the counter. In spite of this operation is very easy it increase the workload of waiters which is noticeable which degrade service quality. Nowadays by using advance technology we can improve service quality. Pertaining to a current time wireless devices such as touch screen menu display has been taken by choicely to restore old way of taking order using pen and pape

II- LITERATURE REVIEW

It uses a simple keyboard to make orders and Bluetooth for transmission. Prof. Sagar Soitkar ET-a l presented the touch screen based digital menu ordering system using AVR. This method og paper is low cost, efficient and easy to access the system for digital menu ordering system for restaurants. Asan, N. Badariah et-al developed IoT – based smart ordering system. The smart restaurant ordering system is proposed orders using hand tools with online used to make an order in a restaurant.. They further extended the service with Raspberry Pi based E-menu ordering system. The development of the E-menu ordering is based on the software-hardware platform on Raspberry Pi OS Platform

The common system have beleaguer with various problems. The most common blooper is waiters making mistake with customer's orders. At times, a waiter can forget to add a precise item, make a changes,

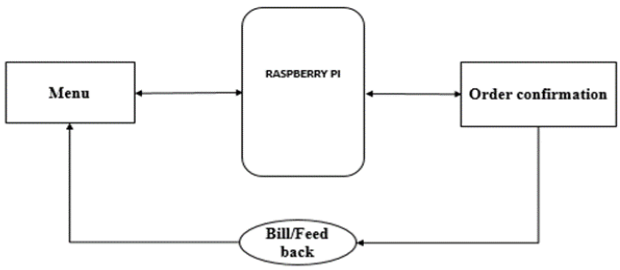
or disremember to give the order to kitchen. Customer have to wait for waiter to take their order. They must rely on the waiters to remember their order and specific details. They may also give wrong bill. Restless and intolerant of delays customer also call frequently to find out the status of their order. Waiters need to frequently check that order is done or is in process. Chef needs to make sure that waiters know that food is ready. In case waiter doesn't know that order is ready this cause the food got cold over time. Busboy always check for table to which need cleaning. Intelligent restaurant is created to reduce the work load of waiters and to improve the efficiency. This system works on android tablet. The android application access database and download real time menu list. Customer can browse and choice the items and order it.

Waiters came to confirm order and count bill. The order given by customer displayed in the kitchen section. When food item ready it informs to the waiters as well as cashier by mark them as done. Cooking Section: Intelligent e-restaurant for customer–centric service provides an online menu ordering and reservation process. This system uses RFID –based membership card, this provides easy identification of customers according to their consumption record. Through PDA waiters take order and though WLAN order is provide to kitchen. According to order chefs prepare menu and waiter convey it to customer. RFID-based PDA is used to diagnose the membership ID to calculate the bill. Raspberry Pi Based LCD Power Supply Self–service ordering information system uses IOT based wireless technology. It uses full function device (FFD) and reduced function device (RFD). FFD and RFD communicate with each other. In order to improve quality of service and business of the hospitality industry by consolidate technology. This system fetches all information from a centralized database. The tablet on the customer table contain android application with all restaurant details. Customer tablet, kitchen display and cashier counter connects to each other through wi-fi .

III- PROPOSED SYSTEM

Usually waiter is require to take order, making reservation, to record customer order and then transmit to kitchen for preparation. After finishing customers has to paid the bill at the counter. In spite of this operation is very easy it increase the workload of waiters which is noticeable which degrade service quality. Nowadays by using advance technology we can improve service quality.

Block Diagram:



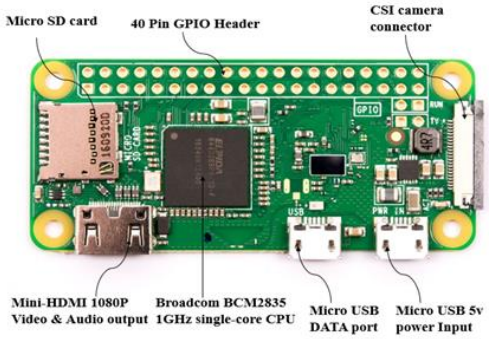
Internet of things

Internet of things is an rapidly burgeoning topic of conversation. There are many complicacy around the IOT but we want to stick to basics. Due to booming environment of internet cost of

connecting devices rapidly shrink, technology cost are collapse up to certain level, and smart phone infiltration is sky-rocking. All of these environment provide perfect blizzard for IoT. We can connect no. of devices to internet which includes everything from cell phones, coffee makers, headphones, lamps, wearable devices with an on and off switch to internet. IoT is an gigantic network of connected "things".

For example you are on your way to a meeting, your car could have access to your calendar and already know the best route to take, if the traffic is heavy your car send a text to other party notifying that you will be late.

has to paid the bill at the counter.



Features

The heart of the Raspberry Pi is a Broadcom System on Chip (SOC) which includes ARM compatible CPU and on-chip graphic processing unit and Vediocore IV.

The Pi Zero W boasts some impressive specifications:

- Broadcom BCM2835 application processor
- 1GHz, single-core CPU
- 512MB RAM
- Mini-HDMI port
- Micro-USB On-The-Go port
- Micro-USB power
- compatible 40-pin header
- Composite video and reset headers
- CSI camera connector
- 802.11n wireless LAN
- Bluetooth 4.1 LE

Processor

The processor at the heart of the Raspberry Pi is a Broadcom BCM28XX. This is the Broadcom System on Chip (SOC) chip use in the Raspberry Pi.

The processor from first to third generations include:

- Raspberry Pi 1: Broadcom BCM2835 SOC with 700MHz CPU speed, L2 cache of 128kb with ARM compatibility AR1176JZF-S (ARMv6) 32-bit RISC ARM.

- Raspberry Pi 2: Broadcom BCM 2836 SOC with 900MHz CPU speed, L2 cache of 256kb with 32-bit quad-core ARM cortex-A7 (ARMv7).
- Raspberry Pi 3: Broadcom BCM2837 SOC with 1.2GHz 64-bit quadcore –A53 with 512 kb shared L2 cache (64-bit instruction set ARMv8).

Raspberry Pi Zero W: Broadcom BCM2835 SOC with 1 GHz ARM11 Broadcom CPU with 512MB of RAM.

HARDWARE REQUIRED:

- Raspberry Pi Zero W.
- Andriod Mobile Phone.
- Laptop(Monitor).
- USB To Micro USB Cable.

SOFTWARE REQUIRED :

- Raspbian Jessie.
- Phyton.
- HTML.

ADVATAGES

- This system makes the customer happy as it helps in ordering the as soon as he arrives at table without waiting for sever to take the order.
- This is very helpful for owner as it reduces the man power and menu can easily changed if there is any raise in price.
- A customer going into restaurant does not has to wait for the waiters to take the order. As soon as heoccupies a seat, he would order whatever he needs.
- As soon as the order is ready, it would be notified tothe customer. So, there would not be any issue oflate delivery in spite of the food being ready.

IV- RESULT

Today we are living in 21st century where IoT (Internet of Things) is playing important role in human life. E-Restaurent Management Using IoT had made a trend in new technology Internet of Thing (IoT). Using a single board computer Raspberry Pi and controls without human involvement.

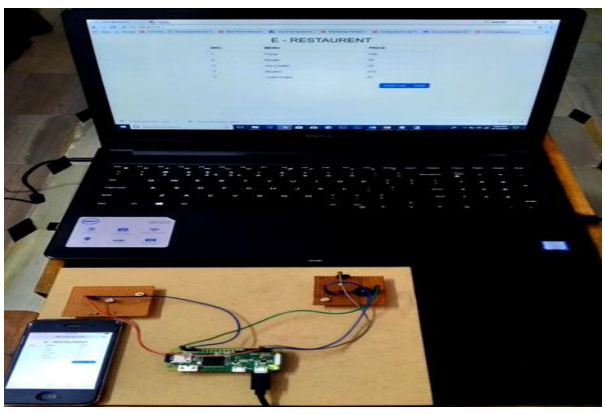


Fig. Project output

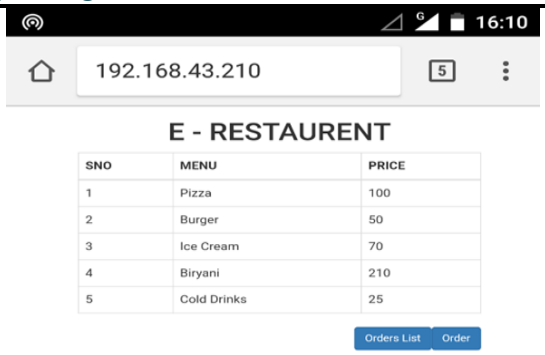


Fig.Menu List

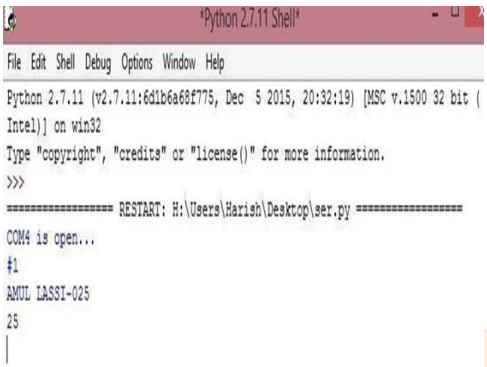


Fig.shows that python shell gives an output window. The ordered item and their cost also displayed.

V-SCOPE

Continuous updates of the food can be given to customer. Wireless touch screen device can be charged by solar. Raspberry Pi can be used to increase the range.Developing an artificial intelligence –based e-restaurant system for automatic meal deployment and food material supply demand analysis based on customer expenditure records. A meal ordering system based on mobile communication technology is also underway. Room service on customer in hotels. On table control of appliances like light, fans etc.

VI- CONCLUSION

The e-restaurant management system overcome some of the circumspection confront by the restaurant staff. It provides a legitimate workflow for restaurant staff to manage restaurant operations digitally, from ordering to billing precise. The system could conceivably improve the overall restaurant efficiency, reducing labor cost, providing quality of service and augment customer dining experience.

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