

TITLE: ANDROID BASED RESTAURANT ORDERING SYSTEM

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ABSTRACT

In traditional restaurant environment there is a lot of man power required to handle the work, like to handle the customer reservation taking orders, placing ordered so to avoid all the thing theatrical is develop. It is a mixture of embedded and Wi-Fi wireless communication technology. The software and hardware structure of the system is designee in detail. It is very easy and reliable system. We can achieve good result from the system .We have a nice application with these system that is Energy saving system.

Keyword - *Embedded system, Wi-Fi, Android phone.*

1. Introduction

Restaurant are one of the favorite premises with no regard to the actual reason for visiting restaurant but in traditional restaurant services mode a lot of man power is required in order no handle the management of a restaurant like to handle customers inquiry, ordering food, placing order reminding dishes and many times chefs are not clear because of the writing and the attendant distress. So we can put our technology into food services management system, the system help to create more user friendliness By using this system the enterprise will not only save labor costs, more the management will be towards information, intelligence and it will bring long-term economic benefits, so system is easy and most reliable. This system increases quality and rapidity of service. This system increases attraction of place for large range of customers. Smart phone application provides the energy saving system from this function we can on and off light and fan as per user requirement In the project we use PIC18 μ c as the heart of our project and LCD that is used to display our order which is given by mobile application When we place the order at that time we can check the bill and if we want to cancel the order then we easily cancel it and placed the new order. If the order is not placed on our table with in specific time then the buzzer is on to indicates that order is not placed. This project deals with android ordering system for restaurant with energy saving system. This topic includes capacity of the project, project characteristics, Operating environments, guess and dependencies, design and realization constraints. We developed this wireless android ordering system to achieve a simulation wireless ordering which is based on this idea.

1.1 Literature survey :-

In this application of hotel management systems by web services technology is presented. We are implementing this system by using android application for Tablet ,PC's. The front end will be developed using JAVA Android and the backend will work on SQL database. [1] The ease and powerful functionality offered by mobile devices such as PDAs, encouraged many industries to examine their benefits [6]. Touchscreen Based Ordering System For Restaurant consists of microcontroller. It is interfaced with the input and output modules. The input module is the touch screen sensor. It is located on GLCD to have graphical image display. It takes the input from the user and provides the same to the microcontroller.[4] Wireless Food Ordering System Based on Web Services. Is a combination of wireless communication and web services technologies to realize a wireless food ordering system.[3] Through the wireless LAN on ISM band, wireless communication sandwiched between embedded handsets and server can be achieved. So the customer's ordering can be made by themselves.[2] There are many types of service robots, such as cleaning and maintenance robots, observation robots, entertainment robots, rehabilitation robots and so on. It is hard to find the autonomous service robots to be used in a restaurant. A cost is highly specialized autonomous robot. The task of the robot is the clearing of tables and setting in a controlled environment.[5] Restaurant self-service ordering system based on Zig Bee technology also has those advantages. It is one of the ideal solutions for information transformation of traditional hotels, which can save labor costs, improve efficiency and service quality.

2. BLOCK DIAGRAM

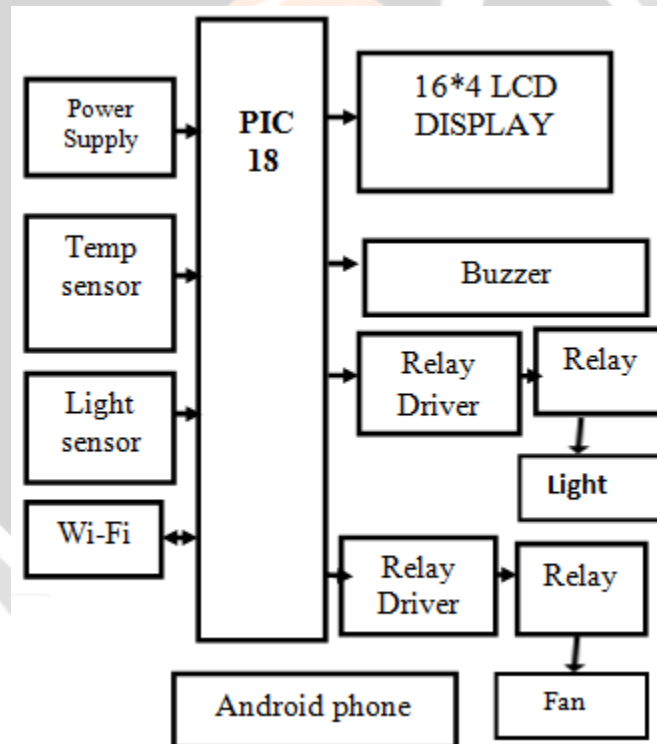


Fig-1 Block Diagram Of System

2.1 PIC 18:-

The advantages of all PIC18 microcontrollers high computational performance at a cheap cost – with the addition of high-endurance, Enhanced Flash program memory high-performance, power-responsive applications.

Features:-

- Flash program memory (16 Kbytes for PIC18FX480 devices; 32 Kbytes for PIC18FX580 devices).
- A/D channels 8 for PIC18F2X80 devices and 11 for PIC18F4X80 devices.

- CCP and Enhanced CCP implementation (PIC18F2X80 devices have 1 standard CCP module; PIC18F4X80 devices have one standard CCP module and one ECCP module).
- Parallel Slave Port here only on PIC18F4X80 devices.
- PIC18F4X80 devices provide two comparators.

2.2 Wi-Fi:-

The content of this design was based on the technology of embedded and wireless communication. Through the establishment of wireless local area network in ISM band to achieve wireless data transmission, this method was called Wi-Fi. Wi-Fi works without physical wired connection between transmitter and receiver by using radio frequency technology, a frequency within the electromagnetic range associated with radio wave broadcast. When an RF current is supplied to an antenna, electromagnetic field is formed then is able to broadcast through spaces. Wi-Fi is supported by many devices and many applications such as mobile phones major operating system and other type of consumer electronics. Radio frequency band used 2.5 GHz for 802.11b, 802.11g or 802.11n and 5GHz for 802.11a.

Features:

- Integrated 2.4-GHz power amplifiers for a WLAN solution.
- Baseband processor: IEEE Std 802.11a, 802.11b/g, and IEEE Std 802.11n data rates for SISO is 20- or 40- MHz and for MIMO is 20-MHz.
- completely calibrated system (production calibration not required).
- Medium access controller (MAC).

2.3 16*4 LCD:-

Here we are using 16*4 LCD for displaying a status of table and ordered food, total cost of ordered food as well as we are display the light intensity and room temp. for this LCD the min power supply required is -0.3V and max is 7.0V. The input voltage required is -0.3V min and max is VDD (VDD=5.0V).

Features:-

- Built - in controller (KS 0066 or Equivalent).
- + 5V power supply (Also available for + 3V).
- 1/16 duty cycle B/L to be driven by pin 1, pin 2, or pin 15, pin 16 or A and K.
- N.V. optional for +3V power supply.
- 5 x 8 dots includes cursor

2.4 Temperature sensor-LM35D:-

The LM35 series are precision integrated-circuit temperature sensors, that's output voltage is linearly proportional to, the Celsius (Centigrade) temperature. It has low voltage output and low self-heating.

Features:-

- Calibrated directly in $^{\circ}$ Celsius (Centigrade).
- Linear a 10.0 mV/ $^{\circ}$ C scale factor.
- Appropriate for distant applications.
- Operates from 4 to 30 volts.
- Less than 60 mA current drain

2.5 Relay: -

92/8 gold silver alloy on silver palladium contact type is suitable for low level switching application. Small dimension and light mass can provide high density P.C. Board mounting. Employment of suitable plastic materials to be applied to high temperature and various chemical solution. This device is generally used for Amplifier and Switches.

2.6 LDR-light sensor:-

Two cadmium sulphide (cds) photoconductive cells With spectral response similar to human Eye. The cell resistance falls with rising light intensity. Application take in smoke exposure, usual lighting Control, batch counting and burglar alarm systems.

2.7 Android Phone:-

Features:

- Based on android 4.4
- Support 2G 3G4G Network
- Support external memory
- Support wireless LAN (802.11b/g/n),GPS, AGPS,bluetooth4.0

3.Algorithm :-

3.1 For Android application:

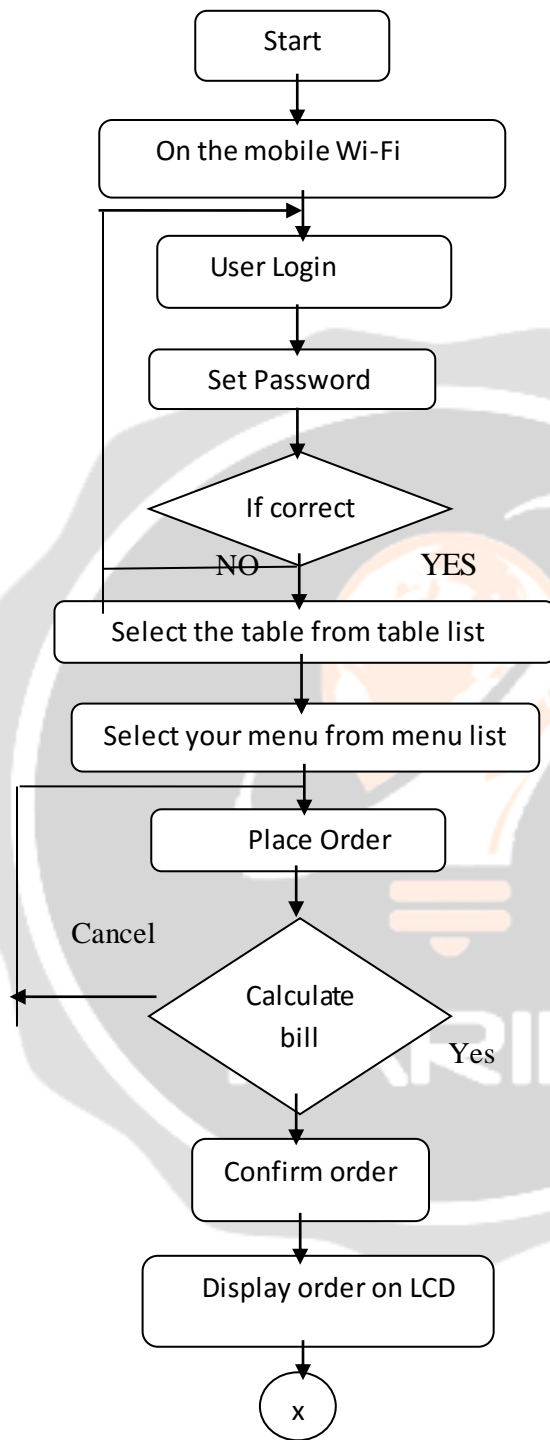
- 1) Start
- 2) On the mobile Wi-Fi
- 3) Going to app
- 4) Enter user name and password
- 5) Connect and check the table status
- 6) Select the table from table list
- 7) Select your menu from menu list
- 8) Start the timer
- 9) Check the order is displayed or not
- 10) Switch on or off light and fan from android mobile phone
- 11) If the order is not in time the buzzer will on
- 12) Check your bill on your mobile app
- 13) Off the mobile Wi-Fi
- 14) Stop

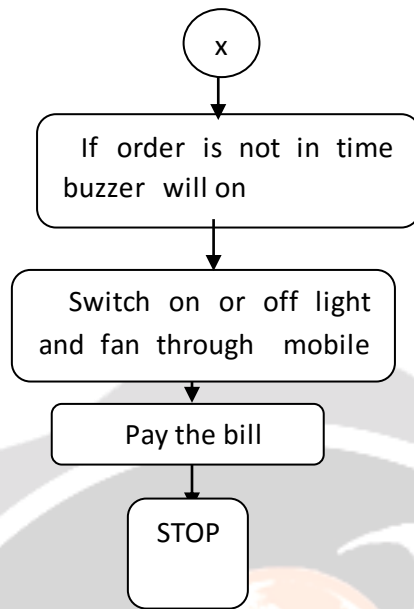
3.2For Harder ware Kit:

- 1) Start
- 2) Port initialization
- 3) LCD On
- 4) Order is place through mobile app
- 5) Order is displayed on LCD
- 6) Message is receive on mobile app that our order is receive by chef
- 7) LCD Off
- 8) Stop

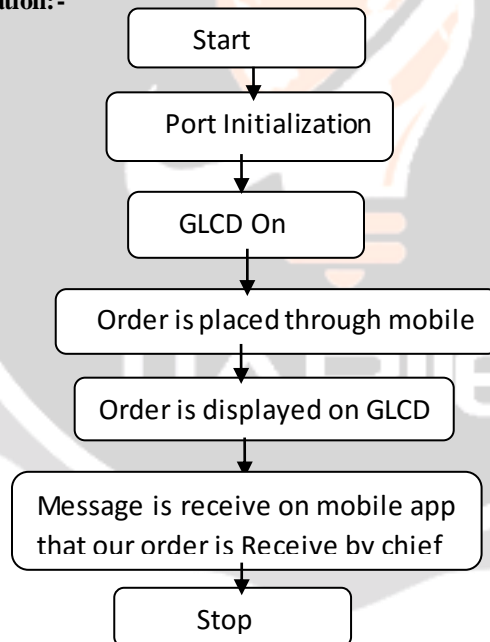
4 Flowchart:-

4.1 For Android application:





4.2 For Hardware application:-



5 Result:-

On user mobile Wi-Fi. Going to app and you will get the window, Then enter the user name and password is shown in fig 2.

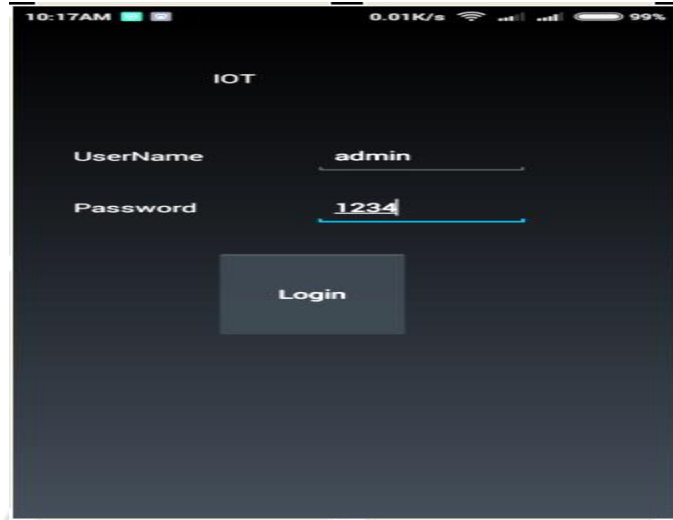


Fig-2 Login window

After opening the next window we can check the table status.and booked the table. This as shown in Fig.3

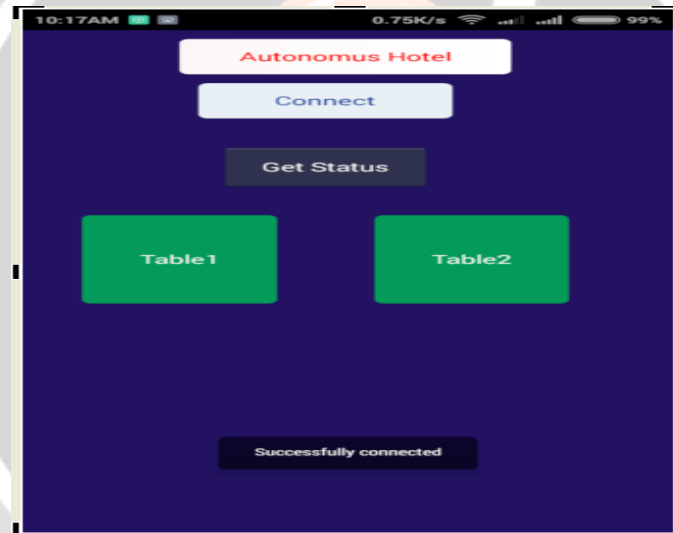


Fig-3 Status cheking Window

After checking the table status we see that the table 1 is already booked.so we aquire the table 2. Is as shown in fig 4.

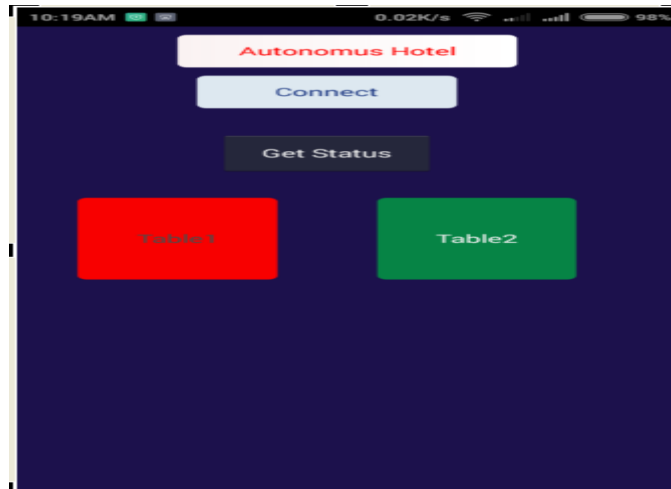


Fig-4 shows the table status

When we booked table 2 the message will be displayed on LCD. As shown in fig-5.

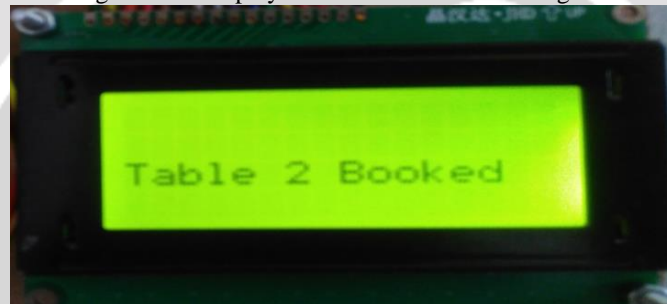


Fig-5 Shows Table 2 Booked

Now you getting the menu list so we can choice the menu. and send your order through mobile app. the order will be displayed on LCD. the chef will confirm the order, the confirmation is displayed on mobile.



Fig- 6 Shows Menu List



Fig-7 Shows Order Food on LCD

The devices should be on and off by using android app As shown in fig-8,the buzzer is on when the order is not come with in a time



Fig-8 Shows Light Fan On-Off

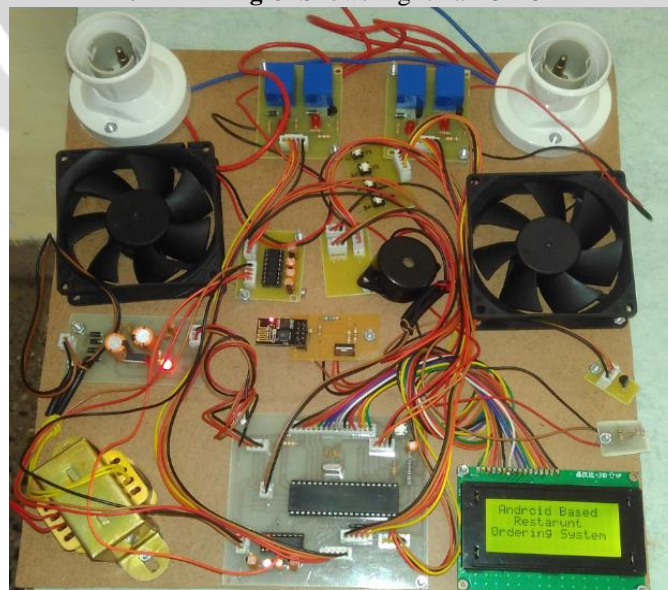


Fig.-9 shows Hardware Kit

6. CONCLUSIONS

We are going to implement our system in restaurants to ease the management of the Restaurant and also give a technological touch which would help atomize the working of Restaurant. The wireless ordering system combined with embedded technology and wireless networking technology. It achieves the ordering function very good. And because of it's easy to install, cost-effective, flexible, etc, it is gradual promoted in more and more large restaurants, cafes and so on. For all of this the wireless ordering system is welcomed by customers and food industry manages.

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