AUTMATIC MENU ORDER SYSTEM FOR HOTELS
"Orlando" Hot & Fresh

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Abstract— **A new design scheme of the Keypad based Menu ordering system applied to middle and small hotel is proposed. The development of the -Menu ordering is based on the software-hardware platform on PIC (Raspberry pi Board), using ZigBee short-range radio communication technologies. It has advantages of high performance-cost ratio, low power, high reliability and friendly user interface. This paper introduces two sections one is hand held device section and other is main section. Both sections consist of Zigbee transceivers. From the first section menu should taken and saved in memory in that section. This information is forwarded to the main section via Zigbee wireless communication. Main section will receive the information from the first section and displays that data on screen. According to that order which is in display, service is provided. Here 3*4 matrix keypad, LCD is used to select the menu and transmit the data, a PC is used to receive and display data and record for billing.**

Keywords: Zigbee, Raspberry PI

I. INTRODUCTION

Zigbee based hotel menu card ordering system involves developing a prototype for customer self-ordering system in restaurants. Ordering is a process of the customers specifying what they want, so that the order can be recorded by using a note form, or computer system and many others, followed by passing it to the relevant department for processing and finally the delivery of services or products to the customers based on the order. Self-ordering system is very successful when applied in different restaurants in many countries and it is proven to benefit most of the investors Page Layout

II. PROBLEM STATEMENT

The traditional food ordering system is entirely a manual process which involves waiters, pen and paper. The customer has to wait for waiters to take the order. The waiter notes down the orders from customers, take these orders to kitchen department , update them in records and again make the bill. Though this system is simple; it may involve errors while noting down the orders as well as in making calculations. Even it is sometimes difficult to interpret the handwriting of the waiter. To overcome these limitations in manual system, some systems are being developed to automate food ordering process.

III. NEED OF PROJECT-

Nowadays people are looking forward for a system that will satisfy their needs more comprehensibly. Most of the restaurants industries are looking for any application that enhances the dining experience as well as that increase the profit. In traditional ordering system the waiter notes down the order from the customer then places the order to the kitchen and then the billing is done which consumes time and may cause errors. This project aims to automate the food ordering and billing process in restaurant as well as to improve the dining experience of customers.

IV. OBJECTIVES
☐ To place the selective order by using matrix keyboard and reduce the order time with effective communication.
☐ To replace & cancel the order with specific period of time.

V. LITERATURE SURVEY

The journey for getting up to the peak of joy and facilities that we are presently experiencing started with initial footstep of a wireless technology. The introductions of basic proposed systems and consequent developments have been mentioned here. In the existing system, order is taken from the customer manually by a written note or by an i-pad which needs a person to go near the table, show the menu card and ask for the order. After placing the order, the person will pass the information to the concerned section and the order is delivered accordingly to the customer. The

analysis shows that the scarcity of wireless ordering system for the medium-sized hotels directly leads to promote slowly. Through comparing with different grades of E-Menu ordering systems, the key difference lies in selection of ordering terminal and wireless communication. In this paper, the development of wireless handheld terminal is based on the Software-

hardware platform of PIC microcontroller and using ZigBee, short-range wireless communication technologies. "ZigBee Based E-Menu Ordering System".

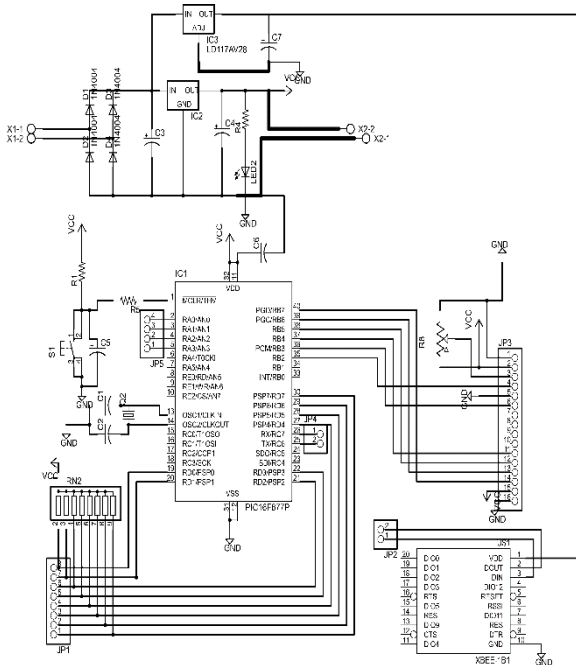## VI. DESIGN LEYOUTS AND COMPONENETS

Fig. 1. Circuit Diagram

A. *PIC 16F877A Microcontroller*

B. *Matrix Keypad*

C. RS232 Serial Converter

There are 40 pins of this microcontroller IC. It consists of two 8 bit and one 16 bit timer. Capture and compare modules, serial ports, parallel ports and five input/output ports are also present in it. Above picture shows the **pinout diagram** of PIC16F877A.

VII. WORKING & OPERATION

Keypad verifies resistive values and sends to PIC controller. The PIC controller transmits appropriate ordered menu to kitchen system via Zigbee modem the transmitted menu data will be received by kitchen Zigbee module and fed to Pc through RS-232 port. A hyper terminal system displays the order menu.

The ZigBee based menu ordering system starts working from displaying the menu items available in the restaurant on graphical LCD connected to the PIC microcontroller at every table in the restaurant. The users can choose any of the item by simply tapping the corresponding item icon on the keypad. The keypad will send the corresponding instructions about the selected item to the PIC microcontroller. The PIC microcontroller will processes the item details and adds the table number to the data and send it to the order/billing section through ZigBee device. The billing/order section will get the items along with the table number on its display with a buzzer the attenders at that particular place. After completion eating or delivery of the items of one table. Then the bill will be calculated by the PIC in billing unit display in LCD

and sent to the customer section to the corresponding table. The bill amount will be displayed on the

graphical LCD then the customer can know the bill and they can pay it. The entire document should be in Times New Roman or Times font. Type 3 fonts must not be used. Other font types may be used if needed for special purposes.

VIII. SOFTWARE PROCESS

The Proteus Design Suite is a proprietary software tool suite used primarily for electronic design automation. The software is used mainly by electronic design engineers and technicians to create schematics and electronic prints for manufacturing printed circuit boards.

Steps :
☐ Open Proteus ISIS Schematic Capture.
☐ Select the Component Mode from the left Toolbar.
☐ Click On P (Pick From Libraries)
☐ Add all the required components.
☐ Place the components on the workspace.
☐ Wire up the circuit.
☐ Click on Play Button on the bottom left to start simulation.
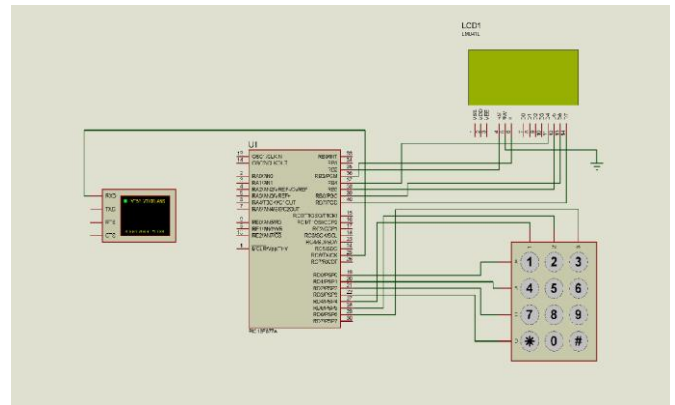
IX. CONCLUSION & RESULT

The implemented system of restaurant menu ordering system is a modern and smart solution for menu ordering methods in any kind of restaurant. The system will reduce the manual efforts and also gives more accuracy in calculating the bill for each individual table. It is also a low cost alternative to be used by middle and low level restaurants also.

X. REFERENCES

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