

# Zigbee Based Touch Screen Menu Ordering System

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## Abstract:

The paper is proposed with the Zigbee innovation as the correspondence medium which carries out quicker requesting framework. The innovation ready to tackle need number of specialist, decreases the blunder on requesting food sources by the clients. The e-menu food requesting framework depends on programming equipment foundation of Arduino (ATMega328p) and utilizing Zigbee short reach radio correspondence innovations. We have partitioned the framework in two segments one is handheld area (client segment) and other is principle segment (proprietor segment), both segment comprises of Zigbee handsets. The framework additionally having a touch screen and graphical LCD interface for giving a more intelligent UI menu ordering. The paper depicts about the calculation utilized in execution of cutting edge menu requesting framework by with a remote correspondence innovation Zigbee and the means associated with its convention stack. The proposed framework is planned to use by a wide range of eateries for all classes of individuals. At handheld area GLCD with contact screen is given to put in the request and request sends further to principle segment by means of Zigbee handset. At the same time ringer will show that request has shown up and LCD show which is at primary area is utilized to show food menu request and cost.

*Keywords* —Arduinouno, Zigbee transmitter, Zigbee receiver, LCD display, Touch sensor, 12v DC power supply, Arduino IDE software

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## I. INTRODUCTION

The present strategy for menu requesting framework incorporates additional human endeavors for getting a request from the client, by giving the client a menu card on their table and furthermore charging is an exceptional consideration need to pay for each table and their orders. Thus, the menu requesting through an electronic framework interface will get an extreme reaction from the clients because of the efficient approach and more brilliant approach to convey. The remote correspondence interface will give a quicker and exact information transmission in a

minimal expense. The fundamental intend to carry out this e-menu requesting framework is its easy to understand interface just as to diminish human endeavors. The execution of electronic menu requesting frameworks might have a few contrasts in interface plan and procedure. The zig-honey bee correspondence is utilized as remote interface and the graphical LCD show with contact screen is utilized as client interface. In the new past there has been development in requesting and serving framework yet the outcomes are not particularly encouraging. With the headway in correspondence innovation the issues of being late engaged can be tackled. To viably run an eatery, efficient and cost

enhancements are fundamental. Decrease on schedule by a couple of moments for each table can accelerate request handling, increment proficiency and lift benefits.

Eatery is a public spot which opens to all to offer food and refreshment to people groups. Eatery business is quite possibly the most beneficial business. Hence, the significance of food serving is of extraordinary importance. Throughout the long term, food and the overall occupation of serving have developed such a lot of that requirement for assistance and mechanization has been expanded. With the progression of mechanization cafés are expected to refresh with programmed framework for saving time in running an eatery. In late eatery frameworks, the servers keep the record of clients' orders and afterward request goes to kitchen for planning. The proposed framework is the eatery menu requesting framework dependent on Zigbee. Programmed menu requesting framework through an electronic framework interface can be an ideal answer for work on the fields of eatery. In customary eateries the orders are taken from the clients by the servers. Paper menu needs additional human endeavors to get the orders from the clients. The menu cards are set on their tables.

In this manner, conventional café framework needs human endeavors and it burns-through the time. The proposed framework can save time and diminish labor. The point of this programmed menu requesting framework is to diminish request blunders, holding up time and human endeavors. LCD and switches are utilized for putting request as client interface. As remote correspondence interface zigbee is utilized for a quicker and precise information transmission. The menu things and the switches are shown on LCD. The client can see the menu along with costs and make a request through LCD by squeezing the switches. The orders are shipped off the PC show in kitchen with table numbers which will have the association with zigbee module to get the approaching requests. This proposed framework plans to not just diminish the human collaboration and save time yet additionally to further develop eatery business. In pretty much

every region, innovation has changed conventional ways. As of now, all most all the eatery use pen and paper to take request from client. This burn through part of time and furthermore time requires sending that request to the kitchen is additionally more. To take care of these issues, we planned a programmed menu requesting framework. It will work on the nature of administrations.

In this undertaking, we use ZigBee genius to foster the programmed menu requesting framework. This framework will fatly send food request to the kitchen and serve the food as indicated by the request. It will provide all out data of request given by client and data of food material to the chief. It will likewise give the all out data of crude material accessible in the kitchen and furthermore update that data after each request. This will decrease the undertaking of supervisor to go into the kitchen without fail and stay away from in adequacy. Mechanization frameworks are expansion in everyday life. It is the fundamental part in the field of hardware. It manages move of information starting with one spot then onto the next place. Correspondence plays significant part in the effective information move and to get the affirmation from collector. There are two method of transmission; wired and remote transmission. In wired transmission, information is moved through an actual medium or a connection while no actual connection is utilized in remote transmission. The two mediums have its own qualities and benefits. Ordinarily when we visit any cafés because of packed when request is being set it requires some investment to measure and builds the labor to beat such inconveniences a framework is being executed called as programmed inn request preparing framework where clients table comprises of a keypad and LCD show on squeezing the important code of the food thing client can send that to the kitchen where server can take the request and send the affirmation to the client. Then, at that point server serve the menu to the client on schedule.

## II LITRATURE SURVEY

Harshada S Wabale introduced Automatic Menu Ordering System utilizing Zigbee and Arm Processor. All the data of suppers and record right off the bat recorded in this framework and director can get all the data from this framework. The client is track by 15693 RFID TAG as ID card. They get table number and dinners data from this tag. The counter uses this framework to take requests of client, and afterward at kitchen side this dinner data is gotten. At the point when the clients go into the eatery they get E-tag from the counter. They can pick any seat from this E-tag and afterward put that E-tag on detecting module on the table. This module will give all the data to framework by Zigbee. From this label framework recognize the situation of the client. Then, at that point server will serve the food as per the needs. B. Shabari, B. Ashok Nayak, August 2015, proposed Zigbee based E-menu requesting framework. The 802.15 Zigbeetechnology is utilized as remote correspondence standard.

The framework will comprise of two segments, one is a hand held gadget put on each table in the café and one more segment ought to be put at charging segment and supply area. The paper portrays about the calculation utilized in execution of cutting edge menu requesting framework by with a remote correspondence innovation zigbee and the means engaged with its convention stack. The framework additionally has a touch screen and graphical LCD interface for giving a more brilliant UI menu requesting. Prof.Dr. Usman Ali Shah, Faraz Ali, Sana Sohail, Haris Khan, May 2016, gave Intelligent Robotic Waiter Menu requesting System. The menu card is given utilizing android application. The request will be shipped off the counter comprising of PC through Wi-Fi connect and the subtleties will be saved in the data set of the counter. It expects Graphical User Interface (GUI) progressed contact screen module is used as menu requesting framework. Client can orchestrate through this touch screen device put on each table in eatery. HTML is used for planning pages of café.

Kunal P. Gundle, Anuja A. Harshe, Kahol B. kinage, Niraj L. Ghanawat, December 2016, proposed Digital Smart System for Restaurants Using Wireless Technology. A touch based advanced requesting framework comprises of an Android, Bluetooth and GSM. Android upholds mechanization of routine assignments in remote climate. This work intends to give high end food experience to the client. This paper portrays the improvement of advanced shrewd framework utilizing remote innovation for correspondence with incorporated information base for record and an android application for putting request without any sitting tight for server.

In this framework they utilized Zigbee CC2530 with My SQL worker information base and Visual Studio C#. All the data of suppers and record right off the bat recorded in this framework and director can get all the data from this framework. The client is track by 15693 RFID TAG as ID card. They get table number and dinners data from this tag. The counter uses this framework to take requests of client, and afterward at kitchen side this dinner data is gotten. At the point when the clients go into the eatery they get E-tag from the counter. They can pick any seat from this E-tag and afterward put that E-tag on detecting module on the table. This module will give all the data to framework by Zigbee. From this label framework distinguish the situation of the Customer. Then, at that point server will serve the food as per the needs.

The proposed framework is an essentially a blend of remote correspondence framework, a data set, and an android application to put in the request. The android application is utilized by the touch screen gadget which fitted at the table. This android application contains all the data identified with menu like image of food thing. The arranged subtleties are shipped off the kitchen and the clerk by remote framework. Android application at the supervisor side is utilized to refresh the menu a focal Database, see and oversee table savvy client's orders, and get criticisms from the customer. The proposed paper features a portion of the restrictions of PDA based food requesting framework and given

the arrangement by multi touchable E-café framework. Client needs to provide the request utilizing multitouchable feasting table. This request is ship off all pieces of the eatery. In kitchen gourmet specialists can make food as per request. Clerk can make a bill. Chief likewise utilized this to assess business status like making changes to the food thing. Adobe Flash Action Script 3, PHP prearranging and My SQL data set was utilized to assemble this system. NamrataKakde, VidulaKatambale, ShubhamNamaware: "Remote Hotel Ordering System", International Engineering Research Journal (IERJ), Volume 2, Issue 2019. Now it is the time to articulate the research work with ideas gathered in above steps by adopting any of below suitable approaches:

### **III EXISTING METHODS**

The present technique for menu requesting framework incorporates additional human endeavors for getting a request from the client, by giving the client a menu card on their table and furthermore charging is a unique consideration need to pay for each table and their orders. Thus, the menu requesting through an electronic framework interface will get an extreme reaction from the clients because of the efficient strategy and more intelligent approach to convey. The remote correspondence interface will give a quicker and precise information transmission in a minimal expense. The primary expect to carry out this e-menu requesting framework is its easy to use interface just as to decrease human endeavors. The execution of electronic menu requesting frameworks might have a few contrasts in interface plan and strategy. The zig-honey bee correspondence is utilized as remote interface and the graphical LCD show with contact screen is utilized as client interface. In the new past there has been development in requesting and serving framework yet the outcomes are not especially encouraging. With the progression in correspondence innovation the issues of being late engaged can be tackled. To viably run a café, efficient and cost enhancements are fundamental. Decrease on schedule by a couple of moments for

each table can accelerate request preparing, increment proficiency and lift benefits.

The paper is proposed with the Zigbee innovation as the correspondence medium which carries out quicker requesting framework. The innovation ready to tackle need number of laborer, lessens the blunder on requesting food varieties by the clients. The e-menu food requesting framework depends on programming equipment foundation of Arduino (ATMega328p) and utilizing Zigbee short reach radio correspondence innovations. We have separated the framework in two areas one is handheld segment (client segment) and other is fundamental segment (proprietor segment), both segment comprises of Zigbee handsets. At handheld area GLCD with contact screen is given to submit the request and request sends further to primary segment through Zigbee handset. All the while ringer will demonstrate that request has shown up and LCD show which is at fundamental segment is utilized to show food menu request and cost. Café is a public spot which opens to all to offer food and refreshment to people groups. Café business is quite possibly the most beneficial business. In this way, the significance of food serving is of incredible importance. Throughout the long term, food and the general occupation of serving have developed such a lot of that requirement for help and computerization has been expanded [1]. With the headway of robotization eateries are expected to refresh with programmed framework for saving time in running an eatery. In ongoing café frameworks, the servers keep the record of clients' orders and afterward request goes to kitchen for arrangement. The proposed framework is the café menu requesting framework dependent on Zigbee. Programmed menu requesting framework through an electronic framework interface can be an ideal answer for work on the fields of café. In conventional cafés the orders are taken from the clients by the servers. Paper menu needs additional human endeavors to get the orders from the clients. The menu cards are set on their tables. Along these lines, customary café framework needs human endeavors and it devours the time. The proposed framework can save time and diminish labor.

The point of this programmed menu requesting framework is to lessen request mistakes, holding up time and human endeavors. LCD and switches are utilized for putting request as client interface. As remote correspondence interface zigbee is utilized for a quicker and precise information transmission. The menu things and the switches are shown on LCD. The client can see the menu along with costs and make a request through LCD by squeezing the switches. The orders are shipped off the PC show in kitchen with table numbers which will have the association with zigbee module to get the approaching requests. This proposed framework means to not just decrease the human communication and save time yet additionally to further develop eatery business. The menu card is given utilizing android application. The request will be shipped off the counter comprising of PC through Wi-Fi interface and the subtleties will be saved in the data set of the counter. It expects Graphical User Interface (GUI) progressed contact screen module is used as menu requesting framework. Client can organize through this touch screen device put on each table in café. HTML is used for planning pages of eatery.

**IV PROPOSED METHOD**

**4.1 BLOCK DIAGRAM**

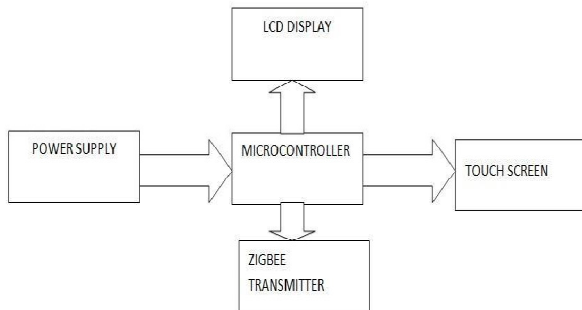


FIGURE 4.1.1 – BLOCK DIAGRAM FOR TRANSMITTER

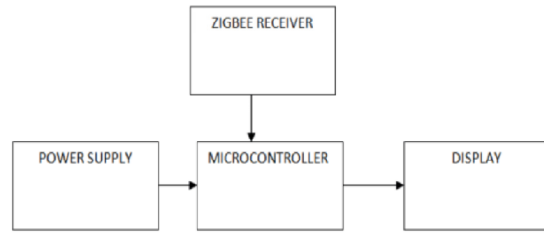


FIGURE 4.1.2 – BLOCK DIAGRAM FOR RECEIVER

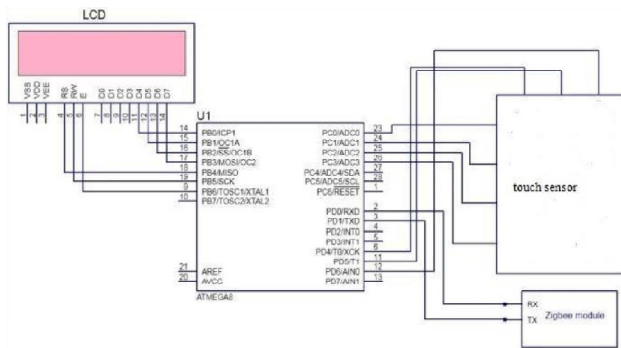
Automation systems are increase in day to day life. It is the essential part in the field of electronics. It deals with transfer of data from one place to another place. Communication has major role in the successful data transfer and to get the acknowledgement from receiver. There are two mode of transmission; wired and wireless transmission. In wired transmission, data is transferred through a physical medium or a link whereas no physical link is used in wireless transmission. Both mediums have its own characteristics and advantages. Many times when we visit any restaurants due to overcrowded when order is being placed it takes more time to process and increases the man power to overcome such disadvantages a system is being implemented called as automatic hotel order processing system where users table consists of a keypad and LCD display on pressing the relevant code of the food item user can send that to the kitchen where waiter can take the order and send the acknowledgement to the customer. Then waiter serve the menu to the customer on time.

Hotel is one where technology and advancements in technology have not been utilized to the fullest potential. Traditional method that is commonly been used in hotels is by taking the customer’s orders and writing it down on a piece of paper. Many solutions have been proposed for solving this issue. This project is again one attempt in the same direction. In this paper we discuss the automation for food ordering system. This system makes use of zigbee as a communication device and LCD display module compatible with Aurdino as hardware.

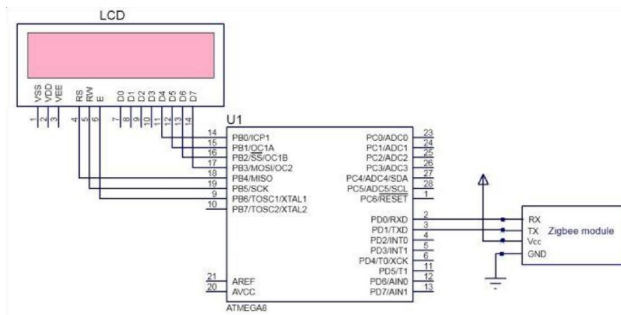
The basic principle of working of system is based on use of a handheld device placed on each table which is used to make an order at the hotel. The system uses a LCD display module which is placed on each customer’s table for them to make order. Order is made by selecting the items displayed on LCD . The order will be sent from the customer section using zigbee communication and automatically will be displayed on a screen at the kitchen. The bill will be displayed at customer’s table as well as at kitchen. The project will reduce the time spent on making the orders and paying the bills, whereby the cost and man power also can be reduced.

**V DESIGN METHOD**

**5.1 CIRCUIT DIAGRAM**



**FIGURE 5.1.1** Block diagram of Transmitter



**FIGURE 5.1.2** Block diagram of Receiver

**5.2 WORKING PRINCIPLE**

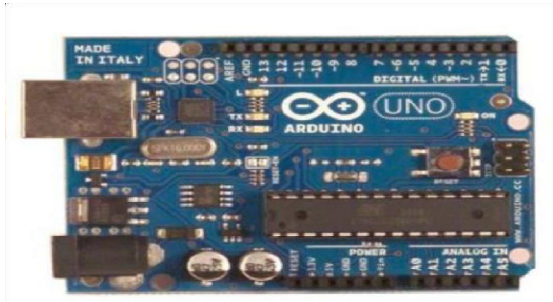
Customer will observe the menu list of hotel on LCD display. Customer will choose menu of his choice by selecting the respective menu. While

doing this, buzzer will ON and LED start blinking which indicates that order has been successfully placed. This order will received by the waiter which will displayed on the LCD placed in kitchen. After receiving order waiter will send acknowledgment to the customer. After getting acknowledgement, customer knows about the confirmation order. If respective menu is not present, then waiter press the Reject button which gives the acknowledgement to the customer about the unavailability of menu or item and Re-order. Waiter serves the menu to the customer. Customer can add additional menu if he want. If customer don't want to take any menu he can press "Exit" button and then message will come "Are you sure to pay bill?" When customer press "YES" bill will generated on table. The basic principle of working of system is based on use of a handheld device placed on each table which is used to make an order at the hotel. The system uses a LCD display module which is placed on each customer’s table for them to make order. Order is made by selecting the items displayed on LCD.

The order will be sent from the customer section using zigbee communication and automatically will be displayed on a screen at the kitchen. The bill will be displayed at customer’s table as well as at kitchen. The project will reduce the time spent on making the orders and paying the bills, whereby the cost and man power also can be reduced. The system is start from the customer’s table. When the customer is sit on the table system is initialize and display the name of system. The various menus are display on LCD display; customer has to select the quantity of particular food item by pressing noted point on touchpad. If customer wants to increase the quantity then again press the touchpad. After selecting quantities of the entire food items bill is display on the screen. This order is now send to the kitchen side using zigbee. At kitchen after receiving order reply is given to the customer using keypad. Customer is received reply of unavailable food item. Then customer again have to reply back to confirm the order. Then food is served according to the order. The order is also send to the manger also. At manager side after login web page is open which include all the information related to restaurant. Manager can add the food item, check the bill,

change username password, and see the remaining food material in the kitchen in short manage all the activity

### 5.3 ARDUINO UNO



The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. The Uno differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it features the Atmega8U2 programmed as a USB-to-serial converter. "Uno" means one in Italian and is named to mark the upcoming release of Arduino 1.0. The Uno and version 1.0 will be the reference versions of Arduino, moving forward. The Uno is the latest in a series of USB Arduino boards, and the reference model for the Arduino platform; for a comparison with previous versions, see the index of Arduino boards.

### 5.4 TECHNICAL SPECIFICATION

- Microcontroller ATmega328
- Operating Voltage 5V
- Input Voltage (recommended) 7-12V
- Digital I/O Pins 14 (of which 6 provide PWM output)
- Analog Input Pins 6
- DC Current for 3.3V Pin 50 mA
- Flash Memory 32 KB of which 0.5 KB used by

- SRAM 2 KB

### 5.5 POWER

The Arduino Uno can be powered via the USB connection or with an external power supply. The power source is selected automatically. External (nonUSB) power can come either from an AC-to-DC adapter (wall-wart) or battery. The adapter can be connected by plugging a 2.1mm center-positive plug into the board's power jack. Leads from a battery can be inserted in the Gnd and Vin pin headers of the POWER connector. The board can operate on an external supply of 6 to 20 volts. If supplied with less than 7V, however, the 5V pin may supply less than five volts and the board may be unstable. If using more than 12V, the voltage regulator may overheat and damage the board. The recommended range is 7 to 12 volts. The power pins are as follows: **VIN**. The input voltage to the Arduino board when it's using an external power source (as opposed to 5 volts from the USB connection or other regulated power source). You can supply voltage through this pin, or, if supplying voltage via the power jack, access it through this pin. **5V**. The regulated power supply used to power the microcontroller and other components on the board. This can come either from VIN via an on-board regulator, or be supplied by USB or another regulated 5V supply. **3V3**. A 3.3 volt supply generated by the on-board regulator. Maximum current draw is 50 mA. **GND**. Ground pins. 21

## 5.6 MEMORY

The Atmega328 has 32 KB of flash memory for storing code (of which 0,5 KB is used for the bootloader); It has also 2 KB of SRAM and 1 KB of EEPROM (which can be read and written with the EEPROM library).

## 5.7 INPUT AND OUTPUT

Each of the 14 digital pins on the Uno can be used as an input or output, using `pinMode()`, `digitalWrite()`, and `digitalRead()` functions. They operate at 5 volts. Each pin can provide or receive a maximum of 40 mA and has an internal pull-up resistor (disconnected by default) of 20-50 kOhms. In addition, some pins have specialized functions: **Serial: 0 (RX) and 1 (TX)**. Used to receive (RX) and transmit (TX) TTL serial data. These pins are connected to the corresponding pins of the ATmega8U2 USB-to-TTL Serial chip.

**External Interrupts: 2 and 3**. These pins can be configured to trigger an interrupt on a low value, arising or falling edge, or a change in value. See the `attachInterrupt()` function for details. **PWM: 3, 5, 6, 9, 10, and 11**. Provide 8bit PWM output with the `analogWrite()` function. **SPI: 10 (SS), 11 (MOSI), 12 (MISO), 13 (SCK)**. These pins support SPI communication, which, although provided by the underlying hardware, is not currently included in the Arduino language. **LED: 13**. There is a built-in LED connected to digital pin 13. When the pin is HIGH value, the LED is on, when the pin is LOW, it's off. default they measure from ground to 5 volts, though is it possible to change the upper end of their range using the AREF pin and the `analogReference()` function. Additionally, some pins have specialized functionality: **I2C: 4 (SDA) and 5 (SCL)**. Support I2C (TWI) communication using the `Wire` library. There are a couple of other pins on the board: **AREF**. Reference voltage for the analog inputs. Used with `analogReference()`. **Reset**. Bring this line LOW to reset the microcontroller. Typically used to add a reset button to shields which block the one on the board. See also the mapping between Arduino pins and Atmega328 ports.

## 5.8 COMMUNICATION

The Arduino Uno has a number of facilities for communicating with a computer, another Arduino, or other microcontrollers. The ATmega328 provides UART TTL (5V) serial communication, which is available on digital pins 0 (RX) 22 The Arduino Uno can be programmed with the Arduino software (download). Select "Arduino Uno w/ATmega328" from the **Tools > Board** menu (according to the microcontroller on your board). For details, see the reference and tutorials. The ATmega328 on the Arduino Uno comes pre burned with a boot loader that allows you to upload new code to it without the use of an external hardware programmer. It communicates using the original STK500 protocol (reference, C header files). You can also bypass the boot loader and program the microcontroller through the ICSP (In-Circuit Serial Programming) header; see these instructions for details.

The ATmega8U2 firmware source code is available . The ATmega8U2 is loaded with a DFU boot loader, which can be activated by connecting the solder jumper on the back of the board (near the map of Italy) and then resetting the 8U2. You can then use Atmel's FLIP software (Windows) or the DFU programmer (Mac OS X and Linux) to load a new firmware. Or you can use the ISP header with an external programmer (overwriting the DFU boot loader).

## 5.9 RESET

Rather than requiring a physical press of the reset button before an upload, the Arduino Uno is designed in away that allows it to be reset by software running on a connected computer. One of the hardware flow control lines (DTR) of the 23

## 5.10 USB OVERCURRENT PROTECTION

The Arduino Uno has a resettable polyfuse that protects your computer's USB ports from shorts and overcurrent. Although most computers provide their own internal protection, the fuse provides an extra layer of protection. If more than 500 mA is applied to the USB port, the fuse will automatically

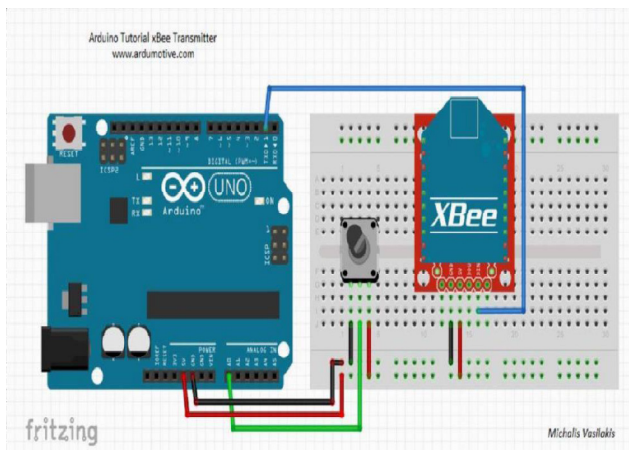


break the connection until the short or overload is removed.

### 5.11 ARDUINO PROGRAMMING

Once arduino IDE is installed on the computer, connect the board with computer using USB cable. Now open the arduino IDE and choose the correct board by selecting Tools>Boards>Arduino/Genuino Uno, and choose the correct Port by selecting Tools>Port. Arduino Uno is programmed using Arduino programming language based on Wiring. To get it started with Arduino Uno board and blink the built-in LED, load the example code by selecting Files>Examples>Basics>Blink. Once the example code (also shown below) is loaded into your IDE, click on the ‘upload’ button given on the top bar. Once the upload is finished, you should see the Arduino’s built-in LED blinking.

### 5.12 ZIGBEE INTERFACE

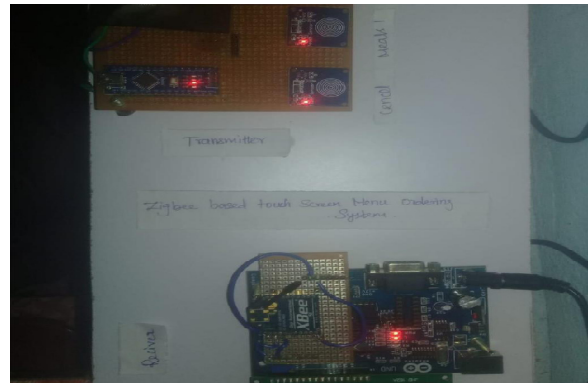


The implemented system of restaurant menu ordering system is a modern and smart solution for menu ordering methods in any kind of restaurant. The system will reduce the manual efforts and also gives more accuracy in calculating the bill for each individual table. It is also a low cost alternative to be used by middle and low level restaurants also. And the proposed system will help in reducing the number of staffs used in the restaurant and also helps to give fast service hence will help in considerably reducing cost and efficient service of

restaurant Management The ZigBee based menu ordering system starts working from displaying the menu items available in the restaurant on graphical LCD connected to the atmega 328 microcontroller at every table in the restaurant. The users can choose any of the item by simply tapping the corresponding item icon on the touch screen. The touch screen will send the corresponding instructions about the selected item to the LPC2148. The atmega 328 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 it’s display with a buzzer sound to alert the attenders at that particular place.

## VI RESULT AND ANALYSIS

### 6.1 HARDWARE OUTPUT



Customer will observe the menu list of hotel on LCD display. Customer will choose menu of his choice by selecting the respective menu. While doing this, buzzer will ON and LED start blinking which indicates that order has been successfully placed. This order will received by the waiter which will displayed on the LCD placed in kitchen. After receiving order waiter will send acknowledgment to the customer. After getting acknowledgement, customer knows about the confirmation order. If respective menu is not present, then waiter press the Reject button which gives the acknowledgement to the customer about the unavailability of menu or item and Re-order. Waiter serves the menu to the customer. Customer can add additional menu if he want. If customer don’t want to take any menu he

can press “Exit” button and then message will come “Are you sure to pay bill?” When customer press “YES” bill will generated on table. Automation systems are increase in day to day life. It is the essential part in the field of electronics. It deals with transfer of data from one place to another place. Communication has major role in the successful data transfer and to get the acknowledgement from receiver. There are two mode of transmission; wired and wireless transmission n wired transmission, data is transferred through a physical medium or a link whereas no physical link is used in wireless transmission. Both mediums have its own characteristics and advantages. The basic principle of working of system is based on use of a handheld device placed on each table which is used to make an order at the hotel. The system uses a LCD display module which is placed on each customer’s table for them to make order. Order is made by selecting the items displayed on LCD. The order will be sent from the customer section using zigbee communication and automatically will be displayed on a screen at the kitchen. The bill will be displayed at customer’s table as well as at kitchen. The project will reduce the time spent on making the orders and paying the bills, whereby the cost and man power also can be reduced.

## II CONCLUSIONS

This system is convenient, effective and easy to improve the performance of restaurant’s staff. In this system we present an automated food ordering system with real time customer feedback Increasing trends towards a smarter world, it will bring in a good profitable business. . It will also provide quality of service and customers satisfaction. Hotel is one where technology and advancements in technology have not been utilized to the fullest potential. Traditional method that is commonly been used in hotels is by taking the customer’s orders and writing it down on a piece of paper. Many solutions have been proposed for solving this issue. This project is again one attempt in the same direction. In this paper we discuss the automation for food ordering system. This system makes use of

zigbee as a communication device and LCD display module compatible with Aurdino as hardware.

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- [3]Mayurdeshmukh, PiyushC.Mankar proposed “Implementation of smart restaurant with e-menu card” in international journal of computer Application 2015.
- [4] International Journal of Computer Trends and Technology Smart Ordering System via Bluetooth The project is proposed with the Bluetooth technology as the communication medium, Peripheral Interface Controller (PIC) ,LCD and key pad
- [5] Automated Food Ordering System with Real-Time Customer Feedback This project is proposed with wifi technology using Android mobile,laptop and broadband modem and wireless medium
- [6] 3EMenu Card systems for Restaurants by International Journal of Innovative Research in Advanced Engineering The project is proposed with RS-232 cable as the communication medium , Peripheral Interface Controller (PIC) ,computers
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