

# E-MENU CARD SYSTEM FOR RESTAURANT

#<sup>1</sup>Adhwade Bhagyashri, #<sup>2</sup>Shinde Smita, #<sup>3</sup>Khade Swapnali

<sup>1</sup>adhwadebhagyashri@gmail.com

<sup>2</sup>smitaanilshinde@gmail.com

<sup>3</sup>swapnalikhade92@gmail.com

#<sup>123</sup>Student BE E&TC

SRCOE, PUNE.

**Abstract-** The e-menu system is designed for ordering food items at a restaurant electronically. It consists of Table-Console on each table from where the order is sent directly to kitchen console wirelessly. The customer can select food item from menu list displayed on his console with the help of touch screen display meant for input. The menu list will be displayed along with the price per item. Quantity of that particular item ordered can be entered by just single touch. Once the order is finalized it will be sent to kitchen. After that acknowledgement of delivery is sent from the Kitchen to table. It can send the data simultaneously to the kitchen console. Each order received will have a table number attached to it, to avoid confusion. The order received first will be prepared first and accordingly get the acknowledgement.

**Index Terms-** Microcontroller, Arduino, Zigbee, LCD display etc.

## I. INTRODUCTION

As in many cultures, eating and drinking are important and widely respected parts of Indian culture, local customs, traditions, and religions. Eating out is a relatively new development in India, which has developed despite traditional values because of the growth of the middle and upper classes that have changing work and leisure patterns. Today a large slice of middle-class India's income is spent on restaurants.

Technically, a restaurant prepares and serves food, drink and dessert to customers. There are various types of restaurants. Restaurants fall into several industry classification based upon menu style, preparation methods and pricing. Additionally, how the food is served to the customer helps to determine the classification. Meals are generally served and eaten on premises, but many restaurants also offer take-out and food delivery services. Restaurants vary greatly in appearance and offerings, including a wide variety of cuisines and service models.

Whether serviced or self-service or combinations of same, there are many different styles of restaurants. Drive-through, walk-up or drive-in, table-service, combination set-ups of service-counter, table, and buffet type service are also available. There are lots of variety and choice when it comes to restaurants. What is served, when it opens and how much it costs all play into these as well. What is on the menu or the signature dishes can also characterize and describe a restaurant well. In a restaurant, a menu is a printed brochure or public display on a poster or chalkboard that shows the list of options for a diner to select.

Some restaurants may also have separate menus for food, liquor, and mixed drinks, and for desserts. In some restaurants, each menu item has a number, and the customers are asked to "order by number". Menus vary a great deal in terms of their length and the amount of detail that they provide. In some restaurants, the entire menu fits on a single sheet of paper.

In other restaurants, the menu is bound into a brochure or binder, as it contains a number of pages. A menu may be long either because the restaurant carries an extensive selection of items, because the menu has a lengthy description of each item and its preparation, or from a combination of these factors. In the 2000s, many fast food restaurants in western world switched to digital menus which are displayed on flat-screen LCD televisions.

## II. EXISTING SYSTEM

Typically, at any restaurant customers sit at tables, their orders are taken by a waiter, who brings the food when it is ready, and the customers pay the bill before leaving. The order is generally placed from a printed menu card or menu booklet in some cases. This is the well known and traditional way of ordering food at a restaurant.

But with the invention of LCD and Plasma displays, some menus have moved from a static printed model, to one which can change dynamically. Many fast food restaurants in western world switched to digital menus, where, by using a flat LCD screen and a computer server, menus can be digitally displayed allowing moving images, animated effects and the ability to edit details and prices.

For fast food restaurants, a benefit is the ability to update prices and menu items as frequently as needed, across an entire chain. Digital menu boards also allow restaurant owners to control the day parting of their menus. Various software tools and hardware developments have been created for the specific purpose of managing a digital menu board system (such as the systems designed by (Beaver Group). Digital menu screens can also alternate between displaying the full menu and then doing video commercials to promote specific dishes or menu items.

In order to make speedy service possible and to ensure accuracy and security, many fast food restaurants have incorporated hospitality point of sale systems. This makes it possible for kitchen crew people to view orders placed at the front counter or drive through in real time. Wireless systems allow orders placed at drive through speakers to be taken by cashiers and cooks. Drive through and walk through configurations will allow orders to be taken at one register and paid at another.

### III. PROPOSED SYSTEM

In this unique system designed for restaurants where the order is taken by the waiters by the customer after reading the menu card. So a waiter is needed to take order and give to the captain in the kitchen, then captain will proceed that order further. A person is needed to attain the customer initially but the e-menu system is designed for ordering food items at a restaurant electronically. It consists of Table-Console on each table from where the order is sent directly to kitchen console wirelessly. The consumer can select food item from menu list displayed on his console with the help of touchscreen display meant for input. The menu list will be displayed along with the price per item. Quantity of that particular item ordered can be entered by just single touch. Once the order is finalized it will be sent to kitchen. After that acknowledgement of delivery is sent from the Kitchen to table.

E-menu customer console used to view the various dishes and place

order. It consists of a microcontroller unit, a touchscreen display and Zigbee module. LCD module will display the menu of the hotel along with the price per item. Customer can also enter the quantity required. When customer finishes the order, it will be sent to kitchen display. Each order will have a table no. attached to it, for convenience. The kitchen console will send back the acknowledgement after reviewing the order. Customer will get acknowledgement and status information back on his console. The information is sent and received using transmitter and receiver. An encoder is used to convert the digital data to analog signals for transmitting. Similarly a decoder is used to convert the analog signals received to digital data that is displayed on the LCD of the customer console.

### IV. BLOCK DIAGRAM

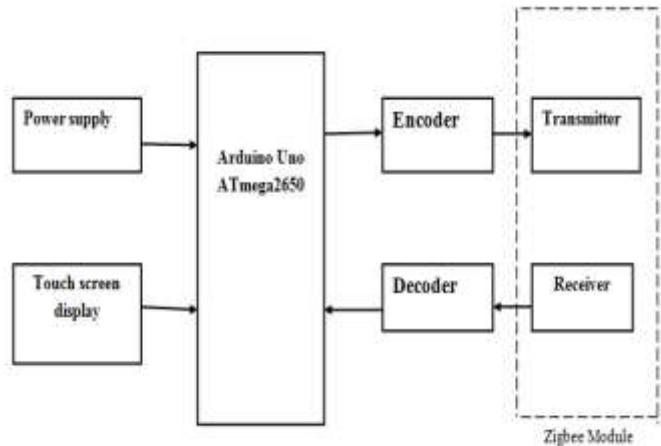
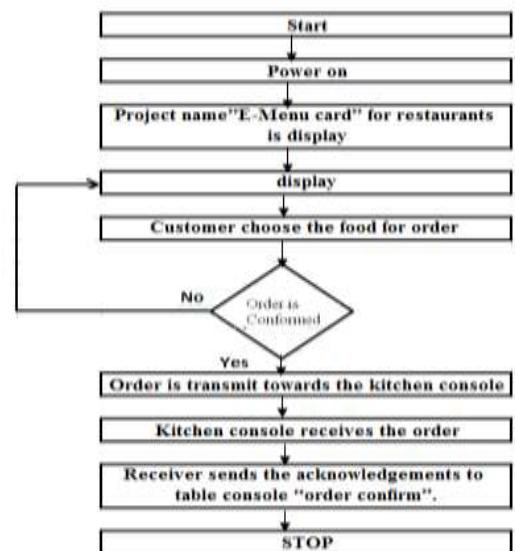


Fig. 1 Block Diagram of Transmitting Unit

### V. B FLOW CHART



## VI. SYSTEM ARCHITECTURE

The block diagram consists of following sections:-

- Microcontroller ( PIC 16F)
- Arduino board
- Zigbee module
- Touch screen display
- LCD display(2X16 CHARACTER)

## VII. APPLICATIONS

- The developed system is suitable for use in big restaurant, cinema halls, aircraft, cafeteria, pub, and small food joints.
- The system can also be deployed in offices for invoice generation.

## VIII. ADVANTAGES

- Simple and robust system design that suit the restaurant environment.
- Order is directly send to the kitchen, which save the time of customer.
- Time required for the acknowledgement that order is received is >10 second, which is very important form customer's point of view.
- This system efficient combines hardware and software part, for displaying data on the LCD display.
- System has reading range up to 40 feet as per the requirement which can be easily enhanced.
- Cost effective system.

## IX. RESULTS/CONCLUSION

E-menu card system is wireless system in which food items are ordered through the table console and communicated directly to the kitchen console. The successful implementation of the E-menu card system targeted at sending orders in the big restaurants. In e-menu card system table-console is successfully deployed on the table. The Kitchen-Console is successfully deployed in the kitchen. Software is working successfully as per the requirement. This developed system is accurate for target requirement.

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