

# Automatic Menu Ordering System

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**Abstract:** Automatic menu ordering system is made to improve the current process of ordering menu in the restaurant. This project is focusing on the replacement of waiter service for ordering process. It will provide more systematic and time consuming process for customer and also to restaurants staff. Automatic menu ordering system will solve the problem of current system such as unfriendly service and menu that not updated. By using this system, the customer can take their time making ordering and directly choose the menu on the system that installed at the customer table. The order is received by the kitchen section. This project aim is that reducing the number of waiters in a restaurant.

**Keywords:** microcontroller, LCD, USB.

## 1. Introduction

Restaurants are one of the favourite places where people usually like to visit and spend their time with their family. Good service places a very important role, as they have very great impact on the business of restaurant. there are many reasons why customer could get dissatisfied and one of the reason is that long time by the waiter to take the orders of customer as number of waiters in the restaurant are less that is for 4-5 tables there would be one waiter only. there are chances of human error, like a waiter taking wrong order and serving it to customer.

Our project mainly aims at reducing the waiter by providing a microcontroller based application, which performs task such as taking the order on the table via push button switches, providing acknowledgment from the kitchen to the customer sitting on the table, displaying the order to kitchen section.

This system has the ability to overcome to time delay in traditional ordering system. This system can also reduce the excess of labor required in relatively less unskilled occupation.

## 2. Methodology

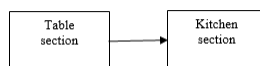


Fig. 1. Methodology

The overall flow chart of waiter-less restaurant is shown in above figure the model is divided into two part that is kitchen section and table section there is sent signal to table it is one-way communication.

There are seven button are assigned are as follows with their function

**Menu button:** The function of this button is used to display the menu such as breakfast, lunch, beverages.

**Select button:** the function of this button is used to select the menu when you want to order. Like this when you are select breakfast option then the sub options in that showing on the LCD display.

**Increment button:** the function of this button increment the menu in order.

**Cancel button:** If we want to cancel the order immediately then by using this cancel button.

**Send button:** the function of this button is to send order in kitchen section.

**Quantity button:** the function of this button is increment in quantity of order.

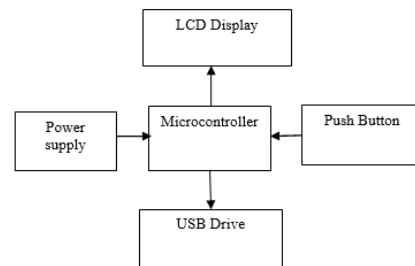


Fig. 2. Block diagram

### A. Components

**LCD:** The HD 44780 is a liquid crystal dot matrix display module the consist of LCD panel, LCD control driver and driver is capable of providing 16 \*2 display.

It contains a controller, a data RAM and character ROM for providing display.

**Resistor:** Resistor is an electric component that limits or regulates the flow of electric current in electronic circuit. A device is used in Electrical current conduction to control the direction of the current flowing to a circuit by both controlling the flow of current differently.

**Capacitor:** A capacitor is an electrical device that has in dc circuits the purpose of storing energy, it stores an electrical charge. Two capacitor is used in circuit 100 micro-farad and 10 micro-farads.

**K7805:** It is a voltage regulator. Voltage sources in a circuit may have fluctuation resulting in not providing fixed voltage output. A voltage regulator IC maintain the output voltage at a constant value.

**Receiver:** The receiver section is connected in kitchen the order is placed by the customer is received by the USB. Thus received data are decoded and is displayed on the LCD.

**Transmitter:** Transmitter section is used for ordering the menu. In this process order is transmitted from customer to receiver. LCD is also connected in order to view the selected items.

**Microcontroller:** This is the important block of the project. It has 8 KB program memory RAM size is 256 Byte. It is heart of circuit.

**Confirmation button:** By using this button confirm the order which we want to cancel.

If customer wants to one menu at in number of quantity, then number of menu will increase by using quantity button. After this using send button customer give order to kitchen.

If customer want to cancel the order, then by using cancel button customer will be cancel the order immediately without taking too much time.

**Computer display –** Upon receiving the command from USB, computer will display order in following format:

Paneer kurma: 65/-

Quantity: 4

In this way automatic one-way communication menu ordering system process is done.

### 3. Operation

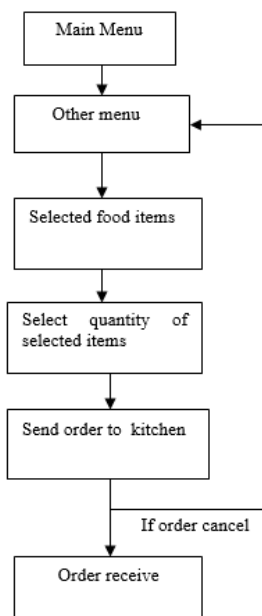


Fig. 3. Flow chart

Automatic menu ordering system consist of kitchen section that is receiver section and table section that is transmitter section. Our project is run on 12-volt DC supply.

First AC supply is given then it is converted into DC through adpoter then 12-volt DC supply is given to circuit.

Whenever the customer comes to their table then they will select the desired order menus by using push buttons. The menu is displayed on the LCD. User should press the corresponding number of the selected items from the display. The real time can use EEPROM of the microcontroller store the menu.

Items are selected by using push button. There are seven push buttons on table section, menu, select, order cancel, send, increment, quantity, confirmation respectively.

For Example: first is menu button, when press the menu buttons the available menu display on LCD. By using select button customer can select the menu that is when breakfast is selected then sub option are displayed then in that increment is take place by pressing increment button then customer should able to select the menu.

### 4. Advantages

- 1) Low power consumption.
- 2) No need of person to take order from the table.
- 3) Highly sensitive.
- 4) Fast response.
- 5) Low cost design

### 5. Experimental results



Fig. 4. when menu button is press.



Fig. 5. when select button is press.



Fig. 6. sub option in lunch.



Fig. 7. number of quantity increases.



Fig. 8. order is received by kitchen section.

### 6. Future scope

An easier order taking process speeds things up which leads to more order coming into the kitchen (and more food coming out) some terminal even contains an attached credit card reader so cashier can swipe and have customer sign on screen in a matter of second without any waste of paper or time. Use touch screen display instead of push button or LCD.

Increase the size of the display (table or monitor size) for better view. It also allows us to incorporate more number of food items in the menu.

### 7. Conclusion

Now a day everybody goes to hotel at that time they have to spend too much time to give the order with pen and paper

system. For that purpose, they also have to wait for the waiter. to overcome this problem we had designed the system named as automatic menu ordering system. With the help of our system to reduce the task of manager by inventory management system.

Nowadays the number of restaurant and population of restaurant are increases which require automatic operations. Using automatic operation in restaurant accuracy and quality of service of business is increases. Less human need to the control this system.

This project not only aims at creating a prototype but also benefit the food industry through communication technology.

### Acknowledgement

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