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## Research Article

### A RESEARCH PAPERREPORT ON SMART RESTAURANT SYSTEM

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#### ABSTRACT

In most of the restaurants meal ordering is relying on the interaction with waiters to place order into the kitchen. In busy hours of restaurant this coordination is a challenge result in un-satisfaction to the customer. To realize this, Smart Restaurant System is designed. The system covers the whole order process of a restaurant includes the interaction between customer, the waiter, the kitchen and the cashier through android application and desktop based software. The system will also include a database maintaining the record of employees. Digital Smart Menu could be replacement to paper-based menu. We conducted a survey concerning perception of paper based menus and their expectation to digital menus. The digital menu will provide interactive user interface with which user will easily place his order by itself.

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#### INTRODUCTION

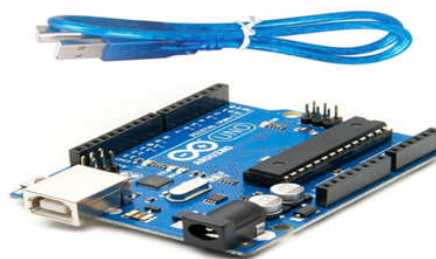
A country is said to be developed, when the standard of living in that country improved. We can improve our life style by using automation in each and every sector. By using technology we can reduce the efforts of the people. Now a day IOT is a popular technology which enables us to exchange information through the internet. By using IOT we can replace the traditional method of taking orders using paper pen as in traditional restaurant system. In IOT based smart restaurant as the customer enters the restaurant the door will open automatically. The customer can sit anywhere in the restaurant and they can select the items from display provided at each and every table. The corresponding food item will be displayed on the kitchen side which is in the site of chefs. The restaurant authority will notify the customer how much time it will take to get their food ready for delivery. As the food is prepared, the members in the kitchen will place food item on the conveyor belt and will stop at the corresponding table.

##### Components

##### Arduino Uno

It is an open source electronics platform based on easy to use hardware and software. Arduino boards are able to read inputs-

light on a sensor, a finger on a button or a twitter message and turn it into an output activating a motor turning ON an led, publishing something online.



##### Liquid Crystal Display

LCD is a flat panel display, electronic visual display that uses the light modulating properties of liquid crystals.

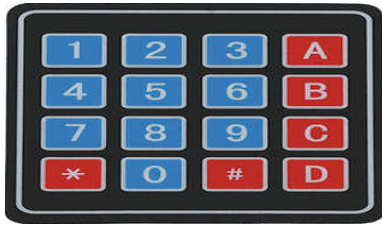


##### Keypad

Keypad 4\*4 is used for loading numerics into microcontroller.

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**ZigBee**

ZigBee is an IEEE 802.15.4-based specific for a suite of strange state correspondence traditions used to make singular zone frameworks with little, low-control propelled radios, for instance, for home robotization, restorative device data collection, and other low-control low-information exchange limit needs, planned for little scale wanders which require remote affiliation. Therefore, ZigBee is a low-control, low data rate, and closeness (i.e., singular zone) remote uniquely designated framework. Its low power usage limits transmission partitions to 10– 100 mt



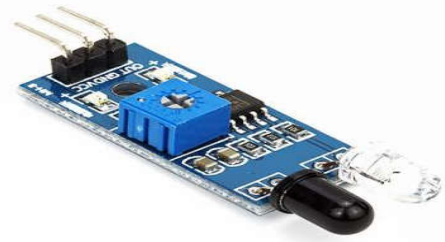
**RFID**

RFID is an acronym for “radio-frequency identification” and refers to a technology whereby digital data encoded in RFID tags or smart labels are captured by a reader via radio waves.



**Ir Sensor**

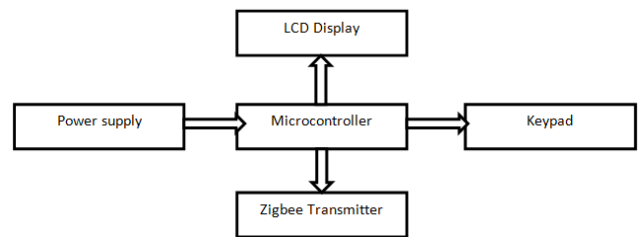
Infrared sensor is an electronic device that emits in order to sense some aspects of the surroundings.



**Block Diagram**

**Transmitter**

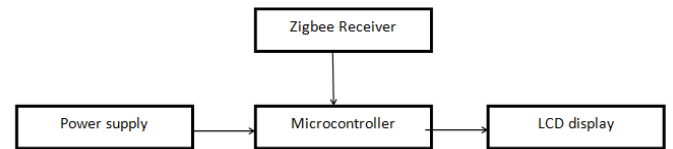
- Transmitter section is used for ordering from the menu.
- A 4\*4 keypad is used to select the items.
- Zigbee transmitter is connected to the transmit and receive pins of the microcontroller.
- LCD is also connected in order to view the selected items.



**Transmitter Section**

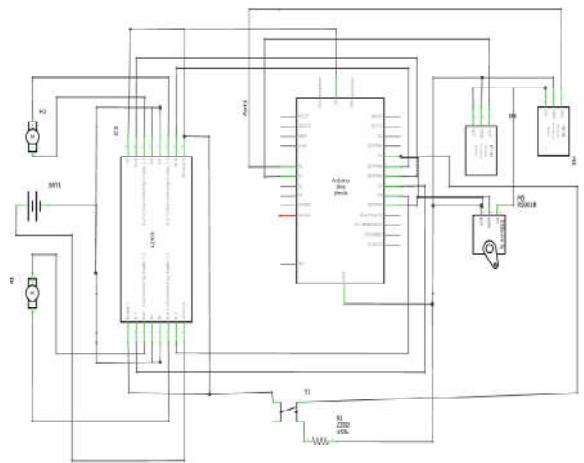
**Receiver**

- The Receiver section is connected in the kitchen. The order placed by the customer is received by the Zigbee receiver.
- Thus received data is decoded and is displayed on the LCD.



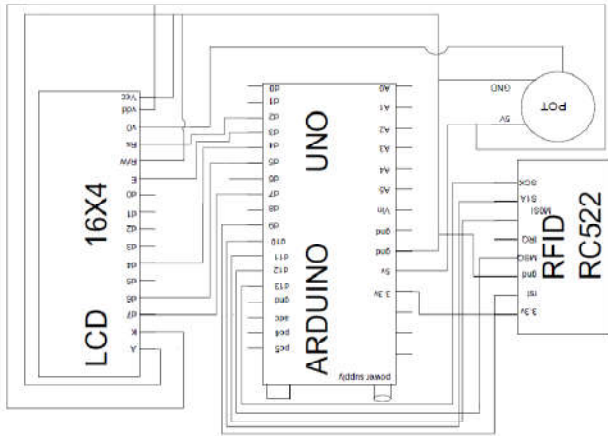
**Receiver Section**

**Circuit Diagram**



fritzing

### Conveyer Belt section



### Payment Section

#### Further Enhancements

Touchscreen can be used as an input device in place of keypad which is user friendly.

Number of tables can be extended.

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