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ARM Based Touch Menu

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Abstract**—***The main aim in the present field is Automation, reduce Power consumption and also reduce the cost eliminate the middle man between kitchen and the customer. Automation is necessary to reduce man power. Wireless communication has become an important role in the field of automation. Combination of an embedded system and wireless communication used in designing of various applications ranging from home automation to industrial automation. The aim to substitute the traditional pen and paper method by the automating menu ordering system to save the time consume by traditional menu ordering system. We use ZigBee pro and SQL Server database to develop the automatic ordering system. Due to this system customer can easily order the food from table. Also the serving of food is easier and serves on first come first serve basis. Also manager get all the information of food material available after every order in the kitchen.*

Keywords—ARM processor, Database management, Food ordering system, LCD touchpad display, Resistive touchpad display, ZIGBEE.

I. INTRODUCTION

In previous systems the ordering of food is done manually, but with our project we change this manual system and take it to an automatic level. In our project a customer can skip the waiters and directly place their order. Our project is a desktop application which will help the customer ordering their food directly with the kitchen area. While to prepare the food it would take a bit of time so we added some games for the entertainment of our customers. While the order is made the manager can access the customer orders and prepare the bill and meanwhile the manager can check on raw items available in the kitchen and make the materials available as per needed. A database of all the orders made by the customers is been saved. This also reduces the money spent on the wages of the waiters.

In bigger hotels there is already this kind of systems where the guest can order the food via telephones and in some advanced hotels there is already this kind of ordering system where the guest orders the food through a tablet made available in the room We can also use this system in hospitals where the transmitting module will be at the patient side and the receiver will be at the hospitals kitchens side. The patient or his nutritionist can order the food as per required. When the receiver at the kitchen side gets the message of the food ordered by a particular room then the canteen area in the kitchen can prepare the food according to the patient needs. By doing this we will be eliminating the work of the hospital staffs and also reduce the time in ordering the food for the bedridden patients.

II. MATERIAL AND METHOD

We use ARM processor to interface our LCD display. The table will have a resistive touchpad display which will give the customer to select their order. The selection can be done by touching the screen with hand or with a touch stick. Each food with their details will be given to the customer, the customer will then place his order by clicking the place order button. One the button is pressed the order will then be transmitted by the ZIGBEE transmitter provided in the interfacing with the ARM processor. There will be two modules in kitchen and customer table each. The communication between these two modules is done with ZIGBEE pro which is used as dual transmission of data within a range of 100 meters which is ideal for the hotel .Once order is placed the kitchen module will have a buzzer which will indicate that an order has arrived. The order will be displayed

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with its specific table number to both the manager and the kitchen staff. The chef can start preparing the dish and once they finish the kitchen staff can ring a bell to indicate the food is ready and the waiter can take it to its respective tables. We use MySQL to save the database to the manager side. The manager will have his pc on which this data will be saved. The manager can print the bill and present it to the customer. The customer will also have the option to pay the bill via online or offline methods.

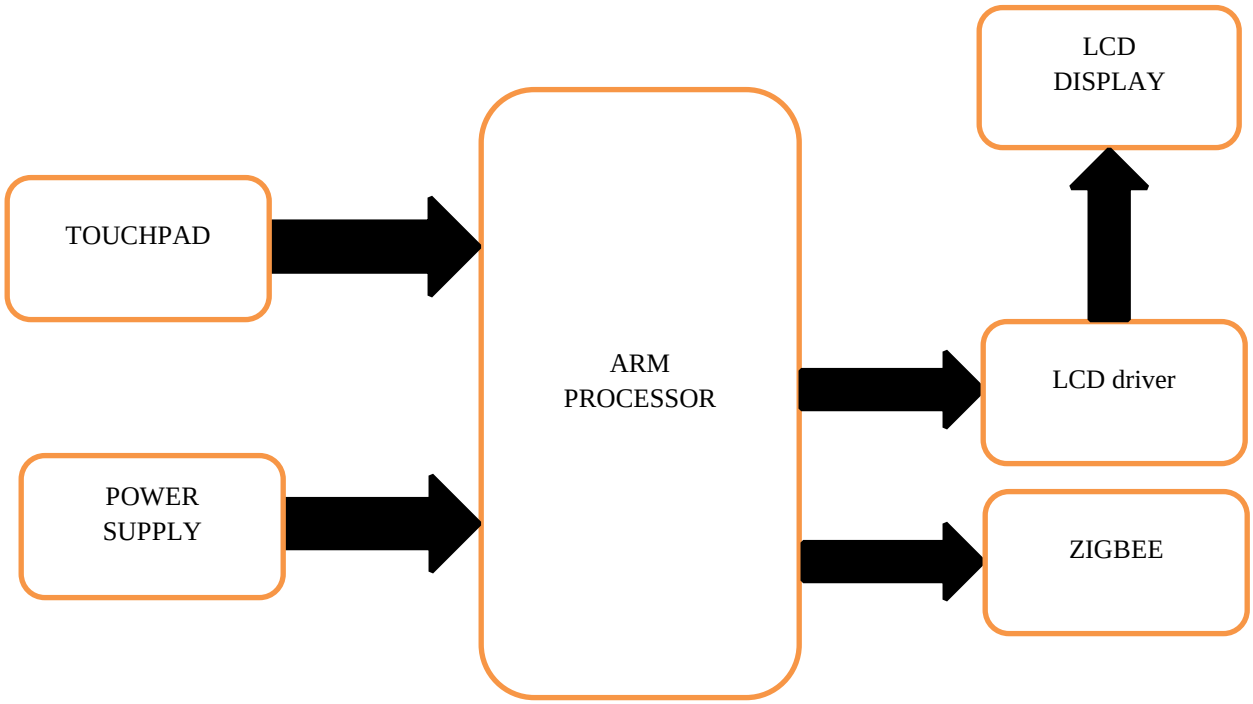

FIGURE 1: Transmitter Block Diagram.

As shown in the block diagram above. The ARM processor will be used to interface LCD display and zigbee transmitter. The transmitter side consists of LCD display and a power supply. The power supply will be a rechargeable battery which will power the processor and the LCD display. Ordering table is the transmitter in our system from which customer can give their order. List of menu is shown to the customer on the table. From that menu customer have to select their order using touchpad. After giving all the order customer have to confirm their order, after confirmation that order is send to the kitchen and at the manager's place. This all transmission is done by using ZIGBEE. Kitchen area is the receiver side of the system. In kitchen buzzer gives information about the new order placed by the customer also order is display on the LCD in the kitchen. Whenever order is received at the kitchen reply is given to the customer immediately and food serve according to the first come first serve basis**.** The kitchen area will have a graphic LCD display which is used only to display the order and the table number to the kitchen staff .There will be a third module which will be on the manager side as specified earlier. On manager computer all the information of orders given by customer is received. It also includes the information of food material available after every order in the kitchen. For security purpose login ID and Password is needed. Manager can change its Password. Manager can manage all the activity in the restaurant using this system. Manger can add any new food item. Bill is also displayed at manager side.

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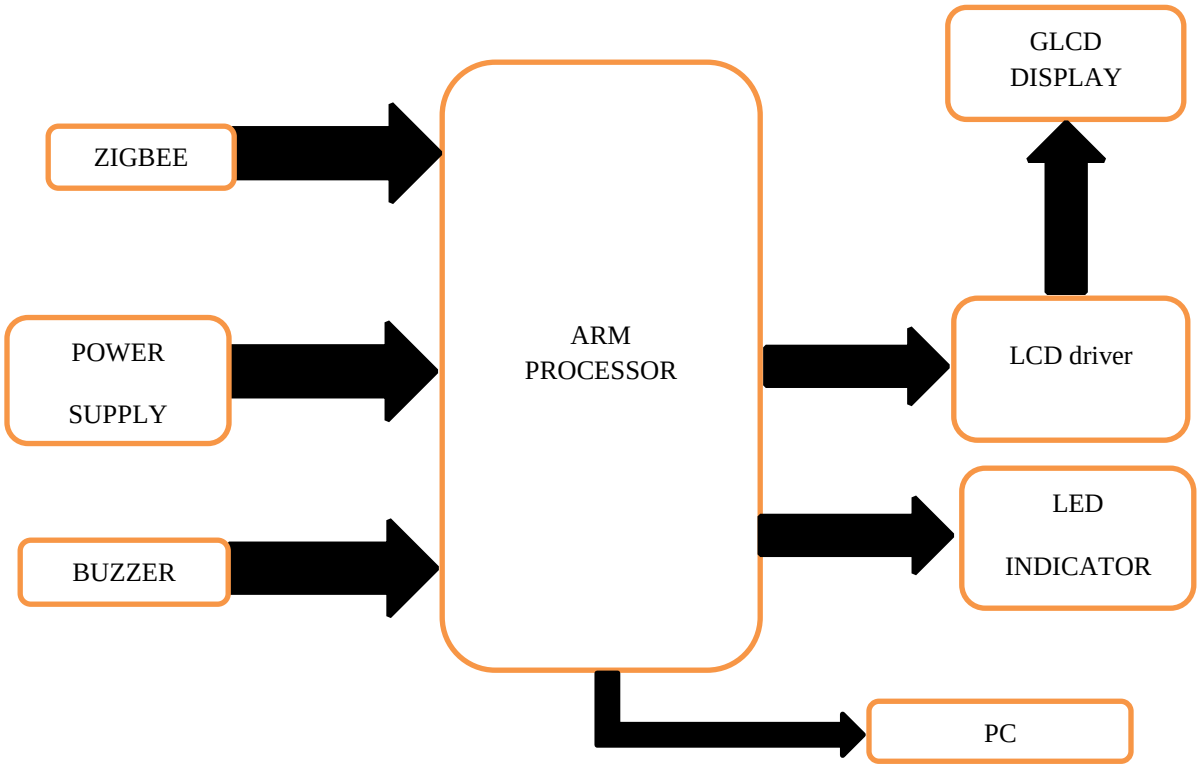

FIGURE 2: Receiver Block Diagram.

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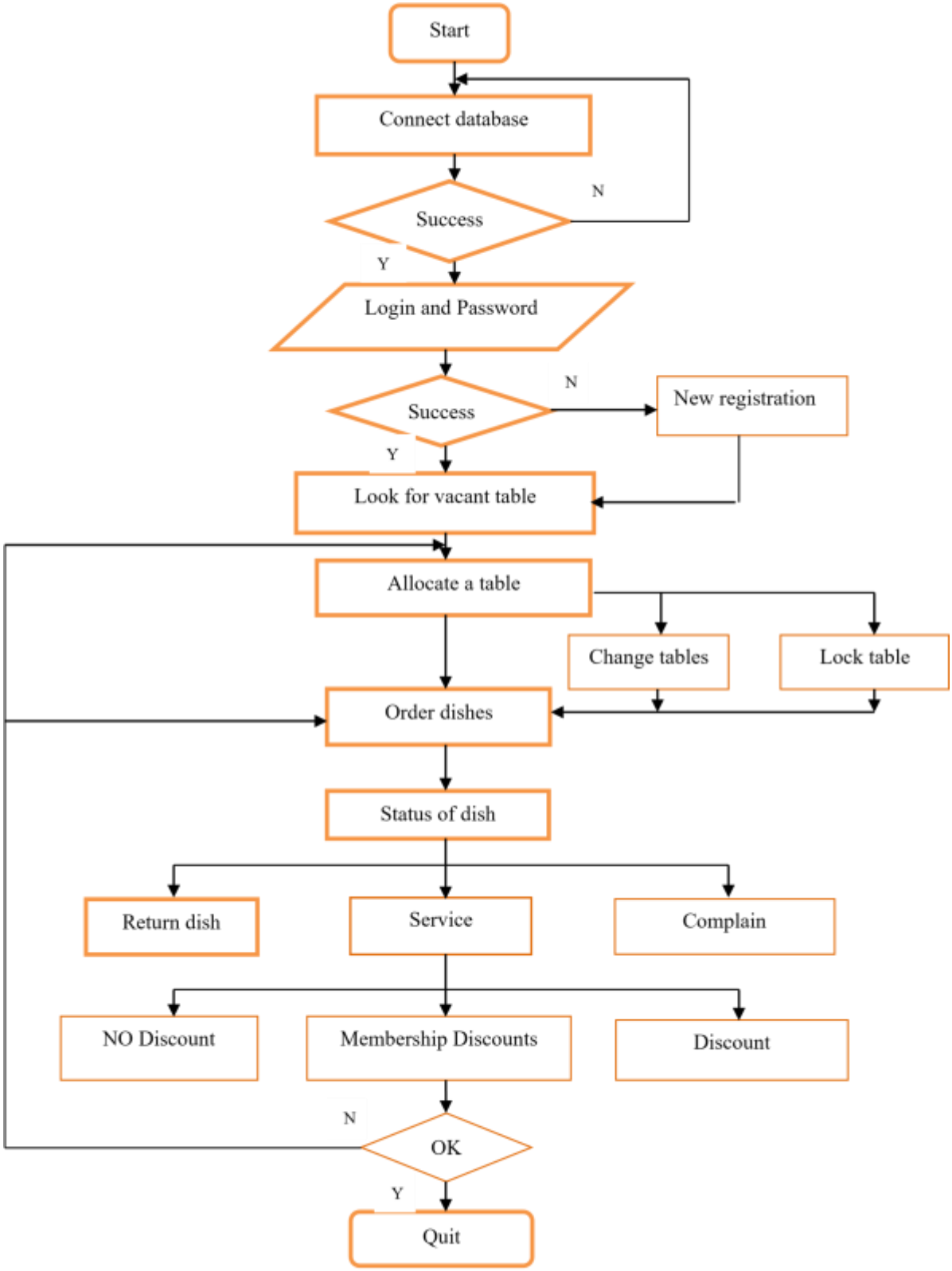

FIGURE 3: flow chart

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III. CONCLUSION

The aim of this proposed topics is that a customer can easily order their food with the help of its security they can also make their payments through online which is easy and as well as time saving. The customer will also spend his time playing games until the food arrive. This will make our customers satisfied. The other aim is to reduce the money spent on the wages of the waiters and hence reducing the overall profit of the hotel.

Electronic ordering system is an important part of the restaurants' information management system. With it, customers are able to query the price of dishes in the menu, add a record to the ordered items, delete a record from the ordered items, call the waiters and so on in a convenient way. The boss can manage the menu data conveniently, calculate the billing accurately and make the statistics of business data easily.

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