

Smart Ordering System for Digital Restaurant

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Abstract

The main goal of this paper is to attract customers and also adds to the efficiency of maintaining the restaurant's ordering and billing sections. We propose a new way on how people acquire information. Our research is to explore new ways of technology to stay informed. We designed a system for digital restaurant for ordering and serving food in the restaurant. This system replaces paper work with digital devices such as tablets/smart phones. We are implementing this system using Arduino UNO and the backend will work on PHP HTML & CSS. The state of innovation currently is to get quick information with less interaction to get it. To state briefly the device we are creating is called 'Digital Restaurant'. It is a restaurant which not works as a normal restaurant but also display relevant information like current status of food item (dishes) available in restaurant using menu ordering application or web application. The digital restaurant will solve the problem that many customer faces i.e. customer has not to make long inquires before placing their order. This order will be communicated through wireless medium to the database available at cash counter laptop. Orders received from different dining tables will be store in software which is used by restaurant and display on screen. And same display will be present in kitchen and according to customer order chef will prepare the food.

Keywords: Arduino, Smart phone, Android application, Line follower robot, Wi-Fi.

INTRODUCTION

Smart ordering system for digital restaurant minimize the number of minutes to wait for the meal serving. We use online food ordering method as; food is ordered online and delivered to the customer. This is made possible through the use of electronic payment system .The payment can be done through the customer's credit card, debit card. So, in this project we design a system which will allow customers to go online and place order for their food. Efficiency and productivity are the main two qualities that are setting up their significance as keywords for restaurant to market their products. The attainment of their product is that they can multitask or increase productivity better than the competition has become a real selling point. This is due to the fact that effective time management is an essential factor in increasing production of day-to-

day life. Integration of technology into people daily lives has made that time management possible. The use of products such as tablets, Smartphone have given people access to the tools needed to be productive.

A line follower robot serves meal to customer from kitchen. Intelligent restaurant implementation using digital touch screen menu, meal serving robotic technology and Android mobile for online payment enhance customer service quality. The system allows customers to order food by touching on the digital module which is locally connected to the kitchen and the cashier with RF module.

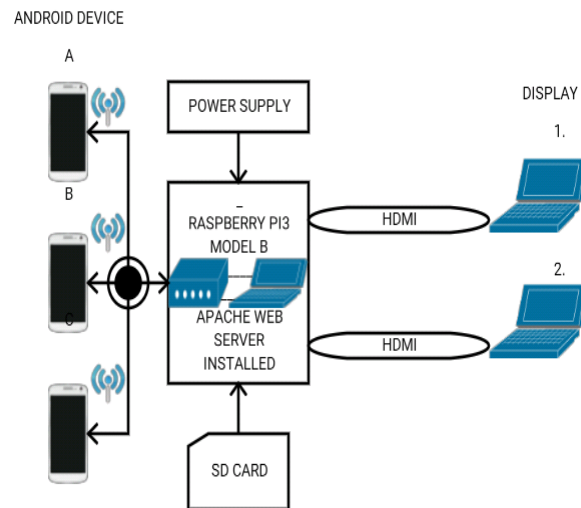
This implementation were developed to enhance quality of services as well as to enhance customers' dining experience. The proposed restaurant intensely

enhances the speed and reliability of order fulfillment. Taking the orders through digital touch screen avoid wastage of paper and also reduces the need of printing hard copy of menu card. A customer going into restaurant does not have to wait for the waiters to take the order. As soon as he occupies a seat, he can order whatever he needs; also the customer has liberty to take its own time to place order. The system

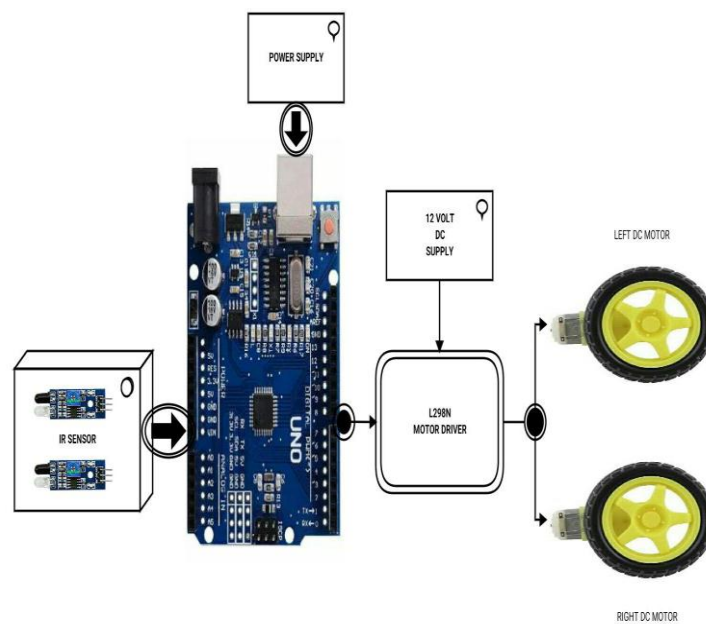
replace the existing system where famous restaurant still using a service without technology such as taking orders using pens and paper, inspect the food stocks manually and delivering order to the customer using manpower. The present management system is also improving the quality of service in the form of hospitality in receiving the customers as well as hygienic maintenance in food supply.

BLOCK DIAGRAM

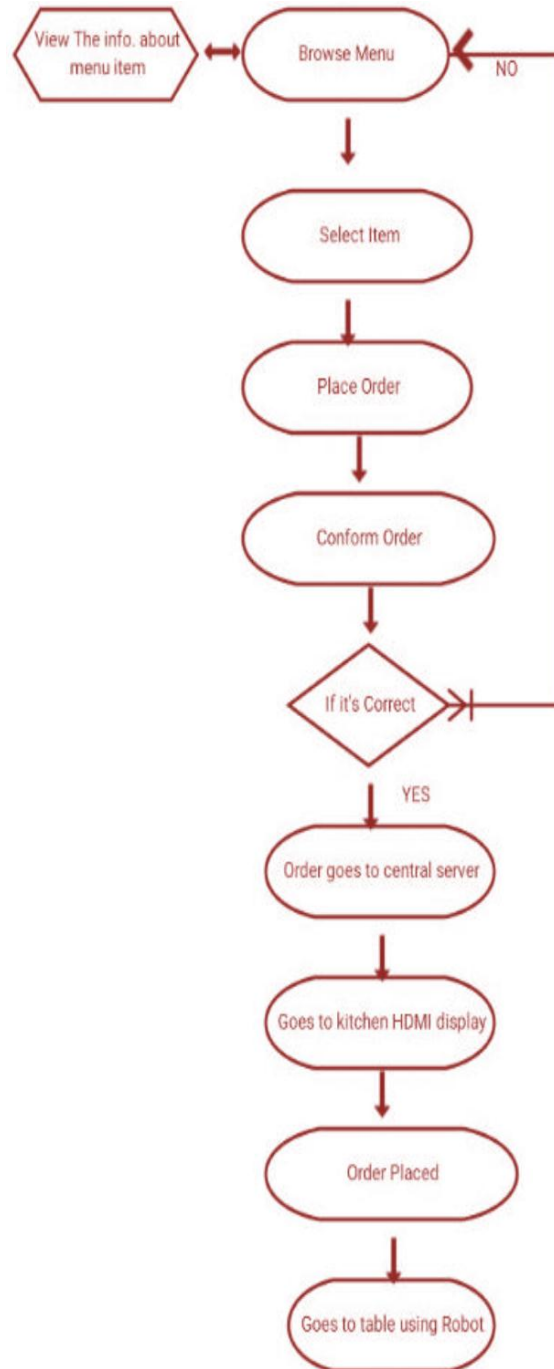
A) MENU ORDERING SYSTEM

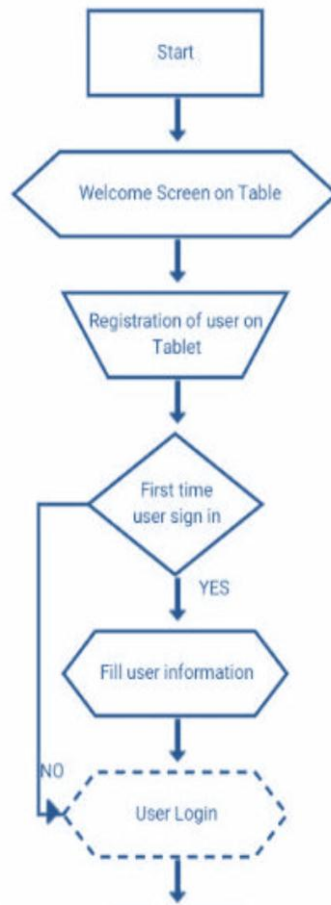


MENU SERVING SYSTEM



SYSTEM FLOW





**IMPLEMENTATION
SOFTWARE DESCRIPTION**

Software tools are as important as Hardware tools required for perfect design.

The following tool used for software development.

1. PHP
2. HTML & CSS
3. Arduino UNO

MENU ORDERING WEBPAGE

By using PHP, HTML& CSS we have create a webpage for select menu items.

Start page

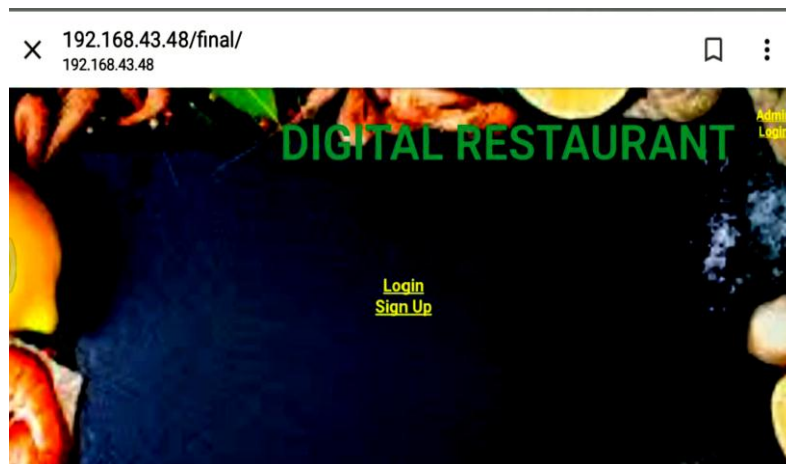


Fig.1: Start page

In start page there are two options as below:

1. Login
2. Sign Up

Login page

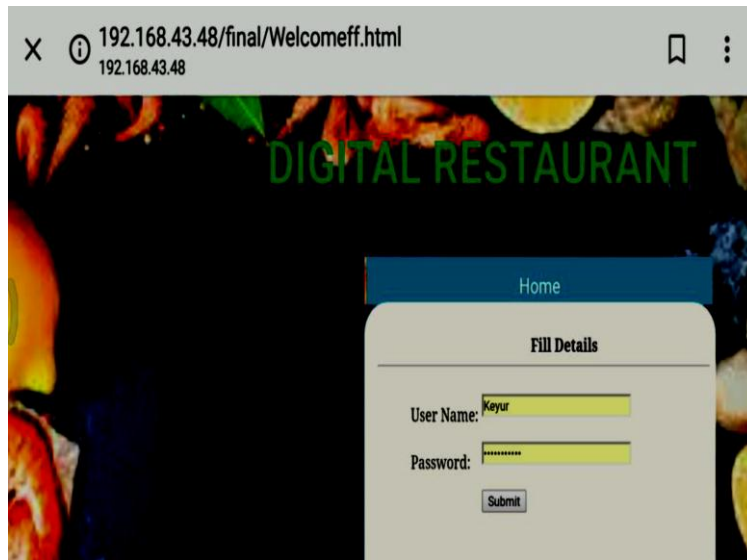


Fig.2: Login Page

If customer visit in restaurant first time then customer has to fill details of signup page and then go to login page and fill all

details i.e. Username and password and click on submit button.

Menu items

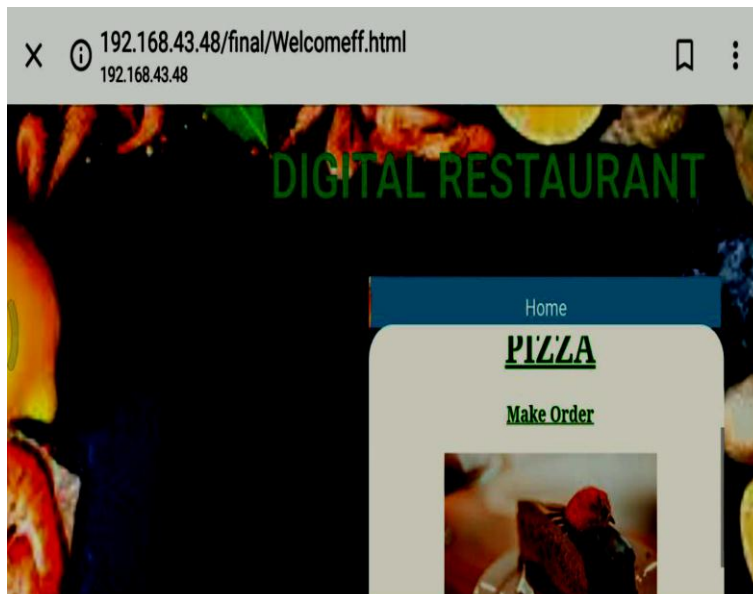


Fig.3: Menu items

After click on submit button another page will display of menu items in menu item page customer has to select menu items as

per their choice. (i.e. menu items like PIZZA, DRINKS, etc).

Select different types menu items category

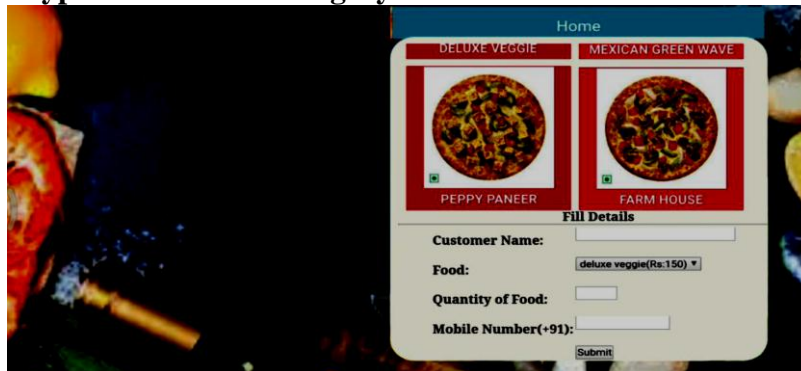
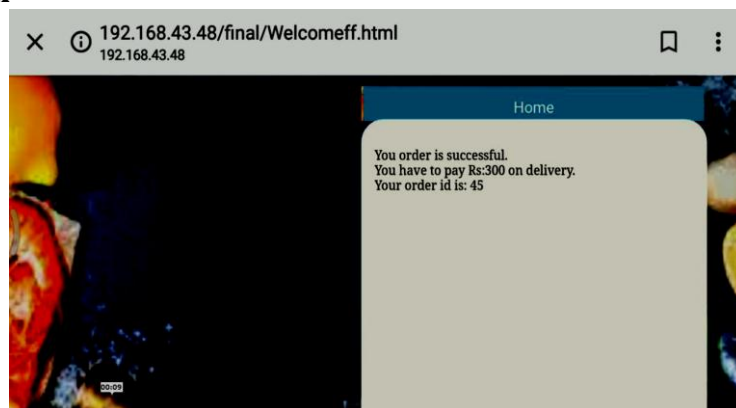


Fig.4: Select food items

After select one particular item then there are various types of food items which should be select by customer and fill all details as follow:

1. Customer Name
2. Food
3. Quantity of Food
4. Mobile Number

Order Successful



As customer fill all the details then click on submit button then they receive that your order is successful and also show

how much amount should be pay by the customer as well as they show order id number.

Admin page

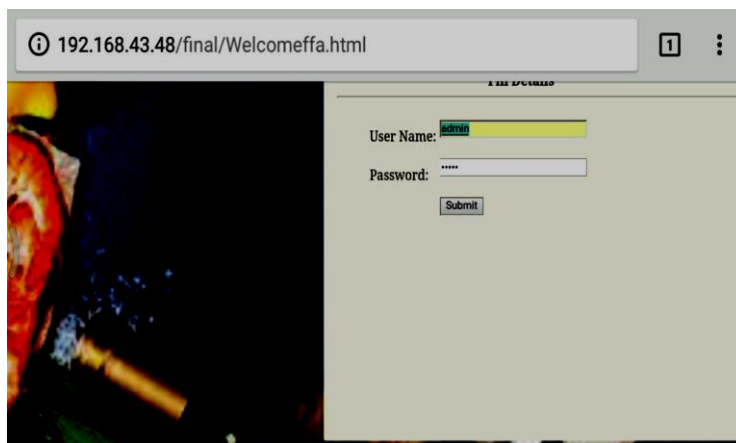


Fig.5: Admin page

Admin page which is manage by kitchen staff and there is one particular User Name

and password is assign for access the admin page.

HARDWARE DESCRIPTION

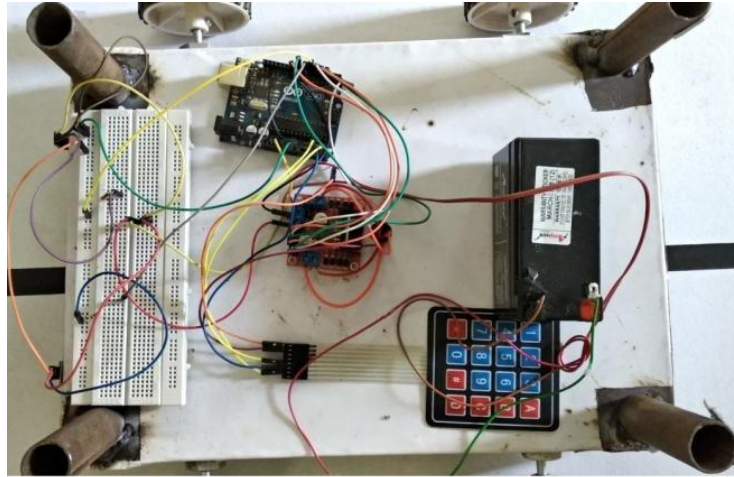


Fig.6: Line following Robot

1. The line following robot serve the selected by the customer. In which we interface 4X4 keypad so when any key is pressed then and then the robot follows particular path to the corresponding table number.
2. For line following robot in our system floor design is also considered.
3. Line follower robots are usually used in industries for assisting the automated production process, military applications, human assistance purpose, delivery services. In this system robot is used to serve order.
4. This is multifunctional smart robot which has senses of holding for some fix time delay at particular ordering table and after that completion of serving order it will automatically return back to the kitchen room to attend the next order in queue.

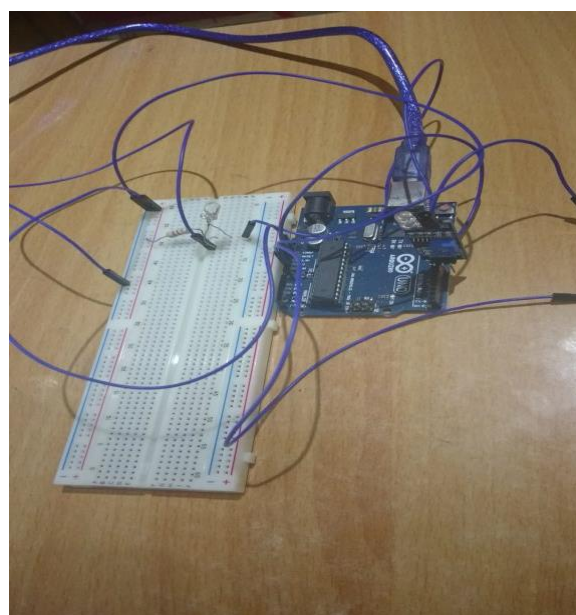


Fig.7: Sensor interface with Arduino

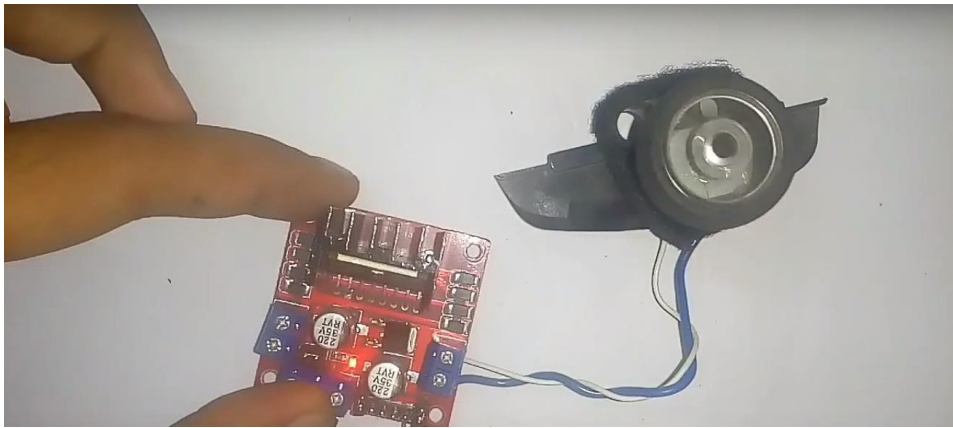


Fig.8: Testing of DC motor using L298N

CONCLUSION

By replacing the traditional paper menu slowly over digital menu for restaurant, this system is going to be enhanced in revenues. The proposed system attracts customers and adds to the efficiency of maintaining the restaurant's ordering and billing sections. By using this system, errors from human side during calculation of billing and ordering can be eliminated and controlled up to some level. The design is also improving the quality of service in the form of hospitality in receiving the customers as well as hygienic maintenance in food supply.

REFERENCES

1. M.H.A. Wahab, H.A. Kadir, N. Ahmad, A.A. Mutalib and M.F.M. Mohsin, "Implementation of network-based smart order system," International symposium on Information Technology 2010.
2. Sun Guiling; Qingqing Song, "Design of the Restaurant Self-Service Ordering System Based on ZigBee Technology," "Wireless Communications Networking and Mobile Computing (WiCOM), 2010 6th International Conference on, vol., no., pp.1,4, 23-25 Sept. 2010.
3. Hashim, NikMohdZarifie and Ali,Nur Alisa and Ja'afar, AbdShukur and Mohamad, NajmiahRadiah and Salahuddin, LizawatiandIshak, Noor Asryran (2013) Smart Ordering System via Bluetooth. International Journal of Computer Trends and Technology (IJCTT), 4 (7). pp. 2253-2256.
4. P. Lessel, M. Bohmer, A. Kroner,A. Krriger, "User Requirements and Design Guidelines for Digital Restaurant Menus", Oct- 2014
5. 5.KirtiBhandge, TejasShinde, DheerajIngale, Neeraj Solanki, ReshmaTotare, "A Proposed System for Touchpad Based Food Ordering System Using Android Application", in International Journal of Advanced Research in Computer Science & Technology (IJARCST 2015), Vol. 3, Issue 1 (Jan. - Mar. 2015).