

Digital Food Ordering System for Restaurant

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ABSTRACT

The motive behind picking up this project is to develop a food ordering system fully computerized and mobilized that can adapt ongoing changes in today's technical era rather than the orthodox ordering system which is currently carried out as preponderance in the food and beverage industries. The accustomed system that is being used by most of the food and beverage industries is the manual ordering system which means all work and procedures are recorded manually and it also includes huge amount of paper work that is not compelling and coherent. Thus, this computerized and mobilized digital food ordering system is designed to assist the business routine in term of having better management as well as easier handling of daily business operation. As the system is android based and holds the data in digital form, it can add multiple benefits to restaurant in terms of profitability. Application database is stored using MySQL database. Agile Methodology is being practiced throughout the project. The emphasized feature of the system is it does not limit the ordering procedures to desktop as portability and flexibility is the current trend

Key Words: Agile, application, desktop, MySQL

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I. INTRODUCTION

The main goal is to maintain the restaurant's functions in an effective and accurate manner and also to reduce the use of manual entries.

Manual errors occur on daily basis in traditional method followed by the restaurants. Digital system can reduce these errors as the order is placed digitally. The issue of wired system will also be resolved as Wi-Fi module is used [1]. Android applications are easy to access by every other person; food ordering via android applications is easy and can handle multiple orders at a time [2]. Menu stored electronically can be easily updated by the restaurant owner. Hence, cost of printing will be reduced [3]. Food ordering through application reduces the requirement of manual labor as simultaneous orders can be handled easily with just a single click and it also reduces the queue at the counter for billing as the bill is directly generated by application [4]. Touch screen is the latest technology and the android applications work well with it rather than the professional keypad based systems. We can use touchpad hardware for the tables and kitchen module as well [5]. Nowadays smart phones are easy to operate; hence the restaurant staff once trained about application can easily use it [6]. Regular customers can use our application to book table in advance digitally rather than using typical telephonic process. This will lead to time saving for real time food ordering [7]. Food

can be ordered digitally rather than manually by using android application [8].

II. METHODOLOGY

AGILE methodology

AGILE methodology is a practice that promotes continuous iteration of development and testing throughout the software development lifecycle of the project.

The agile software development emphasizes on four core values.

1. Individual and team interactions over processes and tools
2. Working software over comprehensive documentation
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan

BENEFITS OF USING AGILE METHODOLOGY

1. Streamlined process overhead
2. Improved quality
3. Improved predictability through better risk management
4. Improved productivity profile

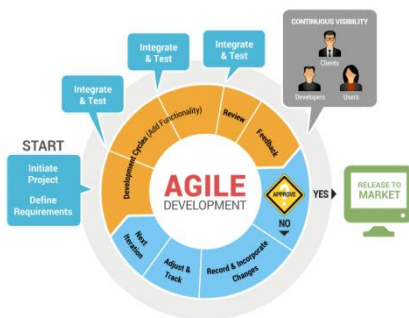


Fig. 1. Proposed Methodology

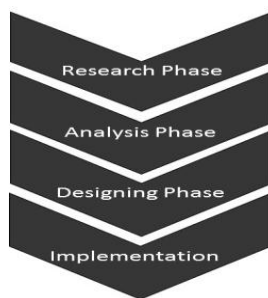


Fig. 2. Schematic Approach For Development

Fig.2. is the exemplary representation of the methodology. It consists of four phases: Research, Analysis, Designing and Implementation.

Project began with the research for the requirements of food industries for digitalization in ordering process. We analyzed the errors, drawbacks, problem statements and requirements of the current system. Designing was done accordingly so that it can be easily accessed by everyone. System was implemented after successful testing of the application.

III. PROPOSED ALGORITHM

In this system customer first orders the food from the touchpad looking at various combinations of food which is further carried to the kitchen for fulfilling the order and the same is passed for billing at the customer's tablet. Thus, the system presents an automated food ordering with real time customer feedback.

Application will perform following functions:

- Store records
- Control orders and service
- Billing
- Control staff and their shifts
- Control multiple shifts

IV. TECHNICAL SPECIFICATIONS

Technical Specifications The technologies which will be used to implement the system are:

1. Android, Php programming language is used to develop the software.
2. Android version 9.0.1 (smart phone) and Android version 8.1 – 9.0 for tablets is required.

3. Agile is used as a Rapid Application Development Tool (RAD) or as an Integrated Development Environment (IDE) for coding the software.

4. SQL is the database which will be used for database access from handheld device or the tablet.

V. SYSTEM REQUIREMENTS

Features that are needed in the application for customer are as follows:

New Order: New Order is the main feature of the customer's application that will be used to place orders.

Order Status: This feature is used to show the order status that includes order placed, order received etc.

Order History: Customer's order history is shown by this feature.

Features that are required in the website for admin are:

Menu: Menu list of restaurant is shown by this feature. Through this feature admin can also reach menu directly.

Add Menu: Admin can add additional menu regularly if needed by this feature.

Order Status: Order Status is the feature which shows the status of the order that has been completed by the restaurant.

Action: Order is active or finished is indicated by this feature.

Checkout: For generating bill admin will use this feature to generate the total bill.

VI. SYSTEM IMPLEMENTATION

The implementation of the system application is done in Android, HTML, Php and the datasets are stored in MySQL database. We have developed a web-based application and based on it we have developed a hybrid Android application using Android Studio.

The hardware required for our application includes the Android smart phone and a desktop or a laptop with browser and internet connection.

Implementation of our system consists of a real time order placing.

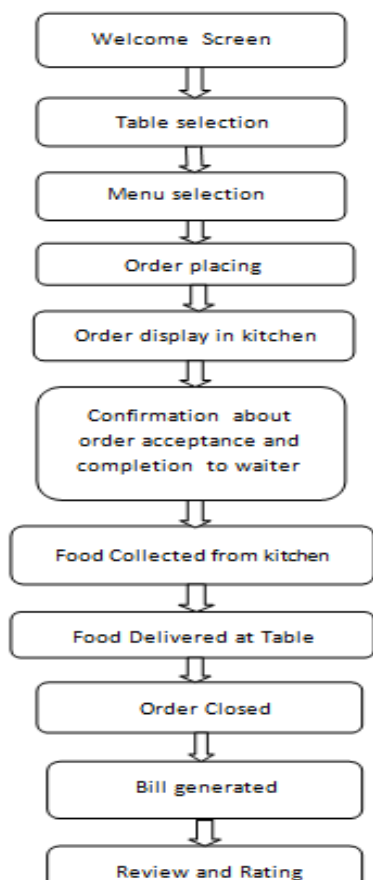


Fig. 3. Flow Chart of Our System

Fig.3. is an exemplary representation of our implemented system.

Flow chart represents the structural flow of the system step by step as how the system will perform its functions from starting of the application till the closing of the order by the admin.

VII.RESULTS

Results In our application, there were three aspects which were tested to investigate its functionality, they are

- (1) The configuration for the connection between computers at the counter and in the mobile
- (2)Connections for both the software and the system
- (3)The interface

To test the first function, hardware matter was the main subject to be taken care of. When customers send orders, the orders will first reach the machine at the counter. Then the orders will be displayed and simultaneously transmitted for display at the monitor in the kitchen. The settings were prepared, with the connection using WiFi. Fig. 3. represents the connection process between the PC as the administration end and the mobile application in the mobile for the ordering process.

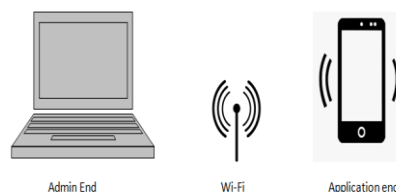


Fig.4. Basic Representation of Connection between the Admin and the Application

The settings were successful, in which the signal was received on computer and mobile. In testing the second function, where the software was the major focus, application run was successfully done. It is provided with the real images.

Features of the administration page shown below:

Fig.5. represents the successful implementation of the administration end as the various requirements are running successfully.

The administration interface includes the following components:

- Orders Table:**

Sr No	Table No	Food Items	Order Status	Action	Checkout
1	Table 4	Chicken Wings	Preparing	Refresh Order	Checkout
2	Table 3	Lemon Coriander	Preparing	Refresh Order	Checkout
3	Table 1	Veg Manchow,Lemon Coriander	Preparing	Refresh Order	Checkout
- Add Menu Form:**

Food Name:

Food price:
- Menu List Table:**

Sr No	Food Name	Food Price
1	Red Bull	120
2	Cold Drink(500 ml)	45
3	Fresh Lime Soda	30
4	Fresh Lime Water	25
5	Mixed Water	20
6	Cubab Jarum with Ice Cream	89
7	Cubab Jarum (2pcs)	39
8	Veg Egg Curry	199

Total			
Sr No	Table No	Food Items	Price
1	Table 1	Chicken Wings	224
2	Table 1	Haha Noodles(Half Full)	130
3	Table 1	Chicken Noodles(Half Full)	140
4	Table 1	Roasted papad	15
5	Table 1	Roasted papad	15
6	Table 1	Mixed Water	20
7	Table 1	Paneer Lachoni	275
8	Table 1	Golden Jaman (1pc)	30
9	Table 1	Paneer Lachoni	275
22	Table 2	Chicken hot & sour soup	120
23	Table 2	Chicken hot & sour soup	120
24	Table 2	Chicken hot & sour soup	120
25	Table 2	Chicken hot & sour soup	120
26	Table 2	Chicken hot & sour soup	120
27	Table 2	Chicken hot & sour soup	120
Total 3170			

Fig. 4. Order Status of Different Tables, Menu Update Option for Admin, Menu List,Bill on Checkout

Features of application shown below:

The mobile end which is an android application developed using android studio allows the person to choose the table and after that the menu is displayed on the mobile screen along with the prices of every food item in the menu. Customer can also provide the quantity required from the application itself. The database is recorded in the dataset as per the table number selected by the customer.

Fig.6.shows the real images of the application created as the section of our project. It represents the mobile application of our project which is running successfully. In our application, a table is booked by the captain for the customer first, then the menu is displayed. Customer can order whatever they want directly from the application and can also provide the quantity with the food item directly.

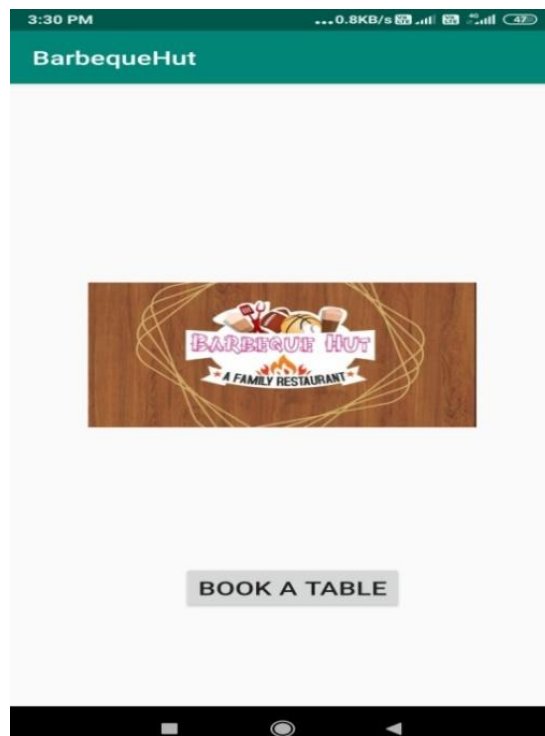


Fig.6. (a) Welcome Screen of Application



Fig.6. (b) Table Selection

Item Name	Price	Quantity	Action
Roasted papad	15	+1	ADD
Fried papad	20	+1	ADD
Masala papad	25	+1	ADD
Cream of tomato	99	+1	ADD
Lemon Coriander	99	+1	ADD
Veg Manchow	99	+1	ADD
Hot and Sour	99	+1	ADD
Cream of Mushroom	99	+1	ADD
Chicken clear Soup	120	+1	ADD
Chicken Manchow Soup	120	+1	ADD
Chicken hot & sour soup	120	+1	ADD

Fig.6. (c)Menu Card of Restaurant

VIII. CONCLUSION

This system is convenient, effective and easy thereby improving the performance of restaurant's staff. It will also provide quality of service and customer satisfaction. Overall conclusion is that, this is a fabulous food ordering system for the restaurant sector, made by combining the android and wireless technology.

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