Food Ordering Smart System

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***Abstract*—Nowadays, android technology is wide used to integrate heterogeneous systems and develop new applications. Our application highlights a number of the constraints of the traditional system. Here an application of integration of building management systems by mechanical man services technology is conferred Food Ordering System integrates numerous systems of building business like Ordering System room Order price tag (KOT), asking System, client Relationship Management system (CRM) along. The system consists of a Smartphone/tablet at the client table contains the application with all the menu details. Its PDA-based food ordering system and planned the low price bit screen primarily based eating place(restaurant) Management System via Smartphone or pill as an answer. The client tablet, and kitchen display connects directly with one another through Wi-Fi. Orders created by the customer are going to be instantly reaching the room module (Kitchen). This wireless application is easy, improves efficiency and accuracy for restaurants by saving time, reduces human errors and provides client feedback. This technique with success overcomes the drawbacks in earlier machine-driven food ordering systems and is a smaller amount big-ticket because it needs a one-time investment for gadgets. This technique will increase quality and speed of service. This technique conjointly will increase attraction of place for big vary of consumers. Implementing this technique offers a cost-efficient chance to administer your customers a customized service expertise wherever they're up to the mark selecting what they require, after they wish it - from eating to ordering to payment and feedback. We tend to implement this technique using android. The forepart is going to be developed Android studio and backend can work on SQLite Database.**

***Index Terms*—. KOT,CRM, Android Studio, SQLite Database.**

I. Introduction

In 21st Century, Computers is becoming part of our life for accessing any kind of information. With the rapid advancement in information technology, and more in Mobile application have been recently increasing .In the mobile application the advantages are it has strong user interface, power framework development, and open source any one can easily developed any application . The development of Information and Communication Technology has led to an growing number of industries to use electronic media and equivalent application for information exchange. As per in today's world of improvement everybody wants fast improvement popular their technology. One of such instance is in the Restaurant division.

In restaurant customer want fast food. They want faster service delivery. In restaurant the member of staff serving move toward, to ask customer what they want. He places Menu card in front and ask to choose the food as per customer choice. At that moment he writes on certain paper then provides that on the way to Kitchen. In some restaurant customer want to wait for member of staff serving at table to come and ask for food you want. As in 21st century customer does not has time to wait for minute, they want faster delivery as soon as possible as. Accordingly to don't waste time of customer and faster delivery as per rapid development we took come with new technology used for better experience of restaurant and for customer that is FOOD ORDERING SMART SYSTEM.

In this technology application comprises of three different applications. The first module is implemented on customer's mobile device. Through this application, customer can search for restaurants based on a specific dish, locality, price, quality of food .After choosing a restaurant, customer can view a digital menu and select items by means of check boxes. The second application is after confirming the order, the order will be display in kitchen on screen. The kitchen staff will see the details of the order, likewise he will see after which the table the order has been come. The third application is used by the managers of restaurants. Manager remains the person who controls all move in a restaurant. Manager sent notifications when a customer places order and see for payment method.

II. NEED OF FOOD ORDERING SMART SYSTEM

As technology is increasing day by day, people are attracted towards new technology. So to take advantage of technology, and attract customer in restaurant to full their Requirements. In restaurant, member of staff serving at table come to our table and writes on some paper. This involves waste of time and waste of paper. So we need such type of application through which we can order food online, which reduces hectic paper work and speed of food delivery increases. Therefore if we develop such application through which we can order food from seating on table, anywhere, anytime. As it reduces human effort, cost and save time.

III. Literature Survey

This preliminary Survey will provide us with detail description of already existing apps based on food ordering system. There are many such applications already present, but each one of them have some pros and cons.

1) The Application of Wireless Food Ordering System[1] : Advantages:-

- Using wireless technology there was easy to communicate between the PDA's and server.
- PDA is low in price.
- As it is wireless it is easy to carry it anywhere.

Disadvantages:-

- This system uses PDA as PDA based system is very slow.
- PDA based system increased the restaurants expenditures.
- PDA systems also did not provide any real time feedback from customers.
- PDA did not support images or UI of application was not attractive so customers did not attract to it.
- During the ordering process, the customers were not able to view the ordered food list from the PDA device as the screen size is rather small.
- In order for the orders to be take without errors, the customer handling the PDA devices will require comprehensive training as well as to understand how the device works.

2) Smart Ordering System via Bluetooth : Advantages:-

- It is not costly.
- Easy to use.
- Implementation is simple.

Disadvantages:-

- Bluetooth work in short range. So it is inconvenient for the customer to place order sitting at table which is not in range.
- Bluetooth can connect to multiple devices at a time but can communicate with single device at a time.
- As Bluetooth can communicate with single device at time so remaining customer had to wait to place their order.
- This also increases waiting time of customer which leads to waste of time.
- If connectivity is not done properly ,than order may be not placed.

3) E-Restaurant management system using robot: Advantages:-

- Multi-touchable dining menu using fingers.
- Food is orders and served by robots.
- No need of waiter.
- Time taken to serve the food is faster.

Disadvantages:-

- As by reading the abstract they have mention that there is two robot master and slave robot.so master will take order and will give to slave.
- There will be more time as to delivery orders in kitchen.

IV. Proposed System

To overcome the limitations of above system, we propose customizable food ordering smart system using Android based application. It is a food ordering smart system which is based on an Android devices.

Proposed system is developing by seeing some disadvantages of some existing system. The disadvantage of previous is the where using fixed menu, some system was developed via Bluetooth. Accordingly to it, the proposed system consist of Wi-Fi module as it is newest technology, the database will be online database, if there is any modifications in dishes then the restaurant manager can update it. There will be notification on mobile if any modifications are take place in restaurant. The customer can pre-order the dish from home in addition he can also reserve the table. The customer can also search the dish by name and develop the outcome for it, in available restaurant.

Fig. 1. Proposed system

A. Modules

There are two main modules in the proposed system

- Menu Selection:- User can select menu from the list of category. He can cancel the order before 15min from the order placed. User can also cancel the item before placing the confirm order.

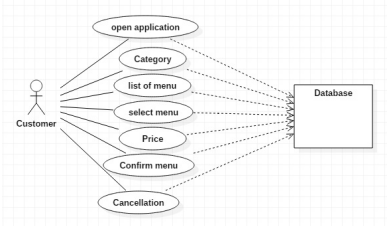

Fig. 2. Menu Selection

- After menu selection:- After confirmation of the order, will be go to manager .Manager will after the data and will pass to Kitchen, in which chef will see from where the order is placed, what is menu.

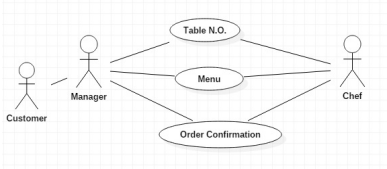

Fig. 3. After Menu Selection

- Payment:- After menu section, bill will be generated figure shows how the payment will generate.

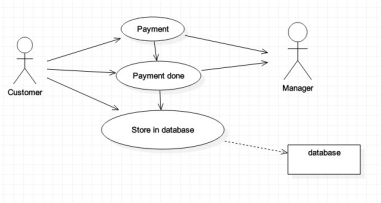

Fig. 4. Payment

V. Mathematical Model

System F =Food ordering smart system
F = {S1, S2, S3, C}
where,
S1 = Customer
S2 = Manager
S3 = Database or Server
C = Constraint

Customer
S1 = C1, C2, C3, C4
Where,
C1 = Sign Up
C2 = Menu select
C3 = Payment
C4 = Payment

Sign Up
S1 = {I, O, P, C}
Where,
I = Number of Inputs
O = Output
P = Processing
C = Constraint

I = {I1, I2, I3, I4, I5}
Where,
I1 = Name
I2 = Mobile Number
I3 = Date of Birth
I4 = Password
I5=Confirm Password

O = O1, O2, O3
Where,
O1 = OTP
O2=Login successfully
O3=Login Failed

P = database ← database {δ S (”I1”, ”I2”, ”I3”, ”I4”)}
C = {C1}
Where,
C1 = Password min. 8 character

Menu Selection
F2 = {I, O, P, C}
I = {I1, I2, I3, I4}
Where,
I=Menu selection
I1 = Beverages
I2 = Starter
I3 = Main course
I4 = Continental
O = Output
P =Process
C = Constraint
{ I1 = {I, O, P, C}
Where,
I = {cold drinks, hot drinks}
O = O1
Where,
O1 = display selected menu
P = $\prod$o1 (IΠ =null (database← database $\bigcup$ {(”cold drinks”, ”hot drink”)}))
C = input should not be null

I2 = {I, O, P, C}
Where,
I = {Punjabi dishes, South Indian}
O = {O2}
Where,
O2 = display selected menu
P = $\prod$o2 (I¬ =null (database← database $\bigcup$ {(”Punjabi dishes”, ”South Indian”)}))
C = input should not be null

I3 = {I, O, P, C}
Where,
I = {starter}
O = {O3}
Where,
O3 = {display selected menu}
P = $\prod$o3 (I¬ =null (database← database $\bigcup$ {(”Starter”)}))
C = input should not be null.
}
O = O4
Where, O4 = display selected menu.
P = $\prod$04 (I¬ =null (database← database $\bigcup$ {(”I1, I2, I3”)}))

Placed order
F3 = {I, O, P, C}
Where, I = {table no. , menu}
O = {placed ordered, order cancel}
P = Πplaced ordered, order cancel(menu¬ =null$\bigwedge$ table no. (database← database $\bigcup$ {(”table”, ”menu”)}))
C = table no. should be valid and menu selection should not be empty.

Payment

I = $\{p_type, p_details, p_amt\}$
$Where$,
$p_type = Paymenttype$
$p_details = PaymentInformation/details$
$p_amt = PaymentAmount$
$O = \{bil_gen, p_done\}$
$Where$,
$bil_gen = Billgeneration$
$p_done = Paymentdone$
δ =
Π pay$_i d, p_amt(\sigma p_type \neg =$ null $\bigwedge$ $p_details = null \bigwedge p_amt > 0(database \leftarrow$ database $\bigcup \{(p_type, p_details, p_amt)\}))$
$C = \{C1, C2\}$
$Where$,
$C1 = Amountmustbegreaterthan0.$
$C2 = Allinformationismandatoryandmustbevalid.$

Manager
M = {IM, OM, PM, C}
IM = {I1,I2 ,I3 ,I4}
where,

I1=add items
I2=delete items
I3=add prices of items

OM = OM1
Where,
OM1 = {receipt generation, updation menu, prices}
P = ΠOM1 (IM$\neg$ =null (database$\leftarrow$ database $\bigcup$ {("add items","delete items","add prices of items")}))

VI. Algorithm

Customer
1.Start
2.if new user then enter user info(name,mobile no.,date of birth ,password ,confirm password)
3.if user already exist then enter mobile no. and password.
4.view menu
5.select menu
5.1 user enter the choice (starter,sea food,Main course, Continental,beverages)
5.2 add the choice to cart
5.3 confirm order — order cancel
5.4 if new order goto 5 else goto 6
6.payment online — offline
7.collect receipt
8.rating
9.feedback
10.stop

placed order(chef)
1.start
2.view table number and menu
3.order in process
4.order completed
5.order handover from kitchen to waiter
6.stop

Payment
1.start
2.select payment type
3.if online
3.1 payment details
3.2 confirmation of cash delivered
4 else offline
4.1 payment at cash counter
5.get receipt
6.stop

Manager
1.start
2.add new items in menu and their cost
3.delete items
4.give notification
5.bill generation
6.give authentication to user
7.stop

VII. Conclusion

As the technology is getting advanced day by day, people need food fast and easy way of getting hotels and selected food.So,FOOD ORDERING SMART SYSTEM provide us all facility of getting food in time and easy to understand the people.

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