Journal of Advances and Scholarly Researches in Allied Education
Vol. 17, Issue No. 1, April-2020, ISSN 2230-7540

Mobile Computing Technology with Mobile App Based Human Interference

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Abstract – In a food ordering process, typically, multiple procedures are used to order the food in the restaurant where the client first browses the menu based on paper and then tells the waiter about the goods he has requested. Normally, before you start the operation, the consumer has to be seated. An alternative solution in respect of consumers is a "mobile -based food pre-order framework," in which customers may build the order before joining the restaurant. Smartphone customer. The saved order may be checked by tapping the smart phone if the customer enters the restaurant. The list of the preordered goods picked is shown on the kitchen screen and the order slip is printed for further processing until verified. This approach helps you to pick a pre-order transaction type for consumers quickly and conveniently.

Keywords – Device, Software Android, Wi-Fi, Android Mobile, Mobile computing, Dynamic Database.

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INTRODUCTION

Through buying food online, the product is bought and sent to the consumer online. The customer's credit card, a prepaid card, allows for reimbursement by utilising the electronic payment services. In this project, we therefore design a framework that enables consumers to order their food online. Because of the exponential development of Internet use and related technology, the site provides numerous possibilities. Too many businesses and companies are already happily active with their industry on the internet. An online food delivery system is one of the firms that have launched the internet. Today several restaurants are based rather than delivering a rich restaurant experience on fast preparations and easy fulfillment of orders. Most of these distribution requests have been put lately on the phone, although this method does present certain inconveniences. Everyone can buy any products on the internet from everywhere and get the goods shipped at home. However, the subject of emphasis on payment style is on the transfer form of products and services. In other terms, how can products and services are charged via the internet? This then relates to the economic implications of digital cash being addressed. From an economic standpoint, what are the implementations? Since the planet rapidly becomes a global society, networking, in which telecommunication is a key player, is the required method for this phase. A big innovation is the 2-phone device that is provided by either fixed wireless lines or the Global Mobile Networking System (GSM). Originally built to be used in university cafés, the online ordering framework extends similarly to every food supply industry. The biggest value of this method is that both the consumer and the restaurant are streamlined by the purchasing phase. By putting full orders, the load on the end of restaurants is immediately reduced. Once an order is putting in the website which is built, a desktop programme on the restaurants can be put into the servers and eventually recovered in reasonably real-time. Both products in the order with their related choices and shipping information will be provided in this application in a concisely readable way. This helps restaurant staff to move orders efficiently and deliver the appropriate products with reduced time and uncertainty. FLEXIBILITY is the biggest advantage of this method.

The underlying challenge in the industry of food services is that restaurants do not obtain efficiencies that arise from enhanced technical technologies in everyday operations. The former food ordering method was absolutely a manual operation involving waiters, pen and paper. Customer orders had to be registered by the waiter, these orders had to be put in the restaurant, recorded updated and again paid. Although this method is clear, human mistakes may be involved with documenting the instructions. There are many explanations for the feeling of disappointment, including the reality that the waiter takes order late and meals are delivered. In this paper the multi-touchable restaurant management framework to simplify food commanding is proposed to address this weakness in the manual system. A user-friendly touch screen, a display screen in the

kitchen and back-end applications would be accessible at the foodstuff restaurant with an integrated food ordering system. A device administrator would have the ability to access the menu at the existing rates in this system. The device administrator may insert an object or adjust its price at any time with a protected system password to modify the menu contents. Now that customers join the restaurant, the customers can order from the option of menu products, confirm order and see deals, utilising the touchscreen with the intuitive graphical user interface. According to his preference, the client will choose from the food choices, and the machine will display the consumer payment number after the order is filled.

There are several Android apps in the market today. However, mobile ordering services are only seen for few apps. This mobile order allows consumers to put an order via a mobile phone and either get their goods via the place or they are directly shipped to their house. Via this mobile service device, consumers can conveniently buy and do not hesitate before they head to the shop. It saves consumers time and travel costs. In this report, a review was carried out before the Android mobile ordering system framework for electronic goods and components was developed. This app will allow consumers to buy computer goods and parts in the future. Often people find electronic shops challenging and they should download the application to buy their order to solve this issue.

Aware of mobile computing

In the field of mobile and computer science, many early studies on context-aware computing or spatial knowledge have been referred to as context, the position of individuals and artefacts in a number of fields including Mobile and computer, person oriented computing and environmental intelligence. In addition, temporal details, environmental identification information of consumers or the social meaning as contexts for various uses are taken into consideration. In. Schilit et al. 's argument that the key facets of the setting are I where you are, (ii) who you are with and (iii) whatever services are nearby. The status of the knowledge concerning the applications is often taken as contexts. Dey et al. describe the context that might be the most commonly known. As Dey et al. have said. "To describe an object, context is any detail that can be used. An entity is a person, place, or object that is deemed to be important for the interaction of the user and the application itself.' We may often establish meaning in order to tailor the useful actions to a particular form of information.

Based on the above described contextual knowledge, context consciousness may be the spirit of computation. Context-awareness usually has adaptation potential in mobile apps and the context-awareness machine implies the physical world outside the applications and may change device actions. In this context, we are not conscious of the scenario. Context-consciousness thus clearly reveals the complex essence of the applications. In mobile applications the usage of contextual knowledge is thereby able to minimise the amount of human efforts and attention required to deliver functionality centred on consumers' desires or desires in a computer-driven setting. Various forms of contexts can have a different effect on apps addressed shortly in our previous article, Sarker et al.

Characteristics in smart applications

Intelligent applications have tailored and flexible consumer interfaces with main elements of artificial intelligence, the Internet of Things and data analytics. On this basis, we have summarised the features of smart apps for supporting mobile users in their everyday work.

- **Smart apps'** key advantage is that these apps don't hesitate before the consumers will determine in a number of cases. Instead, programmes may analyse consumer conduct through the power of predictive analysis to have customized and workable outcomes.
- **Adaptive in design:** adaptive in nature applications can be adaptive. The application's adaptability plays a very important role for any customer. In other terms, you can quickly upgrade your expertise to your context to deliver a really satisfactory experience for consumers.
- **Suggestive and decision-focused:** Advice and decision making may be a fascinating property of an intelligent programme according to needs and desires of the consumer. Such recommendations will differ amongst users based on their preferences and allow the users to determine what suits them better.
- **Data-driven:** the provision of data-driven performance is one of the most critical tasks of a smart programme. Intelligent applications collect knowledge from a range of channels such as online, user engagement or sensors, etc. that are important to the target programme.
- **Context knowledge:** Context awareness means an application's capacity to at any moment acquire details regarding the surroundings and change behaviours. It allows the applications much wiser by taking consumer contexts and the context of the device into consideration and

provides extremely applicable knowledge and feedback proactively.

- **Service on a cross-platform:** The app must therefore be able to recognise and process the intended performance in such a manner that the use of cross-platform work experiences the same.

The abovementioned characteristics of mobile apps which can intelligently support customers in their different daily activities are taken into account in this report. In the next one we explore the idea of mobile data science and AI that can help accomplish the aim momentarily. Focused on those characteristics.

LITERATURE REVIEW

There are a few Android apps that are actually used to purchase electronic goods. Any records ought to be checked for details about the latest application. As the smartphone electronic goods and parts ordering programme is not yet accessible on the market, the food ordering application framework has been tested. First post was a wireless restaurant ordering device on an Android phone. The consistency and level of service is improved by this ordering method. It would encourage consumers to come and dine by growing the efficiency of the restaurant service. In the future, clients can still please themselves and still frequent the restaurant. This device therefore reduced the waiting period of the client. Customers don't have to wait for waiters to come and pay. The restaurant offers tablets for ordering by selecting the products from the graphical interface which have been created. The order is guided directly to the Kitchen and the order enters the Customer table as requested. The tablet also gave consumer reviews. This will offer restaurant owners an idea to develop their restaurant services constantly by improving the standard (CQI). Every menu requires estimated time to produce an order. In the food list. The consumer may also be conscious of the specific timing of the food delivery. The information for products would also be transferred to the payment table. Wireless food ordering system implementation was the second document. This device minimised time to wait and human mistakes. Using conventional approaches that contribute to a mistake when ordering a sheet of paper. The most popular mistake was that waiters made a wrong order and after their visit customers would not be happy with their service. The restaurant owner opted to use a PDA to create an order in order to prevent this dilemma. Each waiter is followed by a PDA unit. To substitute documents, the PDA system is used. It goes right to the kitchen and to the cashier after the orders have been made. This saves waiters time for kitchens and returners to the table for orders to be sent. Because of the network used for transferring the records, the order is simpler for kitchens and cashiers. The third journal was on wireless dining in restaurants utilising Android Tablet concept and implementation. The software used wireless networking with this Android. The restaurant's performance and precision were enhanced by this method. If no failure happens, the delivery period would therefore be quicker. This method eliminates the human error and therefore offers input from consumers. This system requires Android tablets to order. The method of ordering is similar to the first day, the consumer can request the food on the tablet and the order specifics are submitted to the cashier. The device preserves item information through the network in the database. The wireless networking has three big areas: tablet, kitchen and cashier. The link is the most significant. This approach is simpler than the PDA scheme and the multilingual system[3]. This Android device ordering method The journal in Forth dealt with the food ordering method with consumer reviews in real time. This device fits for Android on the Android devices. The PDA and multi-touchable ordering method are more efficient and less costly. This programme must be activated on the devices by the customer and can be requested by utilising the application. This device blends wireless technologies with Android[4]. Customers are expected to log into the system so only the order can be created. By that way, if the consumer takes his order late, the restaurant owner may still quickly notify the customer. This device would even give the application the order status. Through utilising this programme, consumers are informed of their status of order and may buy their items once they have done so. This saves time for consumers to get groceries. [4] Multifunctional restaurant system was the last journal. The device worked for the website. This device allows the purchasing of consumers in peak hours. Clients may not have to wait in the restaurant to position their order. This device would also save time for consumers. At each dining table, consumers will create an order from their table with this multi-touchable system [5]. This method will also reduce the cost of employment, so owners don't have to recruit enough employees to operate their restaurants. With this method, only food in the restaurant is needed. The level of service also improved with this multi-touchable device. For consumers as well as restaurant operators, this was more formal and convenient [5]. The new technologies from the web-based framework also using Android smart phone device to buy goods. The first online shopping method began using the internet, then switched into a PDA system and can eventually be accessed by application on Android smart phones. If the structure progresses, the facilities in the system are often enhanced.

Existing Food Order Process

1) **FULL SERVICE RESTAURANT:** The conventional method of ordering food is used in most restaurants with full-service facilities. This starts when a waiter takes the paper-based menu of the customers. Usually, customers in the restaurant and a

server have to aid with the ordering method. The traditional paper-based scheme is one of the most widely-used food ordering system. Both papers are kept on paper in this framework. papers will quickly be misplaced or destroyed as the biggest downside of this method. Cash, time and paper are often lost. There is no dynamicity of paper-based processes. Just a little adjustment requires the whole menu card to be re-printed. A lot of human intervention is still required, the machine is not operating correctly and it is a failure because it is time consuming from the point of view of the consumer.

2) **RESTAURANT SELF SERVICE:** this allowed the customers to order in the restaurant's service counter. Before viewing the products in the menu at the register, the consumers must make a choice in advance. The menu catalogue is typically displayed as posters behind the order counter.

3) **ELECTRONIC FOOD ORDERING SYSTEM:** few restaurants have invested in the automation framework to minimise service costs and increase the consumer experience. The automation method for the gathering of food orders from visitors varied in several various ways, but consisting mainly of an electronic interface with a view of the menu and recognises the user's ordering details from the First Waiter. If the order is taken, waiter can type in the device in which PC has been set up. The details on the kitchen were seen on the projector. The kitchen workers will then prepare the dishes by request and notify the waiter who received and served the dishes to the respective tables after order completion. In addition, the machine told the waiter of a dish available. If no dish was present, waiter may request adjustments or even cancel the order of the customer. After the order was completed, the bill was produced by the client at the cash counter. The administration had total authority to view all consumer information supplied by the system. Different systems were introduced on the market for computerization of the food ordering system with advancements in digital and communication technologies. The below are some of the current systems:

DIGITAL PDA SYSTEM:

Various wireless solutions such as WOS, FIWOS and I have been developed in order to implement modern technology and methods to simplify food ordering. The structures above were all focused on PDA. PDA systems are the main element in the purchasing process of consumers and waiters. Wireless connectivity was simpler between the PDA and the server utilising wireless technologies. But there were many limitations to the method based on PDA. The method focused on PDA has raised the prices of restaurants. Often, PDA systems did not provide consumers with real-time input. In PDA's menu cards were not enticing and uninforming because photos were not sponsored.

MULTITOUCH TECHNOLOGY:

Multi-touch technology is an improved version of current touch technology where the usage of several finger triggers enables consumer to monitor and execute operations simultaneously on the electronic visual displays. Wide screens such as the tabletop and wall panel are considered crucial when working with several people with the same monitor for knowledge visualisation. The social connexion between users is stated to be strongly enhanced by a shared display and feedback. However, the multi-touchable restaurant control solutions have some drawbacks. There are capacitive, resistive forms available on the market that is very expensive. Ability touchscreen constraints cannot interact with stylus unless it is conductive. The capacitive touch screen is another disadvantage: it's costly, less robust and shorter lives. The inconveniences of the resistive touch screen include their reluctance to endorse movements in multiples, their low illumination in intense sun and their decreased longevity. The procedure may be vulnerable to data noise; vast volumes of soil and dust could impact the surroundings.

In order to address the above system's shortcomings, we suggest a web-based online ordering system. It's an Android powered wireless food ordering system. The general and company consumers of Android mobile phones draw. Android smartphones have achieved significant interest in wireless automation and have a revolutionary application of mobile technologies. For handheld devices like smartphones, laptops, Android is a Linux optimised OS. Motivated by Android mobile health operating systems and other apps, we demonstrate the usage of Android devices in business applications, including the restaurants food ordering framework. Position Related services utilising Android operating systems Taking account of the bright future of the Android industry, applications for android that target crowd are useful and worthwhile.

OBJECTIVES OF THE STUDY

- Create plans for consumer reviews to include a way to evaluate their operation for the restaurant.
- Merging wireless and android operating systems to improve the purchasing phase of goods.

SYSTEM ARCHITETURE

Figure1 demonstrates the device design of the personalised web-based ordering system for foods. In the design, the server, the kitchen and the cashing counter are the three big areas of the restaurant. This framework is designed conceptually using the following components:

- Android is used for producing tablet orders.
- The Laptop / tablet restaurant owner keeps track of consumer details and often uses server programme to modify the menu.
- For restaurant owners the central archive is used for the saving of revised menu and purchasing information.
- Wireless infrastructure links three major areas of the restaurant.
- The Android software is used to locate a latitude and longitude spot of the restaurant.

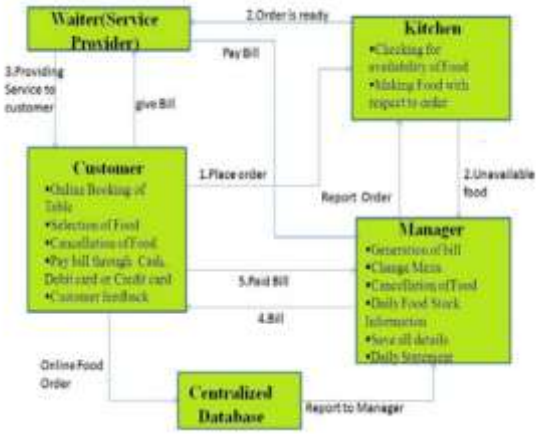

Fig 1: System Architecture

SYSTEM MODULES AND SYSTEM DESIGN

The owner or manager of the restaurant has the power to log in and change the menu according to available food. The boss would also reveal the different deals of the day. The boss adds numerous nutritional categories dynamically. Upon arrival at the restaurant, the consumer has to pick from the tablet details and menu and submit the order through the wireless network to the machine. The customer tablet or machine would send the restaurant manager or owner and the kitchen workers requested lists. The owner of the restaurant will change the order status. The client is therefore allowed to view the status of the order and to cancel the order. It is now possible to load and hold the whole programme accessible on tablets on the tables. The restaurant's customer books the table or him orders from his mobile outside of the restaurant. The application's logging off or shutdown function would stay unavailable, ensuring that consumers cannot turn off the application and do any other activities on the tablets. After the food is served, consumers can make purchases electronically or in cash and provide reviews on the restaurant system. For submitting massage about next deals, the customer contact number will be stored in the folder. There are 3 key modules in this project:

1) **Consumer Tablet (module 1)** the tablets in this form are specifically built for daily restaurant users. After registration the first consumer has to do the registration, then the password and the name of the person will be recorded and then he / she will request the procedure. The tablets are composed of the restaurant's whole meal. The menu items for these tablet forms cannot be edited. The customer has to insert a pin code during the registration process. The customer may order any branch of restaurant with pin code from any area. You should use the Wi-Fi internet service. All roles can be managed and controlled efficiently by the consumer of every layer of the business.

2) **MANAGER's Tablet (module 2**) The desktops are for use particularly for the restaurant manager (module 2). The manager must be enabled from one single desktop / tablet to oversee the activity of the entire restaurant. He should be able to navigate every tablet and make menu adjustments. It may even alter or uninstall a certain item's price that isn't available at the moment.

3) **SMS Integration (module 3)** the phone number and other details must be registered in a database at the moment of enrollment. If a bid occurs in the restaurant, the server can send SMS to the client immediately.

4) **MENU Suggestion**-We provide a consumer with the menu recommendation, like if the customer requested a menu, our framework would then view similar menus.

5) **Consumer Reviews** Consumers are often given with feedback on restaurant facilities.

6) **REPORT GENERATION** Method produces regular, weekly and monthly report of the system.

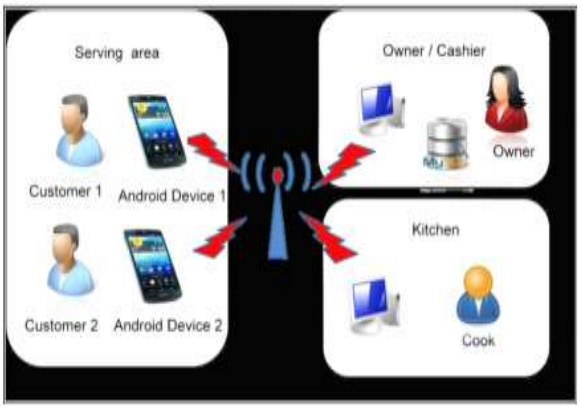

Fig 2:-Modules

SYSTEM TECHNOLOGY

The hardware used to introduce the framework is:

1. Web production Visual Studio 2010

2. Tablets need Android update 2.2 or longer. To build this programme, we have used Android 4.2 Jellybean as our work platform.

3. SQL 2008 is a lightweight database that can be used for tablet database access.

CONCLUSION

This paper describes the few strategies for making online transactions. Web-based system, PDA system, Ios tablet and Android Mobile device are the most popular approaches utilised for today's systems. The goal is to buy electronic goods on smartphones using the Android app. The device can also be updated to make it simpler for consumers to order products. Add multi-button features, and the programme often advises connecting to some websites. In this post, we introduced customers to a digital restaurant and inter-restaurant navigation utilising smartphones. We use smartphones or tablets to include the interfaces required to display and order the menu rather than using PDAs to communicate with customers. Customers can imagine and order for private login programmes, obtain alerts in real time and capture receipts straight from their mobile. It offers consumers the ability to access restaurant locations or instructions and often permits restaurant owners to automatically handle consumer orders once they log in to the device. Our experience with digital restaurants and restaurant navigation through mobile phones demonstrates wireless and smartphone technology capabilities to accomplish and enhance management and service provision of businesses. This device is relaxed, reliable and simple to enhance restaurant staff efficiency.

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