

Talabk Lebaitak Order Delivery Mobile Application

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Abstract:

Fast advancements in innovation have empowered the utilization of mobile phones application in many various industries such as health, education, food, business, sales and service, and many more. These applications have directly contributed to the increase of user purchasing things through online medium. "TalabkLebaitak" is a delivery company located in Jeddah, Saudi Arabia. The main problem facing the company is that it does not have a proper system for storing customer information and managing its orders. Therefore, this work was done to design and implement order delivery mobile application for TalabkLebaitak company. In this work, the order delivery mobile application was designed to have two active actors, which is the user/customer and the admin. For the user/customer, the mobile application user case involves creating account, log in, placing order and checkout. Likewise, for the admin, the mobile application user case involves viewing order, assigning order, approving or rejecting order, managing order status, displaying blacklist and generating report. For this work, Balsamiq Mockups desktop software was used to design the order delivery application. The test result showed that the order delivery application was successful at each use case and scenario.

Keywords: Delivery, mobile application, company, Saudi Arabia

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INTRODUCTION

Mobile applications running on smartphones are very prevalent because it is heading towards an upheaval in the information technology industry[1]. The mobile application consists of different source codes to control the microchip, its hardware and its application. Portable smartphone applications incorporate different programming that uses

versatile application programming interface (API)[2]. In most created nations, cell phone infiltration rates have come to more than 100 percent for each capita, with people regularly owning more than one cell phone [3].

These improvements have led to a wide range of smartphone applications for the smartphone operating system provided by the leading

smartphone manufacturer, which are based on the Apple operating system and the Google operating system [4]. A smartphone application is an IT programming antique that is explicitly designed for a cell phone operating system that is available on handheld gadgets. These mobile applications are either pre-installed on cell phones or can be downloaded from app stores [5]. Furthermore, as the smartphone system continues to grow over time, customers assume that their cell gadgets will work almost like personal computers [6]. In spite of the fact that the smartphone application advancement practice is much similar to that of programming of computer related software, it likewise includes some different prerequisites for which the ordinary programming improvement procedure must be adjusted [6].

Advances in smartphone innovation have empowered a wide scope of mobile application to be built up that can be utilized by individuals [7]. There are various studies reported on the development of mobile applications. The work of Tregarthen et al. [8] presented the development of a mobile application that can be used by individuals to monitor eating habits. The findings of their work have shown that the mobile application has been successful in identifying eating habits and disorders, while the mobile application has also recommended suggestions for overcoming these habits to its users. Pauwels et al. [9] demonstrated a work that designed a mobile application to help people cope with suicidal feelings. This application was designed to give positive motivation to users who feel very stressful about their living conditions. The outcome of their work has shown that the mobile app has helped to reduce the sense of suicidal intent among its users. The work of Pongnumkul et al. [10] reported the availability of mobile applications to monitor plant growth in agriculture. The findings of their work have shown that farmers have used mobile applications to monitor the outcome of their crops and have seen an improvement in crop yield

compared to those who did not use in mobile applications for their agriculture activity. Baysari and Westbrook [11] have developed a mobile patient care coordination application. The outcome of their work has shown that patients have experienced improved service and care coordination through the use of a mobile development application. Haskins et al. [12] reviewed the efficiency of mobile application to monitor and reduce smoking habit among individuals and found that various health practitioners have utilized mobile app's as tool to combat smoking habits among their patients. The work of Lee [13] showed that various mobile application have been developed for food delivery and found that leading food franchise have utilized these app's for enhanced business growth.

"TalabkLebaitak" is a delivery company located in Jeddah, Saudi Arabia. They provide the customer with a delivery service. The company needs an ordering system to integrate its customer information with its order. This is required to make it easier for customers to place orders and to browse different order categories. However, at present, there is a lack of a reliable, integrated and organized system for linking orders to databases and payments. Therefore, this work was done to develop a mobile application that provides an order delivery system for TalabkLebaitak Company.

1. SYSTEM ANALYSIS

1.1 User Characteristics

The user is expected to have a smartphone or tablet to download the application, as well as an Internet connection to send the order and receive the confirmation. The application will have a simple interface so that users can easily get to know it. The admin should be active and know how to handle the work pressure and be fully aware of the application functions and accept orders all the time

1.2 Functional and Non Functional Requirement

The functional requirement for the mobile application is stated as follow. The user needs to install the application on their mobile device. The user needs to enter the required information to create a new account. The system saves the entered data and validates the user information. The user needs to select one of the categories to place the order. The system displays all the categories and sub categories that are available. The user needs to checkout to end the order session and the system will prompt the user to complete their information. The mobile application will also need to manage the order status and generate the report. Furthermore, in terms of the user interface, it should be in English as it is a universal language. Likewise, in terms of the software interface, the mobile application will run on all operating system. The application is designed to work with the latest application programming interface (API) and compatibility is guaranteed for all operating system.

The non functional requirement of the mobile application is stated as follow. The application will be on a smartphone. The application must be user-friendly and clear. Since there will be a credit card payment option, there should be a high level of security, and at least 99 % of the time should be reliable and available. In terms of responsiveness, the app must be ready to respond to the input of the user. In terms of security, all users are required to have an account and to register for any order in the application. Thus, only admins should have access to user data, orders and editing. The back-end servers of the application shall never display the password of the customer. The customer's password may be reset, but it will never be shown.

1.3 User Cases

TalabkLebaitk order delivery mobile application has two active actors, which is the user/customer and the admin as shown in Figure 1.

The user downloads the company's mobile application via the Internet and registers with the ordering system. The admin shall receive the order of the user with their information. The user/customer has the following sets of use cases, which are create account, log in, place order and checkout. On the other hand, for the admin, they have the following sets of use cases, which are view order, assign order, approve or reject order, manage order status, display blacklist and generate report.

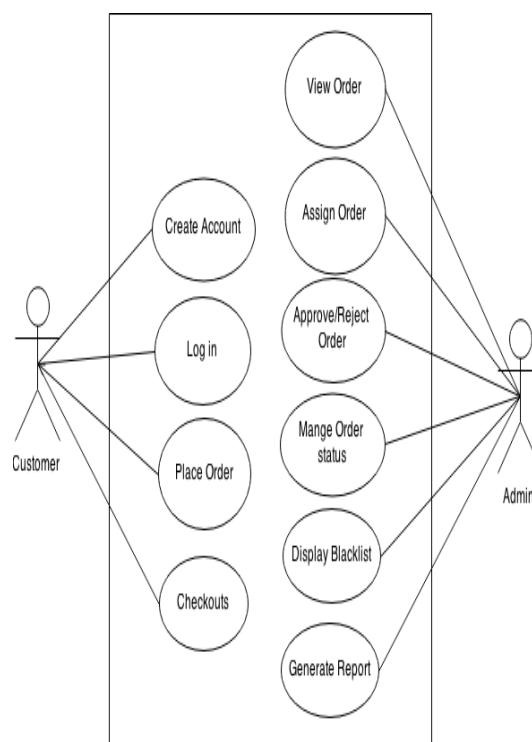


Figure 1. Use case of the mobile application system

1.4 Mobile App Sitemap and Website Sitemap

Figure 2 shows the mobile app sitemap. Based on Figure 2, it is observed that the mobile application is comprised of home page, about page, order page, contact page, and shopping cart. Under the home page, there is the login page and register page. Under the order page, there is categories page which is further divided into few subsection, which are food, grocery, gifts, shopping, stationary and others.

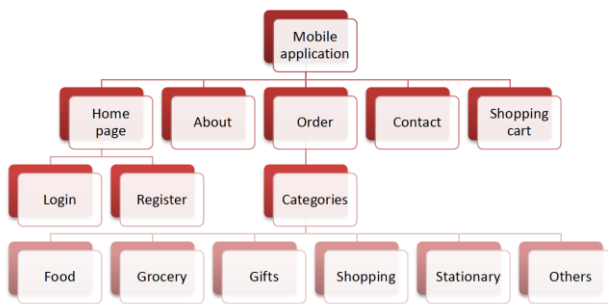


Figure 2. Application Sitemap

Figure 3 shows website sitemap. Based on Figure 3, the home page is comprised of four division, which are order details, blacklist page, about page and contact page.

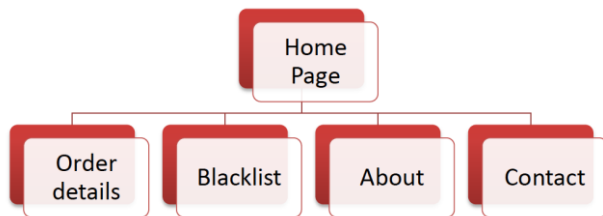


Figure 3. Website sitemap

2. PROTOTYPE

The design of the prototype interface includes the design of the mobile application, the graphical user interface and how the user interacts with the application. Balsamiq Mockups desktop software was used to design the order delivery application prototype as shown in Figure 4 to Figure 7.



Figure 4. Application interface



Figure 5. Register interface



Figure 6. Login interface

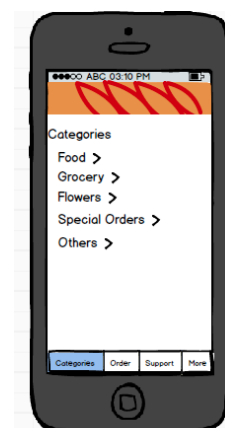


Figure 7. Categories interface

3. IMPLEMENTATION AND TESTING

Figure 8 shows the architecture of the system implementation. Based on Figure 8, for the user, the flow begins from the mobile application order database to the application server, to the web

server, internet and finally to the mobile application. As for the admin, the flow begins from the system database, to the application server, to the web server, internet and to the web browser. The overall flow for both admin and user functions in dual direction from the order database, as shown in Figure 8.

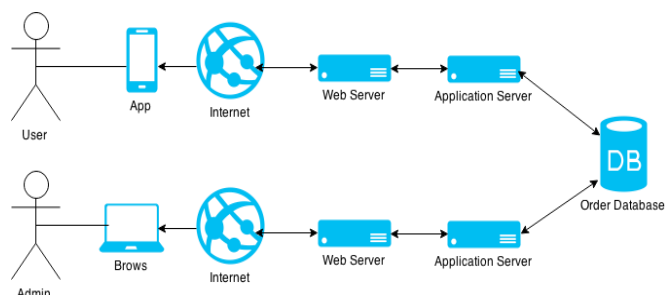


Figure 8. System Architecture

Table 1 shows the testing outcome for the order delivery mobile application. Based on Table 1, the order delivery mobile application was tested under various scenarios using the use case of create account, log in, place order, view order, approve order and order status. Each use case was testing under different scenarios and the results of the test were successful. Hence, the order delivery mobile application showed good test performances.

Table 1. Order delivery mobile application test result

Use Case	Scenario	Expected system behavior	Actual system behavior	Result
Create account	Enter Name= "Ahmed Beladi" And Email= "Abeladi@gmail.com" And Password= "MYPASS" And Phone= "0587333542"	This account can't be created because of the wrong email.	This account can't be created because of the wrong email.	Success
Create account	Enter Name= "Ahmed Beladi" And Email= "Abeladi@gmail.com" And Password=	This account is successfully created.	Access as an "Assistant" user. The system will allow	Success

	"MYPASS" And Phone= "0587333542"		this user to only create Meeting Agenda, add project and add employees	
Log in	Enter username = "PO990" And password = "MYPASS"	Access as an "Assistant" user. The system will allow this user to place orders, read about the company and contact the company thought the app	Access as an "Assistant" user. The system will allow this user to place orders, read about the company and contact the company thought the app	Success
Log in	Enter username = "Not AUser" And password = "MYPASS"	Access is not granted to user.	Access is not granted to user.	Success
Place order	Click order button, then write location, name "Patchi" and a description of the order = "1 kg of dark chocolate" then select delivery time = "Within two hours" then click add to cart	The order is successfully sent to admin	The order is successfully sent to admin	Success
Place order	Click Order button then write Location name= "Patchi" then select delivery time= "Within two hours" then	The order is not complete .	The order is not complete.	Success

	click add to cart			
View orders	Admin panel is not opening or not showing the order.	The system is not connected to the internet.	The system is not connected to the internet.	Success
View orders	Admin panel is working.	The system is connected to the internet.	The system is connected to the internet.	Success
Approve order	Admin viewed the order and did not approve.	User information is wrong or missing	User information is wrong or missing	Success
Approve order	Admin viewed the order and approved it.	User information is correct and complete	User information is correct and complete	Success
Order status	After the order is delivered admin change the order status	Has been shipped	Has been shipped	Success

4. OVERALL DISCUSSION

This study developed a mobile application that provides an order delivery system for TalabkLebaitkcompany. This order delivery application allows user to place order through the application and it enables admin to control and manage the orders. The developed application was tested under few scenarios and the test outcomes were positive and successful to the expected outcome. Thus, the mobile application will enhance and improve the order process for TalabkLebaitkCompany. This result is similar to the work of Hubert et al. [14] where it has been confirmed that shopping using mobile application has improved the overall purchase process for the customer and, from the point of view of the seller company, the mobile application has helped the company to manage the entire ordering process in

terms of order placement, payment and product delivery.

5. CONCLUSION

This work has demonstrated the development mobile application based order delivery system for TalabkLebaitkCompany. This system will enable customers to order online from any location in a well-structured database that provides fast and easy service to customer. Furthermore, the administration of TalabkLebaitkCompany will be able to manage the order efficiently and keep track of the company sales. For future works, the authors recommend to improve the interface by introducing live chat option, Arabic language interface, and Google map indicator. These improvements will encourage the application to be used on a larger scale.

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