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Mobile Application for Online Automobile Accessories Shopping System

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Abstract— *Nowadays, it is difficult to imagine any computation without the influence of mobile applications. The mobile application involves in various day-to-day activities such as online fund transfer, e-purchasing, e-billing, e-banking, etc. The emerging usage of smart mobile devices such as smart phones, laptops, tablets, etc. changes the business strategies towards improving the productivity and sales around the universe. Mobile technologies have significant influence on the individuals, organizations and society because of its smartness. Therefore, research and development of the mobile applications place a crucial role among the software development community. In that context, this paper proposes a mobile application for automobile e-shopping system to improve the services in online automobile e-business. This proposed mobile application is implemented using Java wireless toolkit and tested using various test-cases.*

Keywords— *Java mobile application, Online automated system, Mobile application development, Mobile application for online shopping system.*

I. INTRODUCTION

Mobile computing plays a significant role in various fields such as commercial, entertainment, industrial, social media, education, etc. The characteristics of computing devices are fixed and wired, mobile and wired, fixed and wireless, mobile and wireless. The importance of mobile computing increases in domains like vehicles, emergencies, and business, replacement of wired networks, location dependent services and infotainment. The importance of computing in vehicles including music, news, road condition, weather reports, and other broadcast information's are received via digital audio broadcasting with 1.5Mbits/s. In case of many emergency situations such as accident, earthquakes etc, wireless networks are the only best way of communication. The mobile computing is used in business for verifying the databases of company to track of all the activities of the employees and the customer details. The location dependent service includes follow on services, location aware services, privacy, information services etc.

Easy to operate, handy, touch screen, wireless, east to carry, anywhere access are the key advantages of mobile computing. The limitations of mobile computing are insufficient bandwidth, security standards, power consumption, transmission interference, potential health

hazards, and human interface with device. The issues in mobile computing are concerned with security, bandwidth, location intelligence, power consumptions. The rest of this paper is organized as follows: The section II discusses the literature review. The section III proposes the mobile application. Section IV discusses the implementation details. The section V concludes this paper.

II. LITERATURE REVIEW

This section presents the various research works related to the implementation of the proposed system. Muzhir et al proposed an internet billing system to pay electronically. This proposed method takes an advantage of construction of virtual banks that perform the process of banking operations. The security is provided for this proposed system by encrypted passwords using hash functions MD5, CRC32. And also, the interfaces such as system interfaces, user registration interfaces, and e-mail services are provided with this system [1]. Rathnayaka et al presented a mobile application for electricity billing system to compute the billing operations and notify consumers about their consumption. This suggested system has come up with solutions which address the problems like incorrect bills, complaints, interaction between customers and electricity board [2]. Atul M. Burker suggests the intelligent energy billing system with two-way communication which is capable of detecting tampering and fault. This model has a capability of transmitting the measured values of energy meter from customer side to a central database via a wireless channel [3]. Prashant Shende et al proposed radio frequency (RF)-based automatic meter reading (AMR) using the technology of automatically collecting data from energy meter and transferring that data to a central database for billing and/or analysis. This technology helps to overcome many problems regarding to collection of the energy meter data and the data is provided to a user on the basis of actual consumption value rather than on basis of estimate consumption value. For this model data transmission is done with the help of RF module [4].

Daniel Barbara presented a paper that deals with the impact of mobile computing in the area of data management. They first analysed each of the distinctive features of mobile computing and how they impact the implementation of databases for mobile computers, creating new opportunities for research in survey manner. Then for each of these problems they surveyed the papers in the literature in recent years. Their paper focussed on the consideration such as asymmetry in the communication, power limitations, screen size, frequent disconnections which affects the growth of mobile computing [5].

Prof. P. L. Ramteke discussed the mobile computing with wireless LAN and its modes namely ad hoc and infrastructure network. They defined the operational model of the mobile computing environment and demonstrated their proposed solutions. They dealt with the security issue that needs to be considered when the communication channel is to be set. Wireless local area network (WLAN) does not provide only the adequate security and it is inherently weak. They also discussed about various security technologies but those are not having the wide spread acceptance among the corporate infrastructures [5]. R.B. Hiware proposed the technique for prepaid and post paid scheme using SMS. GSM network is used for sending and receiving SMS. The wireless meter promises fast and accurate billing system. They suggested the system that includes energy metering IC, microcontroller which communicates to the server through GSM modem for both prepaid and post paid scheme. This paper overcomes the disadvantage of a post paid system wherein there is no control of usage from the consumer's side. And also they described the advantage of the prepaid system that the human errors in reading meters and processing bills can be reduced to a great extent.

Wireless meter can be used in residential apartments and especially for industrial consumers where bulk energy is consumed [7].

Dijiang Huang proposed the MobiCloud (Mobile Cloud) framework which uses addressing trust management, secure routing, and risk management issues in the network to enhance the communication. They also discussed the cloud computing technology to form a new environment for MANET operations in multiple service provisioning domains according to the criticality of MANET services and corresponding security requirements [8]. Dan Chalmers dealt about the QoS concepts and techniques for mobile distributed computing environments and presented a survey. The requirements of current and future mobile computing are examined and the services required to support mobility are discussed. They also provided an overview about the generic concepts of QoS specification and management. This paper also discussed about the effect of link type, movement on QoS requirements and the Restrictions of Portable Devices on QoS [9].

In Ref [10], the authors discussed about the cloud computing which provides a better and efficient network for mobile applications which revolves around the cloud platforms and cloud services. They discussed about the cloud computing challenges regarding network, mobile device, mobile applications and security. A.Vijayaraj designed the RF system having the centralized EB office that has immediate access to all consumer homes in a local network. The possibility of connecting the remote areas even in case of power failure using wireless technology is considered as the major advantage of this system. Also this system is user friendly, easy to access and far more efficient than the billing system [11]. Zohreh Sanaei proposed the paper and discussed about the heterogeneity between the mobile computing and cloud computing and they also discussed the challenges in the mobicloud computing. This paper described various platforms in which the heterogeneity issues are occurred. They also discussed about the issues based on the literature [12]. Ahmed Dheyaa Basha presented the article which discusses about the significance of mobile applications in cloud computing. They also explained the need of cloud computing and the GPMCC system [13].

III. PROPOSED WORK AND ITS IMPLEMENTATION

Figure 1 shows the flowchart representation of the proposed method. This proposed method has the provision of searching the desired items of automobile accessories and confirm the items that are required to purchase. Then the registration and login module establishes the user or customer profiles and makes the authentication to the proposed system. The item selection module calculates the price for the purchased item and directs to payment. The payment module receives the money from the customer through the net banking, debit or credit card or cash on delivery. Confirm the payment module confirms the recipients of the money from the customer or user and intimate to the customer or user. The delivery of items module receives the contact address of the user or customer and enables the shipman to reach the product to the customer or user.



Fig. 1 Flowchart representation of the proposed method

This proposed method is implemented using Java wireless toolkit environment. The sample implementation procedure is presented in the Table 1. Figure 2 shows the sample screenshot of the proposed system.

TABLE I
SAMPLE IMPLEMENTATION PROCEDURE ON JAVA WIRELESS TOOLKIT

1. Double click on the icon of Java wireless toolkit2.3.5
2. Click new project on the window
3. Enter the project name and MIDlet name as public class name
4. Enter create project
5. Write the program in notepad and save the program
6. Save the program in j2mewtk folder
7. Go to J2mewtk then 2.5.2 then apps
8. Next click on the project folder
9. Go to source folder
10. Then save the file with .java
11. Open the wireless toolkit window
12. Click on open project
13. Select the project
14. Build the project
15. Next run the project
16. The output is displayed

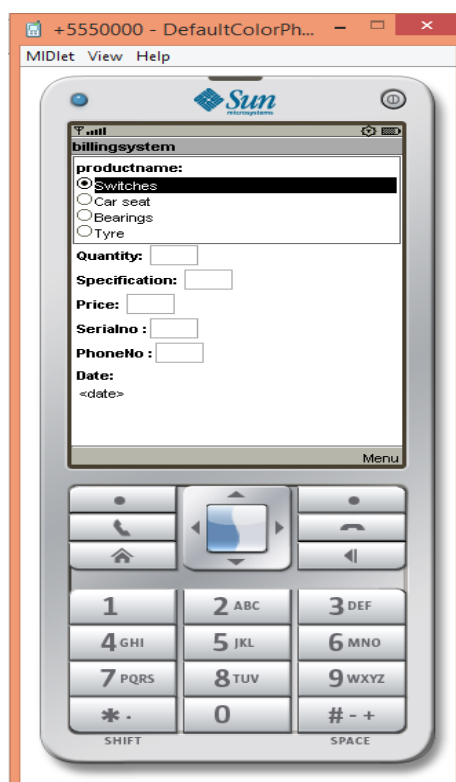


Fig. 2 Sample screenshot of proposed method

IV. CONCLUSIONS

This paper proposed a mobile application for online automobile accessories shopping system. This system consist of several modules such as search the desired items, register and login, select the needed items, make payment, net banking/ debit or credit card/cash on delivery), confirm the payment, delivery the items. This proposed system is implemented using the Java wireless toolkit environment and tested with many test cases. This proposed system can be extended with some other features by adding some interesting applications.

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