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Driving the New Wave of Mobile Innovation



i-manager's

Journal on Mobile Applications & Technologies

About the Journal

Mobile application development is the process by which application software is developed for low-power handheld devices which can be pre-installed on phones during manufacturing, downloaded by customers from various mobile software distribution platforms, or delivered as web applications using server-side or client-side processing (e.g. JavaScript) to provide an "application-like" experience within a Web browser. *i-manager's Journal on Mobile Applications and Technologies* focus on how innovative applications and technologies will change our daily lives and how it will redefine businesses across industries.

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I take immense pleasure and am extremely delighted to furnish editorial message for July-December 2018 Issue of i-manager's Journal on Mobile Applications and Technology (JMT), a peer reviewed Journal that focuses on how innovative applications and technologies will change our daily lives and how it will redefine businesses across industries. Mobile application development is the process by which application software is developed for low-power handheld devices which can be pre-installed on phones during manufacturing, downloaded by customers from various mobile software distribution platforms, or delivered as web applications using server-side or client-side processing (e.g. JavaScript) to provide an "application-like" experience within a Web browser.

In the current issue, the first paper focuses on developing an android app for Premium Motor Spirit in gas stations as the consumers of petroleum products have been experiencing a huge challenge in accessing information about the availability of the product. Next as the need to look attractive and stunning to an event or any social activity is highly demanding in the present trend, the second paper presents a mobile based appointment and scheduling management system for makeup artist. The third paper is on design and implementation of an android Nigerian recipe generating system. Food is an essential requirement for the body for the vitality, development, counteractive action of disease and repair of body cells. Fourth paper focuses on a research that examines the psychological state of mobile phone users while creating passwords. Detecting malicious application on mobile devices is a paramount task as android applications became soft targets for malware hackers. As such, the fifth paper presents the use of whale optimization technique for feature selection of permission-based feature of android applications for better classification accuracy.

I express my sincere thanks to all authors for their outstanding contributions and members of the review committee for their competent evaluation of the submissions for bringing out this Journal in its present form. I strongly assure that this journal will be beneficial to academicians, researchers and industry experts to explore in the field of mobile application and technology.



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ABOUT THE EDITOR-IN-CHIEF

Dr. M. V. Subramanyam is working as Professor in the Department of Electronics and Communication Engineering and Principal of Santhiram Engineering College since 2007. He received Doctoral degree from Jawaharlal Nehru Technological University, Hyderabad, in 2007 for his research contribution to Wireless Adhoc Networks. He has 27 years of teaching experience in Electronics and Communication Engineering. Dr. M. V. Subramanyam has authored six books, more than 161 peer-reviewed National & International Journals and Conference manuscripts. He is a senior member of IEEE and member of IETE, ISTE and IE(I). He completed seven research projects funded by various funding organizations like Institute of Engineers IE(I) and All India Council for Technical Education (AICTE). He received an Indian Patent for his contribution and novel research work entitled "A New Topology and its Management for Ad-hoc Wireless Networks" in the year 2015. He is an Editorial Board Member/ Reviewer of several National/ International reputed journals. He acted as a Chair/ Convener for several International/ National Level Conferences/ Symposiums. His research interests include Wireless Networks, Image Processing and Control Systems.

MOBILE BASED APPOINTMENT AND SCHEDULING MANAGEMENT SYSTEM FOR MAKEUP ARTIST

By

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ABSTRACT

Over the years, makeup professionals have positioned their art as a force to reckon with in the fashion industry. The need to look good, beautiful, attractive, and stunning to event or any social activity is highly demanding. In the world today if a client/customer wants to schedule an appointment with a makeup artist, they need to call in or personally go to the studio to schedule an appointment. This consumes precious time of the client also clients are unaware of the schedule of the makeup artist before going to the studio. The Android platform, a mobile application can be developed for scheduling makeup time and bridging the gap between the makeup artist and client. It provides a fast and adequate makeup service. The application is designed based on the First- Come, First-Served (FCFS) Scheduling algorithm. This application allows the client to book an appointment, pay a commitment fee of 40% through an electronic payment system. The application reduces the case of double booking and increases organization of appointment scheduling by the make up artist.

Keywords: Android, Scheduling, Fashion, Makeup, Usability.

INTRODUCTION

Over time, makeup experts have positioned their specialty in a position to contend within the fashion industry. The need to look good, beautiful, attractive and stunning to event or any social activity is highly demanding. In recent times, almost everyone engages in one form of makeup or the other in order to create an eye-catching first impression and to have a good look. The demands to look beautiful, stunning and attractive to parties, events, wedding, burial amongst other event cannot be overemphasized among people, especially by women. This prompt many individuals to look for a professional makeup artist to do a perfect and flawless makeup for them. Information gathered from questioning both makeup-artists and clients showed that clients complain a lot about the time spent in the studio or the queue you have to join waiting for the makeup artist to finish with one client before attending to

the other client. To book an appointment with the makeup artist, clients have to call or personally go to the shop to book for a particular day or time. This consumes time of the client also the client is unaware of the schedule of the makeup artist before going to the studio (office).

1. Related Study

Scheduling applications have been developed for different sectors. In (Hylton & Sankaranarayanan, 2012; Symey, Sankaranarayanan, & Sait, 2013; Choudhari, Kusurkar, Sonje, Mahajan, & Vaz, 2014; Kyambille & Kalegele, 2016; Khera, Tiwari, Singh, Ghosh, & Kumar, 2016) patient-doctor appointment booking application were developed. Osunade, Osho, and Oyebamiji (2014); Parchment and Sankaranarayanan (2013) developed an application for booking appointments between students and lecturers. From past literature, the application of scheduling makeup appointment has not been

documented.

The Android platform provides an opportunity to develop a mobile application for scheduling make up appointment. Hence the gap between the makeup artist and client to provide fast and adequate makeup service could be bridged. This paper will show the steps taken in implementing a makeup artist scheduling application with an online payment system embedded in it. The system is modeled on the First-Come, First-Served (FCFS) Scheduling algorithm of an operating system.

Nowadays, usability of mobile applications is very vital and is gaining popularity. This is due to the dramatic surge in mobile applications development (Kyambille & Kalegele, 2016; Al-Khalifa, 2014; Beul-Leusmann et al., 2014; Pitkänen, 2016; Hussain, Mkpojiogu, Musa, & Mortada, 2017; Moumane, Idri, & Abran, 2016). Usability is simply the ease with which mobile apps can be used by different users, which means effectiveness and efficiency of the system. Since many previously developed application that run on laptops and desktops are now been run using smart phone, usability of mobile device app has therefore become increasingly important as well (Hussain, Mkpojiogu, Musa, & Mortada, 2017).

This paper therefore focuses on the design of the makeup app with its usability evaluation.

2. Proposed System

The proposed makeup appointment application (Flakes Makeover) aims to enhance appointment scheduling in makeup studio by allowing client to book appointment through their mobile phones at their own convenient time. This application is designed with two interfaces, one for the client and the other for the makeup artist. Each time a client wants to book an appointment, the client launches the application and selects Book Appointment. The client provides necessary information required by selecting the desired makeup artist. A commitment fee i.e. 40% of the actual amount for the service is paid. After the successful payment by the client, transaction identification is generated for easy identification of the client on getting to the makeup studio. The makeup artist interface enables the artist to view the total appointment for the day. A notification of the appointment is sent to the client via

email and a reminder is sent six hours before appointment.

3. System Design

The system is designed with the First-Come First-Served (FCFS) Scheduling algorithm for booking of appointments by clients with the make up artist. FCFS is a scheduling algorithm that automatically executes or appoint resource based on order of user arrival (Madni, Latiff, Abdullahi, & Usman, 2017).

Figure 1 shows the use-case diagram that summarizes the involvement of actors within the system and all functional requirement of the system. The clients select book appointment, fills in information on type of make up, time with the option of choosing choice of artist to be used. The application includes a payment platform for the client to pay a commitment fee and generate an appointment/transaction identity. The view artist profile allows the clients to view the profile of all artists in the studio. The view price list specifies the list of makeup price. For the various makeup artist in the store, their various appointments can be viewed from their mobile application.

Figure 2 is a flow chart of the designed system. The flowchart shows how the clients interact with the system starting from the book appointment page down to payment confirmation page.

Figure 3 is the data flow diagram depicting the flow of data through the system and the processes performed by the system.

4. Implementation

The system was developed with Java programming language using the Android Studio environment. MySQL is the most popular open source relational SQL database management system used for developing various web based software applications (Beul-Leusmann et al., 2017). MYSQL with XAMPP server, PHP was selected as a server side scripting language to establish connections to database and sending of data to the database. The database was used to store and retrieve data that are exchanged between the actors of the system. PHP was selected as a sever side scripting language to establish connections to database and sending data to the database. HTML tags are use in formatting and structuring of the text document according to its purpose.

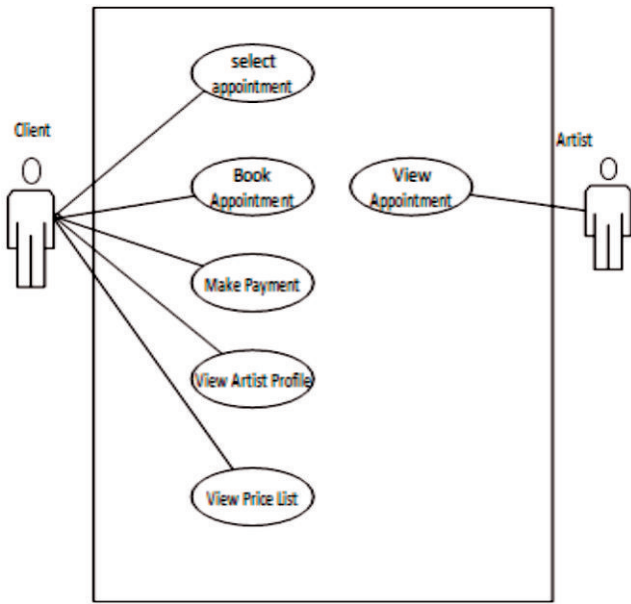


Figure 1. Use-Case Diagram of the Actors and System

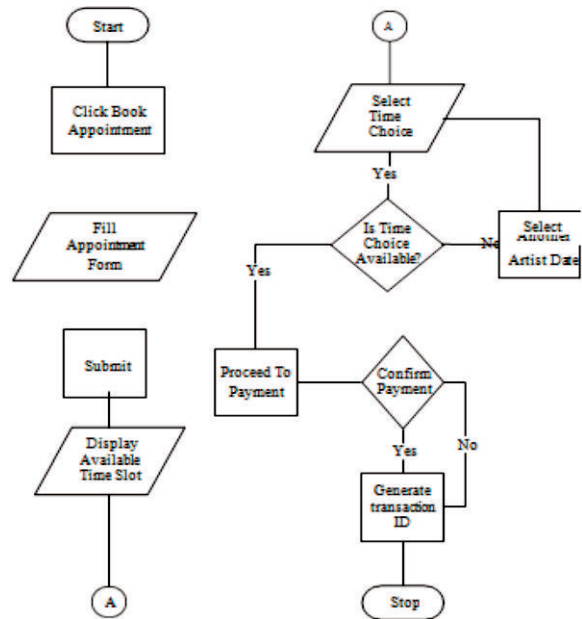


Figure 2. Flow Chart of the Operation of the System

5. Result and Discussion

In this section, the results of the appointment scheduling application using the mobile appointment scheduling system (Flakes Makeover) are discussed. The proposed application has, two different applications, one for the clients and the other for the artist. For the client app, once the Android application is initialized, there are three functionality in the Home MENU which consist of Book Appointment, View Artist Profile and Makeup Price list as

shown in Figure 4.

5.1 Flakes Makeover Main Menu

The Flakes Makeover main menu in Figure 3 shows the first page when the app is launched, it contains all other links to other pages within the app.

5.2 Registration Page

The registration page in Figure 5 was designed to allow the client fill in the necessary information about the client and

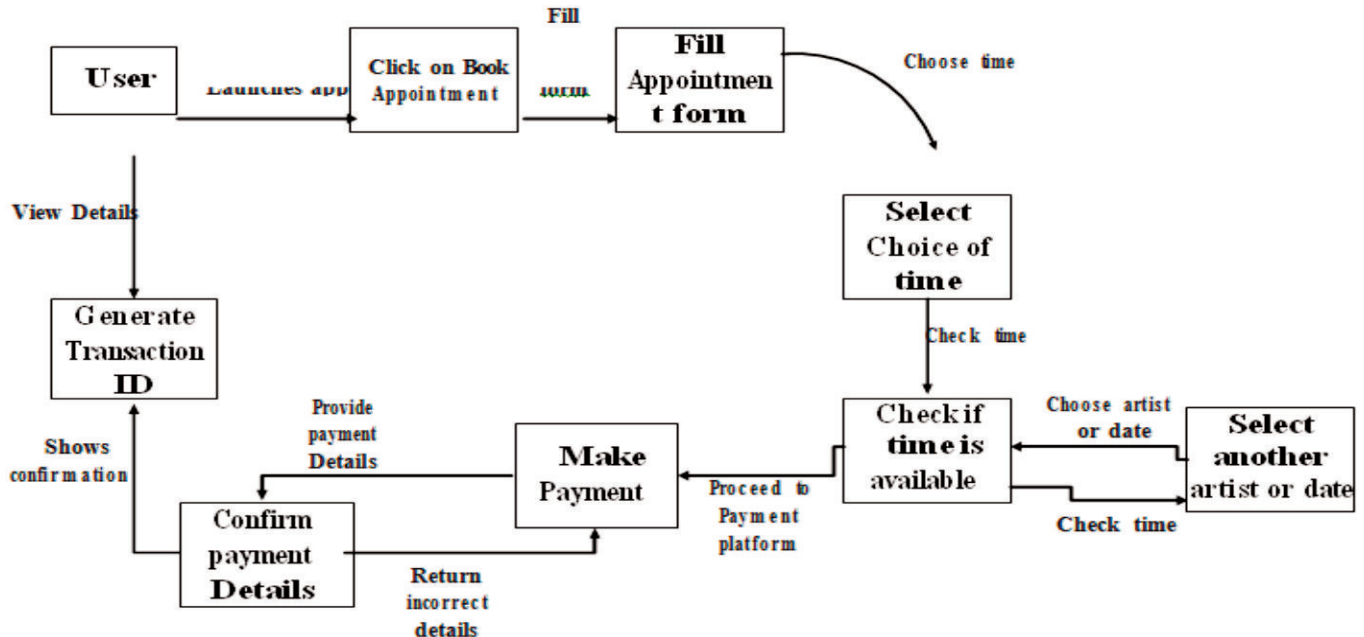


Figure 3. The Data Flow Diagram of the Flakes Makeover App

the appointment details. When the client wants to book an appointment he/she can select the name of the makeup artist he/she wants, the client can select an appointment day and the system will display the available time slot of the artist.

5.3 Times Slots

The time slot page in Figure 6 shows the entire time interval available for a particular artist, if the clients cannot get a desired time slot, he/she can either select another date or another artist.

5.4 Payment Platform

A payment platform is implemented in the application to create an easy payment means for the client. After successful payment of the commitment fees of 40%, the appointment is confirmed. Figure 7 shows the image of the successful booking.

5.5 View Artist Profile Interface

This page shows the detailed profile of each makeup artist in the studio, describing their background, years of experience and the beat face done by each. Figure 8 is a screen shot of the artist profile.

5.6 Makeup Artist Application (Admin Application)

This application was designed and developed to allow the makeup artist to view the appointment schedule. The



Figure 4. Flakes Makeover Main Menu

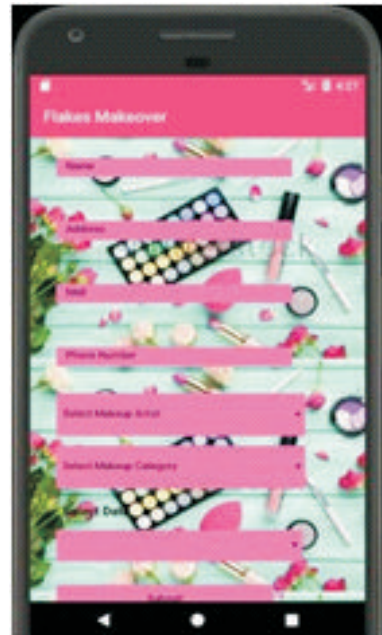


Figure 5. The Page to Fill in the Information Needed to Book Appointment

appointment is viewed by selecting the date of the appointment. Figure 9 gives a screenshot of the makeup artist application.

6. Usability Eluvation of the Proposed System

Usability is the defined as the extent to which a specified product can be used by specified users with efficiency, effectiveness and satisfaction in the specified context of



Figure 6. Display of the Available Time Slot for Appointment

use (Moumane Idri, & Abran, 2016). It is simply the ease at which users can make use of a system or product. The product may be an interface, a hardware, a website or an app. In this context, the developed make-up artist application is evaluated.

There are different approaches to evaluate usability. It can be done through inspection method (by experts), user testing method (by users), automated tools methods (by

automated software), data mining methods (by AI techniques) and Multiple-criteria decision making (MCDM) approach.

In the context of this work, the user testing approach is adopted which involves the use of real time users to test the usability of the system. In order to do this, the procedure involves selecting the task the users will perform on the app, asking the users to perform the tasks, get feedback from them based on their experience with the app via usability questionnaire and finally conduct a debriefing for them.

In the first stage, the users were selected randomly to use the app and they were told that the purpose of the evaluation which is to test the product (app) and not the users. Twenty users aged between 18 and 30 years were selected for the evaluation.

For this study four tasks were identified and are stated below.

- Select a makeup artist to consult
- Choose an appointment date
- Choose type of makeup to be done
- Check makeup price list from the list of available price list

After the performance of the task by the users using the app on an Android based mobile phone, usability questionnaire was given to them to fill in order to get usability feedback. To

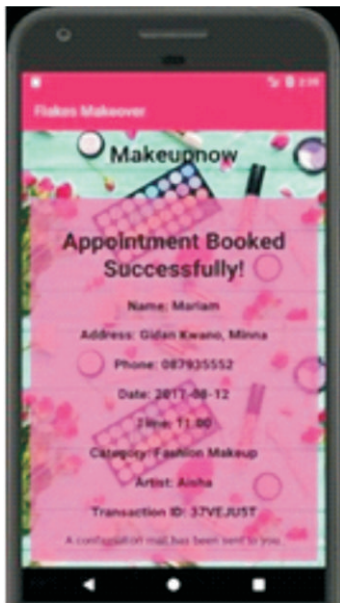


Figure 7. Successful Booking of Appointment

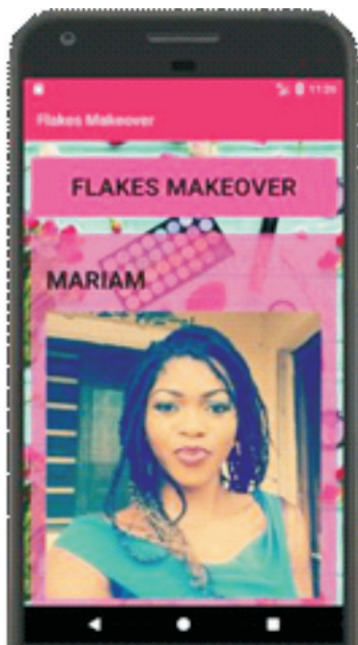


Figure 8. An Artist Profile



Figure 9. Appointment List

achieve this, a quick and dirty usability evaluation was carried out by using the System Usability Scale (SUS) developed at Digital Equipment Corporation (DEC) by British software engineer, John Brooke in 1986. SUS is a simple, ten-item scale giving a global view of subjective assessments of usability. SUS scores ranges from 1 to 100. SUS has been proved to be a valuable evaluation tool, being robust and reliable (Brooke, 1996). Some studies have employed the use of SUS (Beul-Leusmann et al., 2017; Thuseethan, Achchuthan, & Kuhanesan, 2015). The list of SUS questions for this usability test is found in Appendix A.

The result of the user response to the SUS questions is found in Appendix B. After computation, results obtained from the SUS gives a SUS score of 84.62. This shows that the application is excellent in terms of usability.

Conclusion and Further Work

Time is a universal resource to all mankind; its importance cannot be over emphasized. Scheduling appointments appropriately and resourcefully is very important for the smooth operation and good service delivery. This system is aimed at simplifying the task of scheduling appointment between the client and makeup artist. Clients and makeup artist will be more relaxed as they do not need to experience the long queue to fix their appointment and to book an appointment of their choice in a stress free manner. Also the makeup artist is able to keep track of their appointment everyday and be aware of their schedules. The clients are able to select the makeup artist of their choice from the list of the makeup artist in the studio.

In future work, the app will be tested for accessibility and further usability evaluation using other techniques. The work will further be expanded to have feedback option from client and the application will be expanded to another operating system.

References

- [1]. Al-Khalifa, H. S (2014). A framework for evaluating university mobile websites. *Online Information Review*, 38(2), 166-185.
- [2]. Beul-Leusmann, S., Samsel, C., Wiederhold, M., Krempels, K. H., Jakobs, E. M., & Ziefle, M. (2014, June). Usability evaluation of mobile passenger information systems. In *International Conference of Design, User Experience, and Usability* (pp. 217-228).
- [3]. Brooke, J. (1996). SUS: A 'Quick and Dirty' Usability Scale, *Usability Evaluation in Industry*, 189(194), 4-7.
- [4]. Choudhari, S. B., Kusrkar, C., Sonje, R., Mahajan, P., & Vaz, J. (2014). Android application for doctors appointment. *International Journal of Innovative Research in Computer and Communication Engineering*, 2(1), 2472-2474.
- [5]. Hussain, A., Mkpojiogu, E. O., Musa, J. A., & Mortada, S. (2017). A user experience evaluation of Amazon Kindle mobile application. *The 2nd International Conference on Applied Science and Technology* (Vol. 1891. No.1, pp.1-7). In AIP Conference Proceedings.
- [6]. Hylton, A., & Sankaranarayanan, S. (2012). Application of intelligent agents in hospital appointment scheduling system. *International Journal of Computer Theory and Engineering*, 4(4), 625-630.
- [7]. Khera, N., Tiwari, S., Singh, R. P., Ghosh, T., & Kumar, P. (2016). Development of android based smart home and nurse calling system for differently abled. In *5th International Conference on Wireless Networks and Embedded Systems (WECON)* (pp. 1-4).
- [8]. Kyambille, G. G., & Kalegele, K. (2016). Enhancing patient appointments scheduling that uses mobile technology. *International Journal of Computer Science and Information Security*, 13(11), 21-27.
- [9]. Lee, J., & Ware, B. (2003). *Open Source Web Development with LAMP: Using Linux, Apache, MySQL, Perl, and PHP*. Boston, MA, USA.: Addison-Wesley.
- [10]. Madni, S. H. H., Latiff, M. S. A., Abdullahi, M., & Usman, M. J. (2017). Performance comparison of heuristic algorithms for task scheduling in IaaS cloud computing environment. *PLOS One*, 12(5), e0176321.
- [11]. Moumane, K., Idri, A., & Abran, A. (2016). Usability evaluation of mobile applications using ISO 9241 and ISO 25062 standards. *SpringerPlus*, 5(1), 548.
- [12]. Osunade, O., Osho, A. J., & Oyebamiji, S. O. (2014). Android appointment manager application development with Google APIs. *Transnational Journal of Science and Technology*, 4(2), 80-92.
- [13]. Parchment, D., & Sankaranarayanan, S. (2013).

Intelligent Agent based Student-Staff Scheduling System. *International Journal of Computer Information Systems and Industrial Management Applications*, 5, 383-404.

[14]. Pitkänen, J. (2016). *Mobile application usability research: Case study of a video recording and annotation application*. (Under Graduate Thesis) Helsinki Metropolia University of Applied Sciences.

[15]. Symey, Y., Sankaranarayanan, S., & Sait, S. N. B.

(2013). Application of smart technologies for mobile patient appointment system. *International Journal of Advanced Trends in Computer Science and Engineering*, 2(4), 74-85.

[16]. Thuseethan, S., Achchuthan, S., & Kuhanesan, S. (2015). Usability Evaluation of Learning Management Systems in Sri Lankan Universities. *Global Journal of Computer Science and Technology*, 15(1).

APPENDIX A: List of System Usability Scale Questions

No	Question
1	I think I would like to use this Apps frequently
2	I found the apps unnecesarily complex
3	I thought the App was easy to use
4	I think I would need the support of a technical person to be able to use this App
5	I found the various functions in this App were well integrated
6	I thought there was too much inconsistency in this App
7	I would imagine that most people would learn to use this App very quickly
8	I found this App very cumbersome to use
9	I felt very confident using this App
10	I needed to learn a lot of things before I could get going with this App

APPENDIX B: Results from Users' Response to SUS Questions

User	Level	q1	q2	q3	q4	q5	q6	q7	q8	q9	q10
1	400	1	2	4	0	2	2	4	0	0	0
2	500	1	2	2	3	0	3	2	4	1	4
3	300	3	2	2	2	2	2	4	2	2	2
4	500	4	0	3	0	3	0	4	0	4	0
5	500	4	0	4	0	4	0	4	0	4	0
6	400	4	0	4	0	3	0	4	0	2	0
7	500	4	0	3	0	4	1	4	0	4	0
8	300	4	0	4	0	4	0	4	0	3	2
9	500	4	0	4	0	4	0	4	0	4	0
10	500	3	0	4	0	3	1	4	0	4	4
11	500	4	0	4	1	4	0	4	0	4	1
12	500	4	0	4	0	4	0	4	0	4	0
13	500	4	0	4	0	4	0	4	0	4	0
14	400	3	0	4	1	3	1	3	1	2	1
15	300	4	1	4	0	2	1	4	0	4	1
16	300	3	1	3	0	3	1	3	2	3	1
17	400	3	4	4	0	4	0	4	0	3	0
18	500	4	0	4	0	4	0	4	0	4	0
19	300	3	1	2	0	3	1	4	0	4	0
20	500	2	1	3	0	3	1	3	0	4	1

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