

# Beauty Salon Mobile Application

<sup>1</sup>Reham Asiri, <sup>2</sup>Ohoud Alshammary, <sup>3</sup>Sulafa Basahl, <sup>4</sup>Zain Balfagih

<sup>1,2,3,4</sup>College of Engineering, EFFAT University, An Nazlah Al Yamaniyyah, Jeddah, 22332, Saudi Arabia

<sup>1</sup>rasiri@effatuniversity.edu.sa, <sup>2</sup>oalshammary@effatuniversity.edu.sa,

<sup>3</sup>sbasahl@effatuniversity.edu.sa, <sup>4</sup>zbalfagih@effatuniversity.edu.sa

## Article Info

Volume 83

Page Number: 1409 - 1414

Publication Issue:

March - April 2020

## Abstract

The beauty salon is service oriented for women to improve their beauty with the treatment. Most important activities in the beauty salon such as facial make up, hair nourishment, skin care and hair cutting. In Jeddah, there are many beauty salons that provide many services such as hair styling and spa. The study was mobile salon management application with appointment scheduling functionality. This application had connected clients, salon and stylist in an online community which allowed the users to browse salon and stylist, book or cancel appointments. The salon had specified the stylist that worked in selected salon included their service. The salons also booked appointment for the customers. The application was used SDK, Java (Eclipse Juno), Arduino and 2.2 Froyo. Most use cases in this study such as account registration, login page, appointment scheduling, schedule view, add stylist, accumulated points in user account, customer review for salon and services.

## Article History

Article Received: 24 July 2019

Revised: 12 September 2019

Accepted: 15 February 2020

Publication: 14 March 2020

**Keywords:** Beauty Salon; Users; Admin; Waterfall Model; Customer

## 1. Introduction

Smart devices such as smartphones or tablets are necessary in current digital era [1]. Smart devices had several built-in sensors, including cameras and allow intuitive inputs through capacitive touch screen [2]. Smart phone had function such as media content, chat, call through VOIP, sending and receiving the data and other services [3,4].

Meanwhile, smart mobile application are software application which designed to run smart phones, tablets and personal digital assistance (PDA) [5,6]. There are many platforms installed in smartphone such as iOS, Android and Window Phone [7]. In additions, the smart mobile device was used to collect data by employing specific application (assessment tools) [8-10].

Being a salon client today is inconvenient. Keeping up with fashion these days require to go beauty salons and search for beauty with beauty specialist. In Jeddah, there are many beauty salons that provided many services such as hair styling and spa. Each beauty salon has its own system in delivering services to their clients like scheduling a reservation. Furthermore, there must good system to trace the salon's business efficiently.

Nowadays, many salons still using paper and pencil system in customer appointment and management. The study aim to develop application which helped the customers for having high services by early booking and select required services. This application reduced paper pencil systems dependence and helped the salon owner easily control their customer appointment. This mobile beauty salon app which more than online scheduler and as management tool that allow salon to manage stylist and services with promoting sales to the customers.

This mobile beauty salon app will be more than an online scheduler and be management tool that allows salon to manage stylist and services with promoting sales to the customers.

## 2. Methodology

An analysis strategy was is developed to guide team's efforts. The strategy was included a current system analysis and its problem and ways to design new system. The information was gathered through interview and questionnaires. The system concepts was used as basic to develop a set of business analysis models that described the business operated if new system were developed. The

models typically included models represented data and processes necessary to support underlying business process.

The analysis, system concept and models were combined into document called system proposal which is presented to project sponsor and other key decision makers that decided whether the project was continue to move forward.

The system proposal was initial deliverable that described business requirement with new system. System analysis was process of factual data collection, understand process involvement, identified problems and recommended feasible suggestion for system function improvement. The system involved business process, gathered operational data, information flow, bottlenecks find out and evolved solution for overcame system weakness which helped in organizational goals. System analysis also included subdividing of complex process involved entire system, data store identification and manual process.

In Figure 1, the water model was sequential process which often used in software development processes. The data was collected from different users which use in this application. The design was focused in 4 group included high level design, low level design, interface design and data design.

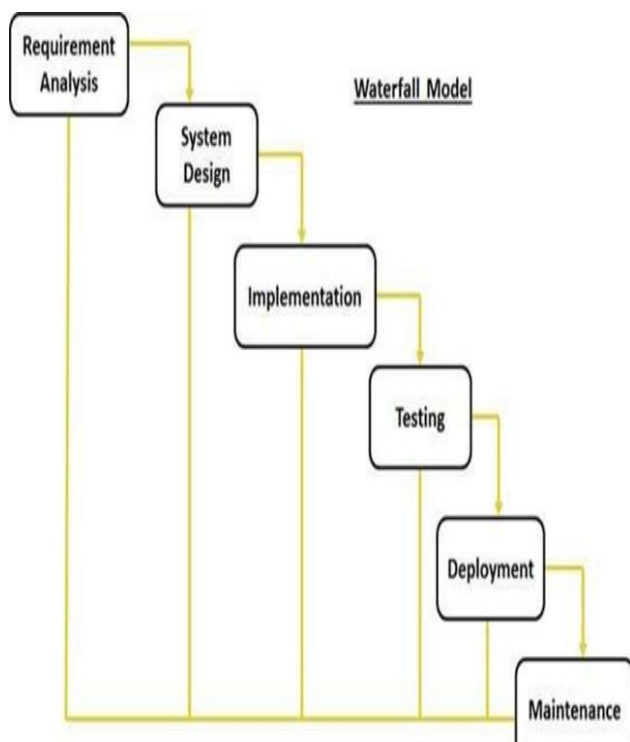


Figure 1: Waterfall model

Functional requirement were software behaviour that user want use the application. Non-functional requirements were invisible attributes that indirectly

affected users. These attributes had related with developer-side or user-side or system-side. The requirement gathering, elicitation and validation were very precious in the software development.

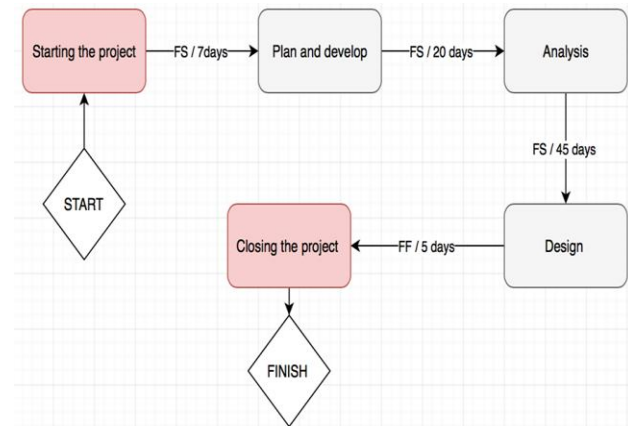


Figure 2: Schedule network diagram

In Figure 2, there were 7 days lag between completion of project start and plan with development began. Besides, there was 20 days lag between plan completion and development. There also 45 days lag between analysis and beginning of design.

In first phase, development team was assigned to gather information by searching similar system and interviews, defined current system and constraint that faced in this study. Besides, the study objectives was defined.

The requirement, specification and analysis was gathered in second phase. In third phase, UML diagram was generated based the requirement on second phase. The system was implemented at the coding side and wrote the database creation statement in fourth phase.

A use case diagram in Unified Modelling Language (UML), a type of behavioural diagram was defined by and created from a use-case analysis. The main purpose was to show the system functions were performed for the actor.

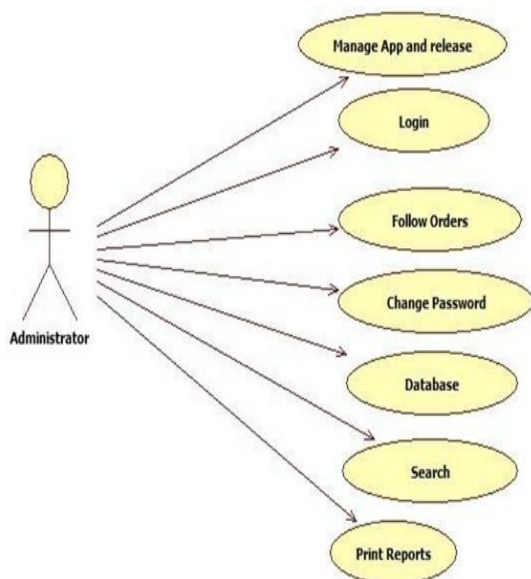


Figure 3: use case diagram for admin

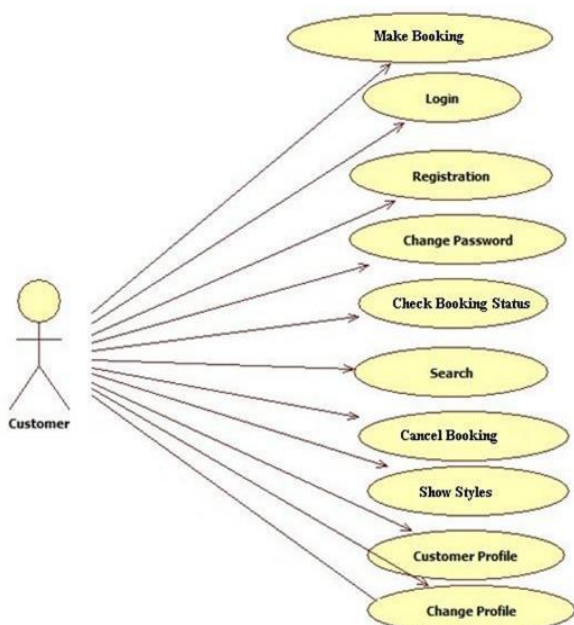


Figure 4: Use case diagram for customer

The sequence diagram was showed object interactions arranged in time sequence as shown in Figure 5. The objects and classes included scenario and message sequence exchanged between objects needed to carry out the scenario functionality.

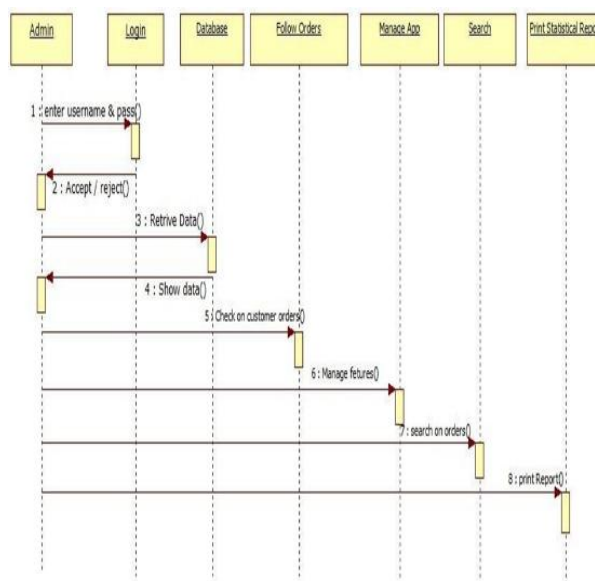


Figure 5: Sequence diagram for admin

In Figure 6, activity diagrams were graphical representations of stepwise activities workflows and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams were intended to model both computational and organizational process such as workflow. Activity diagrams showed overall flow of control.

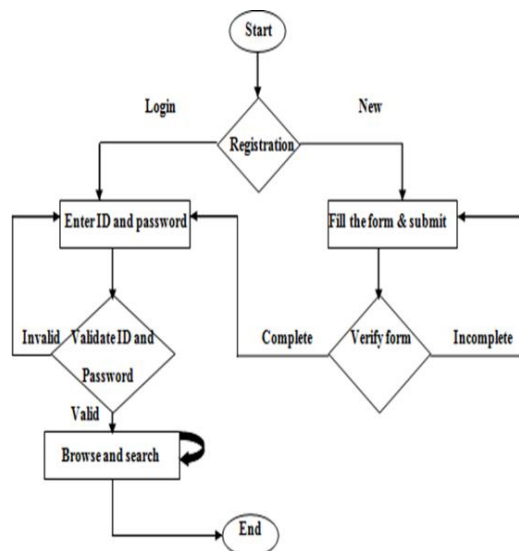


Figure 6: Activity diagram for registration

### 3. Verification and Validation

The final stage in the waterfall model was implementation phase. The system was built and tested to ensure the design was performed well. The system was installed and this process included parallel conversion approach, direct cutover approach and phase conversion strategy.

The design phase showed the system was operated such as software, hardware and network infrastructure , user interface, report, specific programs, databases and files which needed.

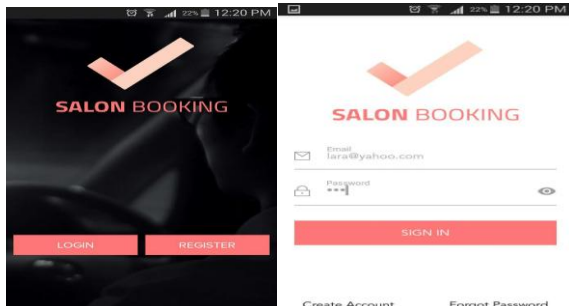


Figure 7: Beauty salon login page

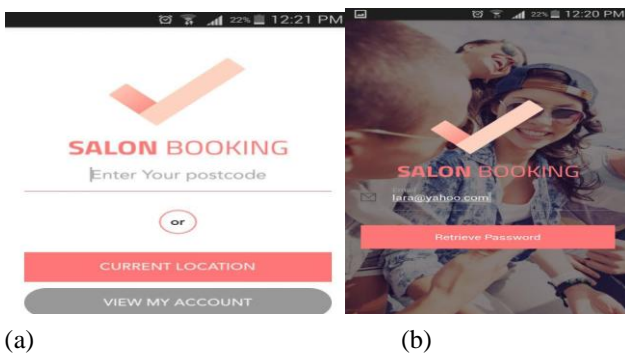


Figure 8: (a) Login using location,  
(b) forget password screen

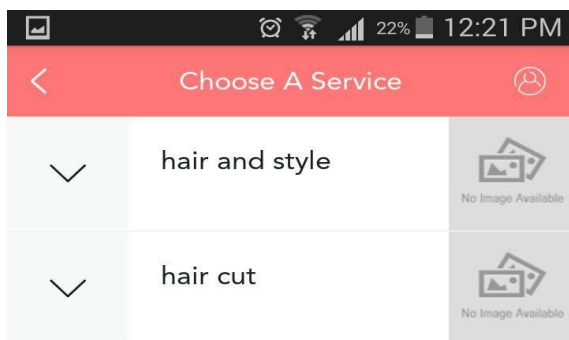


Figure 9: The customer had choice to select the service

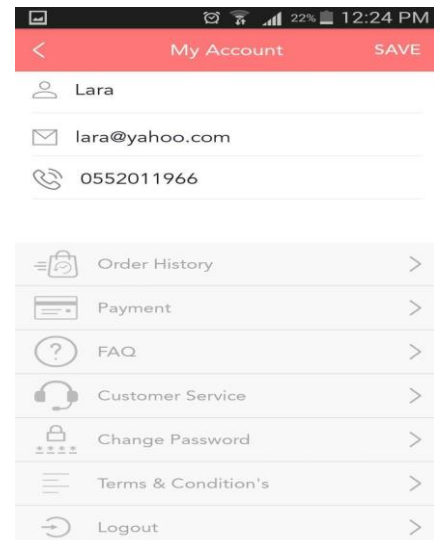


Figure 10: Customer account

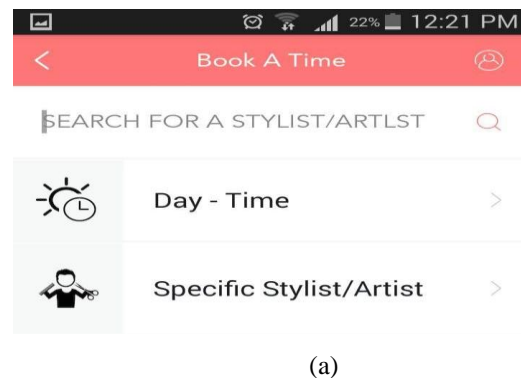


Figure 11: (a) Booking time and  
(b) salon worker information



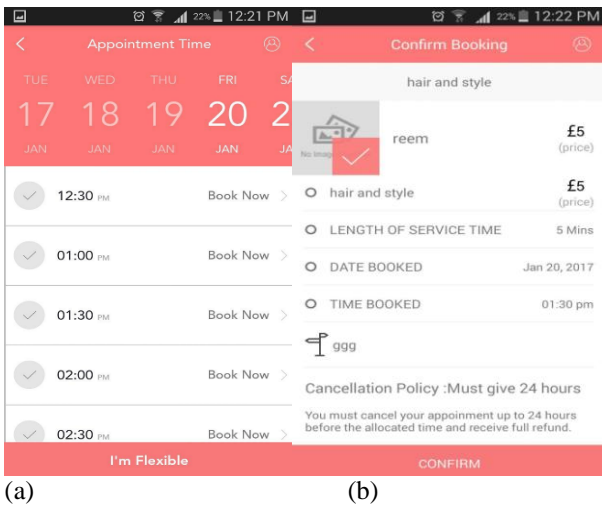


Figure 12: (a) application screen and booking confirmation

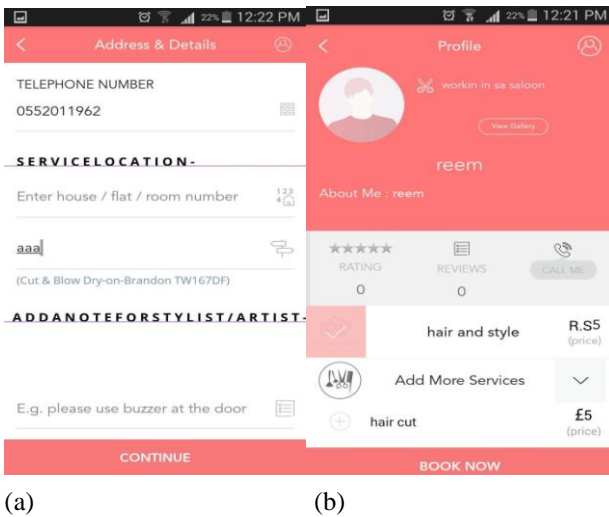


Figure 13: (a) Customer address and details  
(b) customer profile

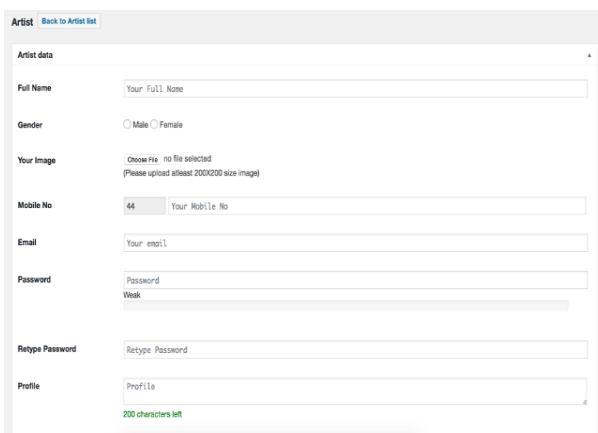


Figure 14: Define artist screen

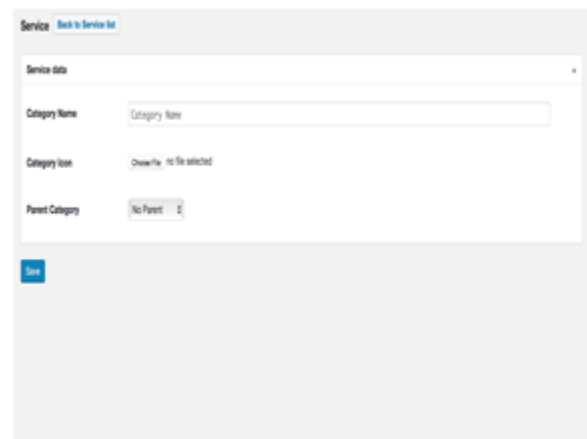


Figure 15: Add service screen

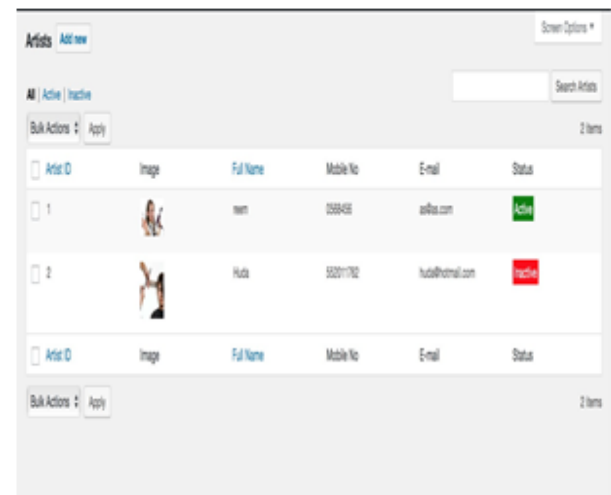


Figure 16: Add artist screen

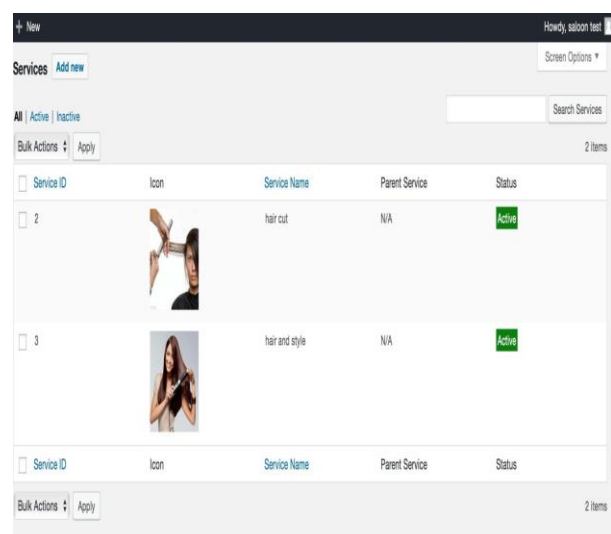


Figure 17: Add new services on application

Bookings

All | Cancelled | Discounted | pending

<input type="checkbox"/>	Name	Book Date	Book Time	Artist Name	Artist Mobile No	Address	Status
No bookings found.							
<input type="checkbox"/>	Name	Book Date	Book Time	Artist Name	Artist Mobile No	Address	Status

Figure 18: Booking screen page

Users

All | Active | Inactive

Bulk Actions:  10 items 1 of 2

<input type="checkbox"/>	User ID	Image	Full Name	E-mail	Phone No	Status
<input type="checkbox"/>	2		Teta	ashert.vip@gmail.com	07876764854	Active
<input type="checkbox"/>	3		Retrob Aeri	rRetrob@fict.edu.sa	0561671740	Active
<input type="checkbox"/>	4		Lara	laraf@yaho.com	0552011968	Active
<input type="checkbox"/>	5		Abdullah	ad.asad@mail.com	3	Active
<input type="checkbox"/>	6		sa	sa@es.sa	22	Active
<input type="checkbox"/>	User ID	Image	Full Name	E-mail	Phone No	Status

Bulk Actions:  10 items 1 of 2

Figure 19: System users screen

There were two fundamental purpose of testing included verified procurement specifications and managed the risk. A good testing program was toll for both the agency and integrator/supplier was typically identified end of development phase of the study.

The black box testing method was used in this application. The functionality testing included all links in the website pages, database connection, forms used in the website pages for submitted or obtained information from the user, Cookie testing.

#### 4. Conclusion

In conclusions, the system was developed with more efficient and reduced the time consumption. In additions, this system was robust and entire system was secured and approved with implemented. The salon application was available in the market and enabled for the customer to download and used the services in their smartphones anytime and anywhere. Many customers had given positive feedback such as flexible, simple and powerful online software for the business need.

#### References

- [1] Izubaidi, A., Roy, S. and Kalita, J. 2018. A data reduction scheme for active authentication of legitimate smartphone owner using informative apps ranking. *Digital Communication and Networks*. 2018.
- [2] Kang, Y., Kim, H., Suzuki, H. and han, S. 2015. Editing 3D models on smart devices. *Computer-Aided Design*. 59 (Feb.2015), 229-238.
- [3] Alam, T. A reliable framework for communication in internet of smart devices using IEEE 802.15.4. *ARPN Journal of Engineering and Applied Sciences*. 13,10 (May.2018), 3378-3387.
- [4] Takahiro, I., Yoshinori, S., Yoshikazu, W., Gen, M. and Shuichi, K. 2018. Smart device communications technology to enhance the convenience of Wi-Fi usage. *NEC Technical Journal*. 8,2.
- [5] Siuhu, S. and Mwakalonge, J. 2016. Opportunities and challenges of smart mobile applications in transportation. *journal of Traffic and Transportation Engineering*. 3,6 (Dec.2016), 582-592.
- [6] Vagrani, A., Kumar, N., Ilavarasan, P.V. 2017. Decline in mobile application life cycle. *Procedia Computer Science*. 122, 957-964.
- [7] Meiliana et al. 2017. Mobile smart travelling application for Indonesia tourism. *rocedia Computer Science*. 116, 556-563.
- [8] Andrews, K. et al. 2018. A smart mobile assessment tool for collecting data in large-scale educational studies. *Procedia Computer Science*. 134, 67-74.
- [9] Hussain, A., Mkpojiogu, E.O.C., Jamaludin, N.H., Moh, S.T.L. (2017). A usability evaluation of Lazada mobile application. *AIP Conference Proceedings*, 1891
- [10] Hussain, A., Mkpojiogu, E. O. C., Musa, J., Mortada, S., & Yue, W. S. (2018). Mobile experience evaluation of an e-reader app. *Journal of Telecommunication, Electronic and Computer Engineering*, 10(1-10), 11-15.
- [11] Manikanthan, S.V., Padmapriya, T., "An efficient cluster head selection and routing in mobile WSN" *International Journal of Interactive Mobile Technologies*, 2019.