

Development Of Roll Application As Web-Based Menu Partners And Profile Using Iterative And Incremental Models

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Abstrak

Berawal dari wawancara penulis dengan tujuh orang yang berprofesi sebagai fotografer dan videografer di Kota Bandung, dimana mereka memiliki permasalahan yang sama yaitu memasarkan jasa dan karya mereka. Mereka yang bekerja secara mandiri atau freelance merasa kesulitan untuk memasarkan pekerjaan dan jasanya karena hanya mengandalkan media sosial seperti Instagram, Line, dan Twitter. Pemasaran mereka melalui media sosial belum efektif karena layanan dan pekerjaan mereka hanya diketahui oleh pengikut mereka di media sosial mereka. Namun fotografer dan videografer yang bekerja di studio foto harus bersaing dengan sesama fotografer dan videografer agar jasa dan karyanya dapat ditampilkan di studio foto atau dipasarkan melalui media sosial dan website studio foto. Sebelumnya, ada startup di Bandung yang mencoba memasarkan jasa fotografi dan videografi. Namun hal tersebut tidak menyelesaikan masalah pemasaran yang dialami oleh fotografer dan videografer di Bandung karena pemasaran di startup selalu fokus pada kolaborasi studio foto, yang hanya memasarkan karya-karya unggulan studio foto. Dari data-data yang diperoleh, penulis dan tim dalam penelitian ini akan membuat sebuah aplikasi berbasis web yang diberi nama "Roll", penulis dan tim berharap dapat menyelesaikan masalah pemasaran jasa dan pekerjaan fotografer di kota Bandung.

Kata Kunci : Black Box, User Acceptance Testing, Iterative, Incremental.

Abstract

Starting from the author's interviews with seven people who work as photographers and videographers in Bandung City, where they have the same problem, namely marketing their services and works. Those who work independently or freelance

find it challenging to market their work and services because they only rely on social media such as Instagram, Line, and Twitter. Their marketing through social media has not been effective because their services and work are known only to their followers on their social media. However, photographers and

videographers who work in photo studios must compete with fellow photographers and videographers so that their services and work can be displayed in the photo studio or marketed through social media and the photo studio's website. Previously, there was a startup in Bandung that tried to market photography and videography services. However, this has not solved the marketing problems experienced by photographers and videographers in Bandung because marketing at startup is always focused on photo studio collaboration, which only markets the photo studio's flagship work. From the data obtained, the authors and the team in this study will create a web-based application called "Roll", the authors and the team hope to solve the problem of marketing services and the work of photographers in the city of Bandung.

Keyword: Black Box, User Acceptance Testing, Iterative, Incremental.

I. PRELIMINARY

Starting from the author's interviews with seven people who work as photographers and videographers in Bandung City, where they have the same problem, namely marketing their services and works. Those who work independently or freelance find it challenging to market their work and services because they only rely on social media such as Instagram, Line, and Twitter. Their marketing through social media has not been effective because their services and work are known only to their followers on their social media. However, photographers and videographers who work in photo studios must compete with fellow photographers and videographers so that their services and work can be displayed in the photo studio or marketed through social media and the photo studio's website.

Previously, there was a startup in Bandung that tried to market photography and videography services. However, this has not solved the marketing problems experienced by photographers and videographers in Bandung because

marketing at startup is always focused on photo studio collaboration, which only markets the photo studio's flagship work. From the data obtained, the authors and the team in this study will create a web-based application called "Roll", the authors and the team hope to solve the problem of marketing services and the work of photographers in the city of Bandung.

II. THEORITICAL REVIEW

A. Back End

The back end or often called the server-side, is where an application or system runs; the back end usually adds, change, or delete data. The rear end usually does not directly interact with the user, such as databases and servers. Usually, people who work as back end developers are programmers or developers whose work focuses on security, system design, and data management. Back end developers are needed to develop dynamic systems or applications with ever-changing data; examples of dynamic websites include Facebook and Google. A back end developer usually has a heart master programming languages that can be used to manage databases, process files, and I / O such as PHP, ASP, and NodeJs [1].

B. PHP

PHP is a server-side scripting language, where data processing is done on the server-side. Another definition of PHP is an acronym for Hypertext Preprocessor, which is a programming language based on codes (scripts) that are used to process data and send it back to the web browser into HTML code. PHP according to Anhar (2010) is a web programming language server-side which is open source, PHP is also an integrated script with HTML and is on the server (server-side HTML embedded script) [2]. PHP is an open-source language that can be used in various machines (Linux, Unix, Macintosh, Windows) and can be run continuously through consoles as well as executing system commands. PHP is a programming language designed to be pasted easily on HTML pages. PHP provides a very inexpensive solution because it is free to use and can be used by anyone. Besides, PHP can run on various platforms such as mobile, desktop and websites. Initially, PHP was only able to run on UNIX systems and its variants, but now it can run smoothly in various operating systems such as Windows and iOS. With the wide range of operating systems that can run PHP plus the many functions it has, it's no wonder that the use of this programming language is widely used by developers web [3].

C. Iterative and Incremental Model

This model combines elements of the waterfall model in an iterative fashion. Moreover, each linear sequence produces deliverable increments of the software. The basic requirements are addressed in the first increment, and it is the core product, however, many supplementary features (some known, others unknown) remain undeliverable at this increment. This model constructs a partial implementation of a total system. Then, it slowly adds increased functionality. Therefore, each subsequent release will add a

function to the previous one until all designed functionalities are implemented [4].

III. RESULTS AND DISCUSSION

In designing Roll website products, researchers use the Iterative Incremental method because it is in accordance with research needs which can be seen in Figure 3. 1

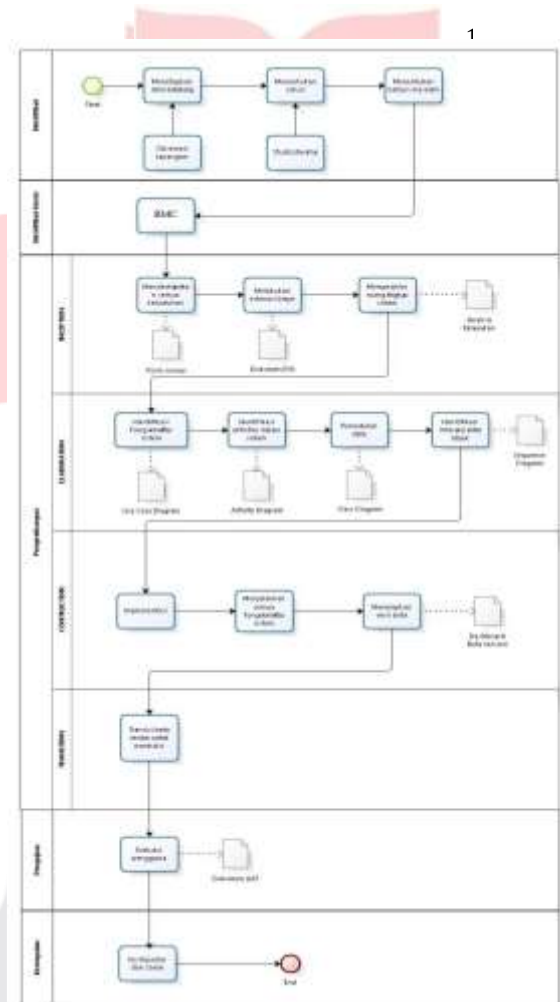


FIGURE 3. 1 Systematic Problem Solving

A. Systematic Problem Solving

This research was conducted through five stages according to the figure 5 namely identification, business identification, product development, testing, and conclusion. The following is an explanation of each stage.

a. Identification Stages

The identification stage is the stage where the author determines the formulation of the problem based on the background of the research conducted through field observations. Formulation of the problem will determine how the purpose of the research taken by the author will solve the formulation of the problem. Then the resulting solution will determine the boundaries of the problem from the research so that the discussion in this research focuses on the problem to be solved. Field observations were made

with several resource persons who work as photographers in Bandung city. The topics observed were related to the development of the Roll application as user partner and web profile using iterative and incremental model method.

b. Business Identification Stages

At this stage, to determine what kind of business model is in this web-based Roll application, the author uses tools in the form of Business Model Canvas so that the author can identify several existing business models into nine sections in the Business Model Canvas.

c. Development Stages

This stage consists of four stages contained in the Iterative Incremental model, namely inception, elaboration, construction, and transition. The steps taken are as follows.

a) Inception

At this stage, what is done is related to collecting user needs in the form of interview surveys with clients. Then make a cost estimate with a return on investment (ROI) document and clarify the scope of the system to produce feasibility analysis results such as market potential.

b) Elaboration

At this stage, identify the system functionality of the website-based application that is being developed, which is described by a use case diagram. Then identify the activities in the system, which is described with Activity diagrams. Next, make data modeling which is described with Class diagrams. Finally, identify the interaction between objects in the system, described by Sequence diagrams.

c) Construction

At this stage, implement a website following user needs and system requirements. Then run all the system's functionality and prepare the beta version before the website is launched. To do this step, use the MySQL tools.

d) Transition

At this stage, finalize user needs and transition to product introduction to customers. These stages are carried out in each iteration. What is done in each iteration is different in each phase. At this stage, to determine what kind of business model is in this web-based Roll application, the author uses tools in the form of Business Model Canvas so that the author can identify several existing business models into nine sections in the Business Model Canvas.

d. Testing

At this testing stage, the author will evaluate users of Roll by doing surveys and sending surveys to website users, namely Roll customers. If it is not appropriate, it will be carried out back to the initial stage, and if it is appropriate, the website will be released to users. At this testing stage, the author uses several tests to find errors while running the website; the testing used is user acceptance testing and black-box testing.

e. Conclusion

At this stage, providing conclusions and suggestions for development is carried out using the iterative, incremental method using two menus Partners, and Profile. When the user wants to place an order for services, they can select the Partners menu, and if the user customer, partner and admin wants to change the data they have, they only need to Select the Profile menu.

B. Functional Requirements Analysis

To find out the Functional Requirements Analysis of Roll, there are several tables of system functional requirements analysis that will be summarized so that the information presented is concise and clear. The following table analyzes the system's functional requirements from the Startup Roll, as shown in the table below.

TABLE 3. 1 Functional Requirement Analysis

REQ-ID	Needs Name	Needs Detail	Description	User
REQ-01	In running the Roll website	Enter the Partners feature	The process of viewing the list of partners by pressing the Partners menu	Customer
REQ-02		Choose Partner	The process of choosing a partner by pressing one of the desired partners	Customer
REQ-03		Enter the partner's work feature	The process of viewing the partner's work by pressing the button to see the partner's work	Customer
REQ-04		Enter the Partner service package	The process of choosing a service package offered by a partner by pressing one of the desired packages	Customer

REQ-05	Fill order data	The process of filling in the order data by entering the date, time, address, notes for partners, and numbers that can be contacted	Customer
REQ-06	Choose payment method	The process of choosing a payment method by pressing the desired payment method	Customer
REQ-07	Upload proof transfer	The process of uploading proof of payment by pressing the upload button	Customer
REQ-08	Cancel Order	The process of canceling an order by pressing the cancel button	Customer
REQ-09	Enter the Profile feature	The process of entering the Profile feature by pressing the customer logo, then selecting profile	Customer, Partner, Admin
REQ-10	Entering data in the Profile feature	The process of inputting personal data by filling in the biodata table that you want to change	Customer, Partner, Admin

TABLE 3. 2 Actor

No	Actor	Description
1.	Customer	This user has access rights to enter the Partners menu, choose partners, view partner's work, select partner service packages, fill in order data, choose payment methods, cancel orders, upload proof of transfer, and change biodata on the profile feature
2.	Partner	This user has access rights to change the biodata contained in the Profile menu
3.	Admin	This user has access rights to change the biodata contained in the Profile menu

C. Use Case Diagram

Use case diagrams describe the interactions between actors and the system. Use case diagrams. Here are some functions using use case diagrams. As in Figure 3. 2.

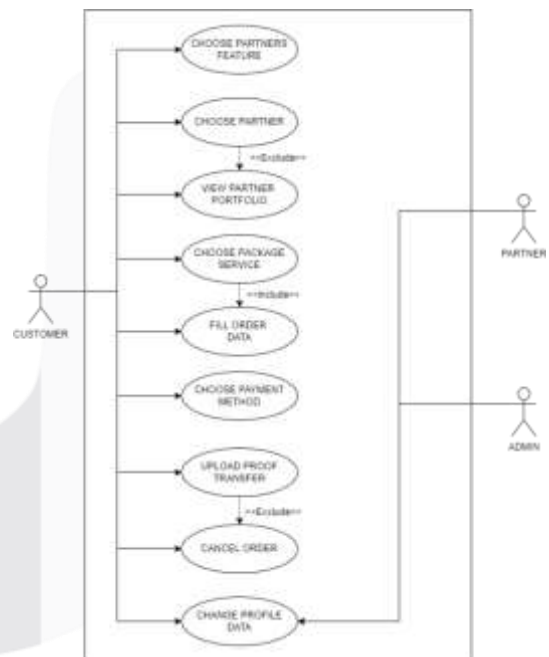


FIGURE 3. 2 Use Case Diagram

a. Actor

In the Roll business process in the Partners menu and profile, there are 3 main actors: customers, partners, and admins. For actor descriptions, see the Table 3.2.

D. Implementation Result

The implementation phase of this application describes the implementation of the plans that have been designed in the previous chapter in this research. Using a website-based Roll application as shown in Figure 3. 3 – 3. 11.



FIGURE 3. 3 Interface partners feature, where users can view and select partners



FIGURE 3. 4 Interface Partner Information and Service Package, where users can view gallery partner



FIGURE 3. 5 Interface Partner Information and Service Package, where users can choose Service



FIGURE 3. 6 Interface Fill Order Data Page, where users fill data for order



FIGURE 3. 7 Interface Payment Method Page, where users can view the order data

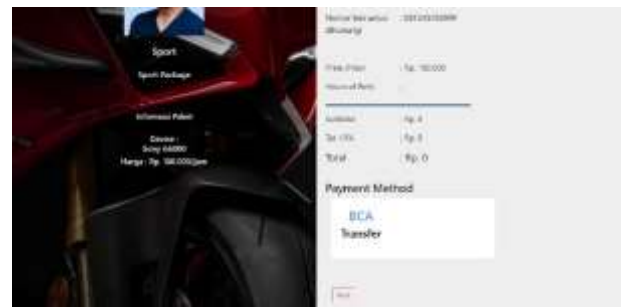


FIGURE 3. 8 Interface Payment Method Page, where users can choose payment method



FIGURE 3. 9 Interface Upload Proof Transfer Page, where users can input proof transfer to complete the order



FIGURE 3. 10 Interface Thank You and Enjoy Page, where this page show after finishing upload proof transfer



FIGURE 3. 11 Interface Profile for Customer, where user (Customer) can change their data and save



FIGURE 3. 12 Interface Profile Partner, where user (Partner) can change their data and save

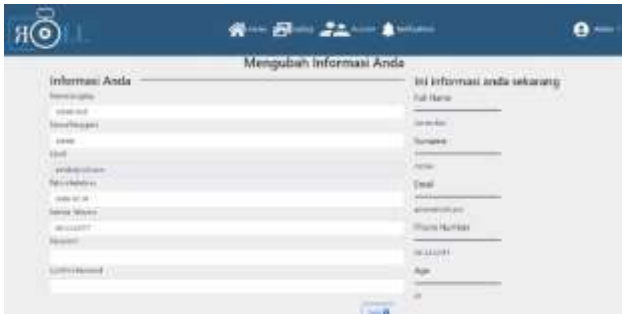


FIGURE 3. 13 Interface Profile Admin, where user (Admin) can change their data and save

E. Testing

To find out the quality of the Roll website, it is necessary to test which will identify obstacles during testing the existing features. Testing on this iterative and incremental method uses User Acceptance Testing (UAT) and Black Box Testing.

a. Black Box Testing

Black box testing is one way to test the functionality of an application by observing the input and output results of the features you want to test without having programming skills, and the test is considered successful if the output tested is as desired.

b. User Acceptance Testing

User acceptance testing (UAT) is a process of verifying a solution works for user. It is not about ensuring software does not crash and meets requirements but its function is to ensure that solution will work for user. The purpose of UAT is to gather input from actual system users, those who have experience with the business processes and will be using the system to complete related tasks [5].

IV. CONCLUSION

Based on the results of research that has been carried out by the developer, the conclusion is that.

- A. The web-based Roll application that has been developed can help solve the problems of photographers by providing a platform for changing their services, and also by marketing Roll through Instagram and Whatsapp accounts and word of mouth, which has an impact on the marketing of the services of photographers who join Rolls.
- B. To design the data that will be used so that it can be designed in the Partners and Profile features, it is necessary to make a business process design then perform a functional requirements analysis. After that, design entity relationship diagrams, use case diagrams, use case scenarios, activity diagrams, class diagrams, sequence diagrams, relational database tables, and deployment diagrams.

- C. Using BlackBox Testing, you can find out that the features tested on customers, namely the Partners feature and the Profile feature tested on customers and Partners, can run well. Then the results of User Acceptance Testing to users, namely customers and partners, show that 32% of respondents strongly agree that the features that have been tested are running well, 59% of respondents agree that the features that have been tested are running well, and 9% of respondents not answer or be neutral on the features that have been tested.

REFERENCES

- [1] Arhandi, P. (2016). Pengembangan Sistem Informasi Perijinan Tenaga Kesehatan dengan Menggunakan Metode Back End dan Front End.
- [2] Anhar. (2010). *PHP & MySQL Secara Otodidak*. Jakarta: PT TransMedia.
- [3] Firman, Wowor, & Najoran. (2016). Sistem Informasi Perpustakaan Online Berbasis Web.
- [4] Alshamrani, A., & Bahattab, A. (2015). IJCSI International Journal of Computer Science Issues, Volume 12, Issue 1, No 1, January 2015. *A Comparison Between Three SDLC Models Waterfall*, 107.
- [5] Mohamad, R., & Yassin, N. M. (2017). International Journal of Software Engineering and Technology. *Comparative Evaluation of Automated User Acceptance Testing Tool for Web Based Application*, 1.