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Application of Waterfall SDLC Method in Designing Student's Web Blog Information System at the National University

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ABSTRACT

Web Blog as a means of writing for several people, including writers. The design of this web blog information system aims for students to make work in the form of articles about knowledge, personal experience, tutorials, or troubleshooting, news and others, about any writing that is not violates the rules of writing or can hurt the relationship / offend others. Web applications / services make it easier for users to publish an information they have through writing that is made into a post on a web. The blog also consists of various texts, images, hypertext, and several links (which connect several pages - pages from other web sites, audio, video, and other files). Students can interact and share all the information in the National University room with the aim to help students get the information sought. The software development method is done by using the SDLC Waterfall method. This website that is used dynamically presents information that is always up to date. From the results of research that has been carried out the author implements the results of these studies on: Design of the National University Web Blog Blog Information System Using the Waterfall Method.

1. Introduction

In this era is the era of global information technology, where everything is done quickly, practically, precisely, and up to date with information obtained from anywhere, anytime, and anywhere. The progress of the technological era that is constantly making this develop rapidly. The development of technology and science is so rapid that it encourages a lot of renewal in utilizing the results of technology in the process of delivering an information. Blogs are one of the internet media that provide a place for personal notes to be seen / read by all internet users and become a medium for sharing information for free and easy to access. (Andini & Hasan, 2019). In utilizing blog media as a place for interactive sharing that is by filling out blogs in the form of materials with text, image format.

The use of web blogs as a medium of information will be through web blogs created specifically for National University students. Based on the problems that occur, then: National University needs a system that can facilitate students in making blogs easier, to get information from various faculties at the National University. However, the website used is not yet supported as an information system website, and has not been able to fulfill information for students. This information system will process all data in one system that will be processed automatically by the system. It is expected that this web blog can also accelerate and also facilitate the process of delivering information.

2. Literature Review

2.1 Definition of Blog

Blog is an abbreviation of "web log" is a web application whose contents are various kinds of images, information, or articles and writings that are published as blog posts on a public web page (blog template). These posts are often published in reverse order ie posts or from the most recent content placed first or earlier followed by posts or older content. Websites like this are widely accessed by internet users according to the topic they are looking for. which is needed with the aim of the user of the blog in finding an information.(Yanti, 2018)

2.2 Definition of Information Systems

Information System is: a system that exists in a particular organization that also facilitates the needs of the processing of daily transactions, and supports the operation of managerial nature with the strategic

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activities of an organization and also includes reports intended by users(Pinem & Pakpahan, 2019).

2.3 Website Definition

Website is: a group of web pages that can be related to the general purpose also is a server that contains a set of information provided: groups / organizations, individuals. A website is also usually placed on a server that can be accessed through various networks such as: the Internet, or an Internet address (URL), or local area network (LAN). The combination of all these sites can be accessed by all the various users on the Internet commonly called : World Wide Web or better known by the abbreviation WWW.(Wikipedia: Website (Website), 2020).

2.4 Definition of the Internet

According to Irawan (2011: 2) stated that "Internetwrok is an extension of the Internet kta, which means connecting several computers through a network. While According to Arief (2011: 7) stated that" applications that contain multimedia documents (images, text, video, and animation) is the web. the contents of which use the HTTP protocol (hypertext transfer protocol) and can be accessed through software that is often referred to as a browser. Meanwhile, According Dipraja (2013: 10) argues that "web page (web page) is a page specifically in providing a particular website. while the homepage is the home page or front cover of a website. "(Parimita et al., 2017)

3. Research methods

This research was carried out with the system development method of various data collection and analysis of the need for developing a web that is using the Waterfall development method: In this blog web information system also uses the method namely: System Development Life Cycle (SDLC) modeled: Watefall as in the following figure :

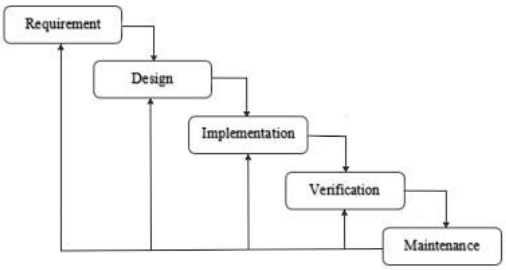

Fig 1. SDLC Model Waterfall

The System Development Life Cycle (SDLC) method of the waterfall model is one of the approaches to development for systematic and sequential software ranging from environmental analysis, design of the application to be made, code in making the application, and testing of the application itself, and application maintenance to keep an application running.

This development method itself also consists of several stages, such as: analysis of needs (analysis), design (design), development (development), testing (testing), and the final stage of implementation (implementation) (BLACKLOCK & BLACKLOCK, 2018)

4. Results and Discussion

To be able to make the application we have to design various kinds of flow (flow), in this design is also determined as the design in general, namely: a set of flow, application performance runs and also the implementation of the application results.

4.1 System Flowchart Running

To be able to know the flow of the system that runs on this system can be seen in the picture about the flow (flow) of the existing system. Flow (flow) about students and flow (flow) admin on the web blog is as below:

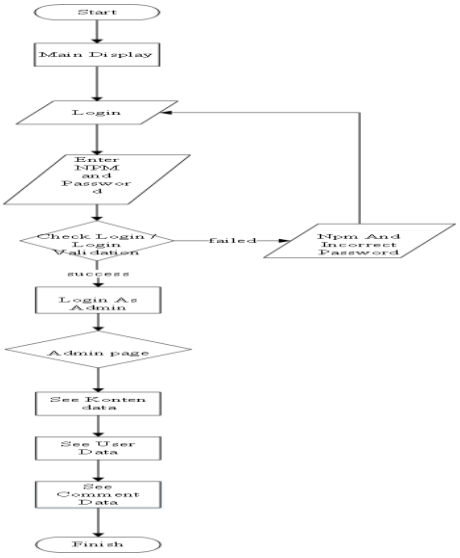

Fig 2. Flow chart Admin

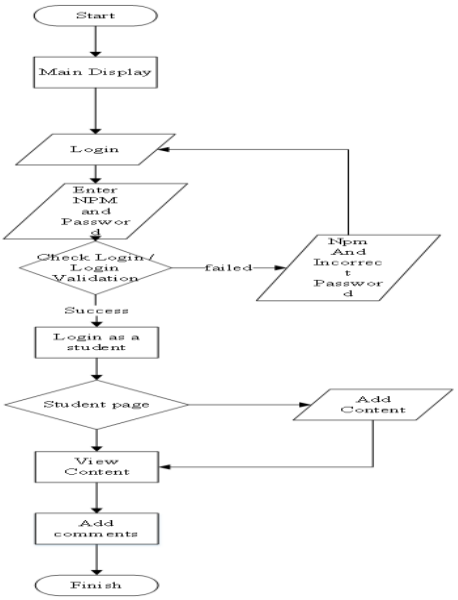

Fig 3. Flow chart College student

4.2 Use Case on the system

This section is the use case used in making this system, as below:

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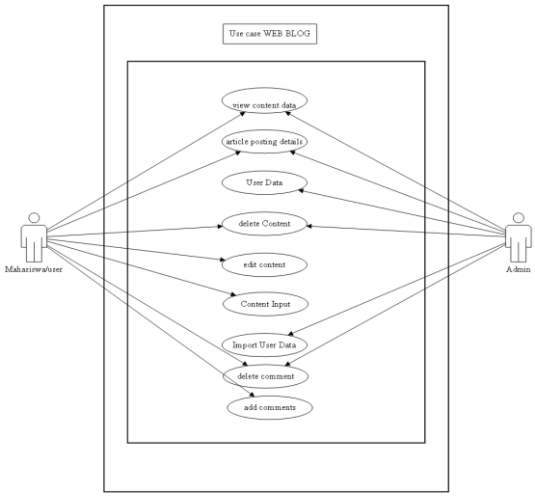

Fig 4. Use Case Web Blog

4.3 Class Diagrams on the System

This section is a class diagram used in making interconnected systems, as below:

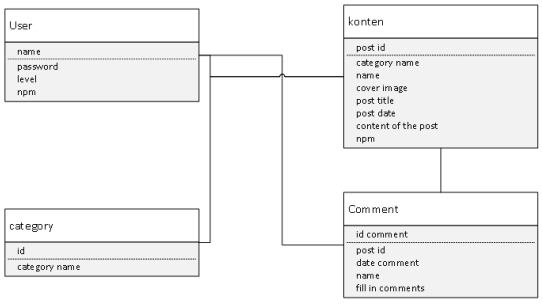

Fig 5. Class Diagram Web Blog

4.4 Activity Diagram on the System

This section is a class diagram in making the system, as follows:

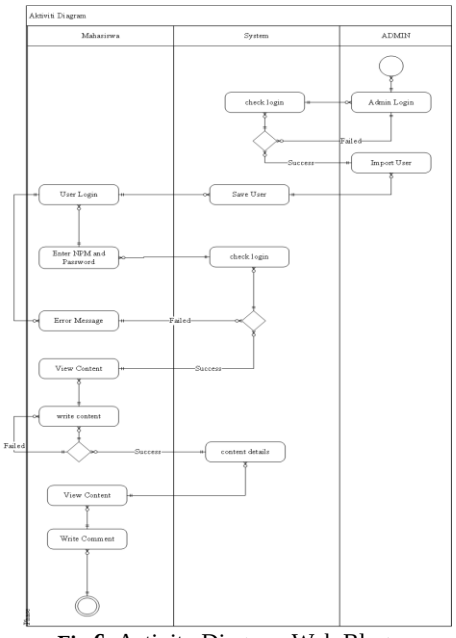

Fig 6. Activity Diagram Web Blog

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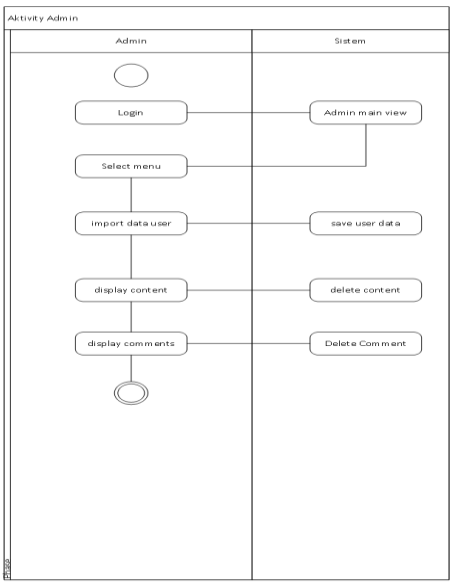

Fig 7. Activity Diagram Admin

4.5 Entity Relationship Diagra on the System

This section is used in making this system, as below:

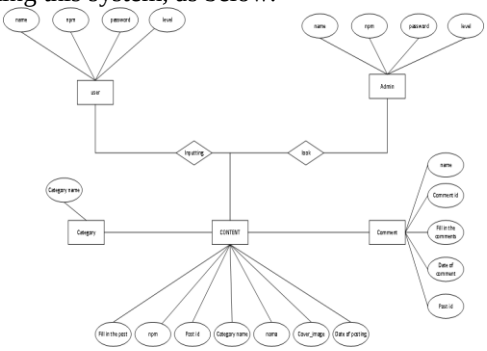

Fig 8. Entity Relations Diagram Web Blog

4.6 Implementation on the Website

The following are the results of the implementation on the website that was made from several depictions of the grooves that have been made, the following are the results:

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Fig 9. Home Page Web Blog

In this index page there is 1 function, namely: Tombil Login to enter as a user or admin with different features and uses of the needs of a web site that can be seen from the flow (flow) above. In this index page users or non-users can read articles freely without the need to log in, but can not make a work in the form of articles about knowledge, personal experience, tutorials, or troubleshooting, news and so on, basically any writing that does not violate the rules of writing and does not hurt the competition / offensive feelings from others. There are also various info at the bottom or footer to be able to see some info.

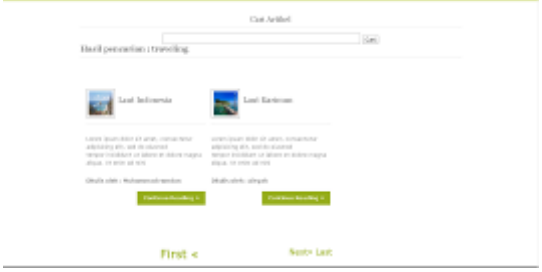

Fig 10. Search on the start page

Here there is a feature that makes the user or reader make it easier to search by using the search form that is made only by writing the title or category of an existing post.

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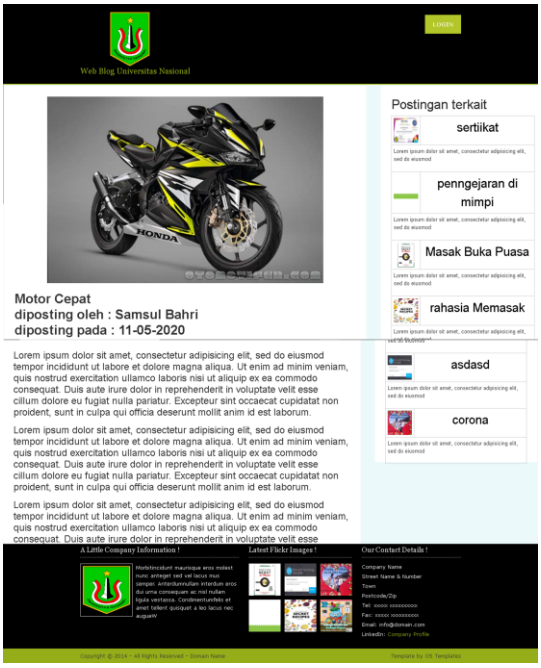

Fig 11. Post detail page

In the details of this post everyone can access without the need to be a user on a blog post. Users can view the contents of an article written while on the side bar here to see about other articles. Users can view other articles just by clicking on the posting articles in the sidebar.

Fig 12. Login page on the website

This Login Form uses a multi-level login that makes a different session when entering a start page, judging by the status level input on the database. Using this session form will lead to different pages.

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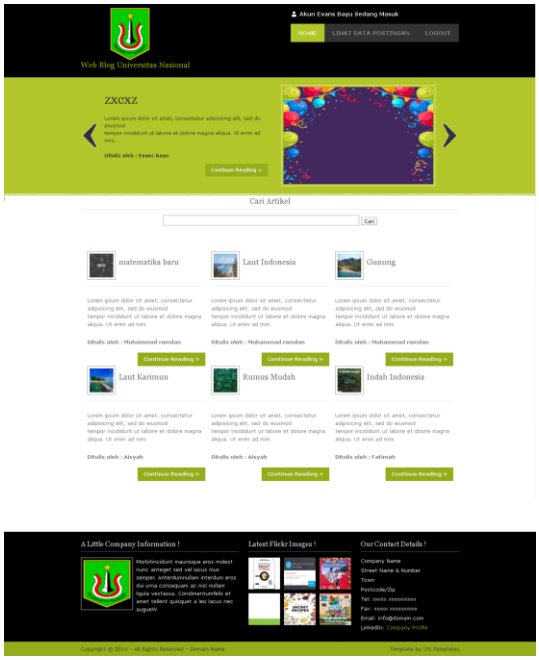

Fig 13. Start page with student sessions

In the picture above when students log in they will be directed to the home page but here there is a function that is open specifically for students that cannot be done by the admin. This feature is owned by students but not by an admin.

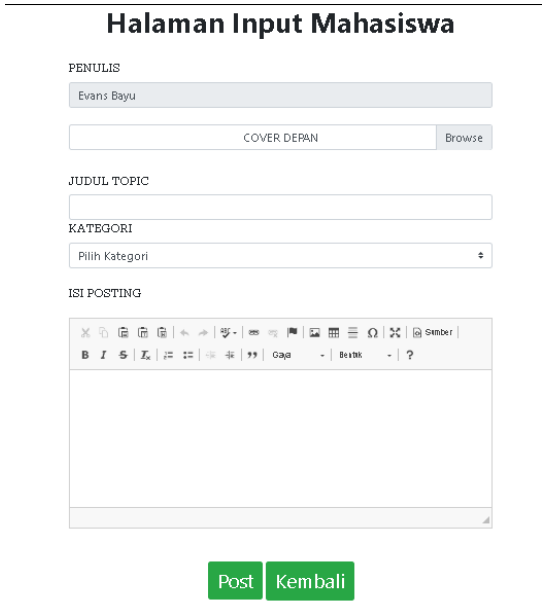

Fig 14. Student page for content input

On this page students can make work in the form of articles about knowledge, personal experience, tutorials, or troubleshooting, news and so on, basically any writing that does not violate the rules of writing and does not hurt the affinity / offend others.

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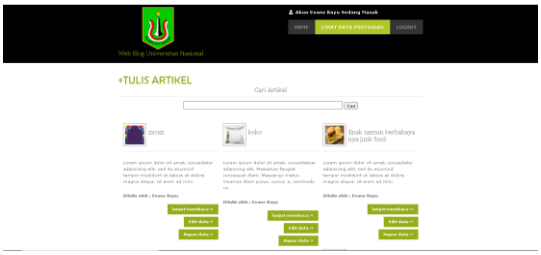

Fig 15. View content from students

On this page only the student himself can see the content he created himself, the student cannot delete or edit posts that he did not make himself. On this page uses selection to display data. And students can delete what they have made on the page see this content but students cannot delete other people's content.

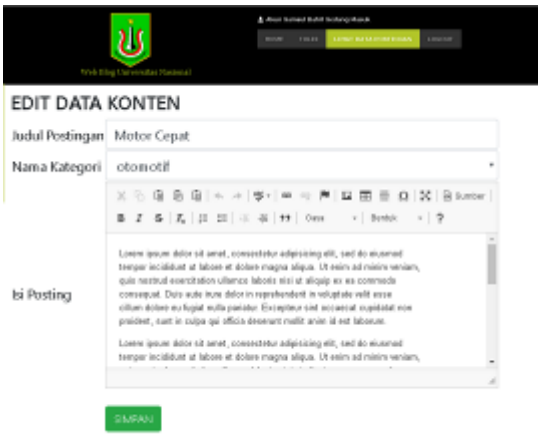

Fig 16. Edit content page

In this page, students can edit a position that has been posted before it aims to if you want to add, subtract, or if there is something wrong with the post

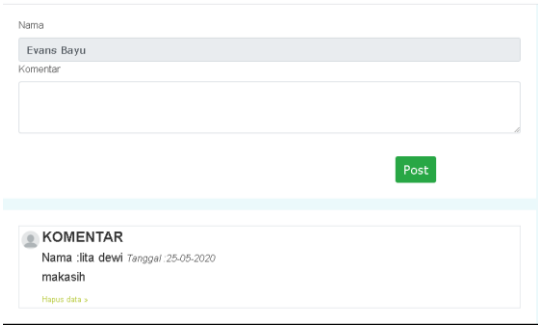

Fig 17. Comments column

In the post details page there is a section for adding useful comments for students to interact with their posts.

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Fig 18. Admin Dashboard Page

In this page the admin can see a lot of data coming in. Here are some functions: there is delete to delete the posted content then see details for the admin to see the contents of the entire post content, there is a search form that makes it easy for the admin to select. On this page there is also a function of determining how much will be displayed on the data lines that have entered as shown.

Fig 19. Display of Student Posts

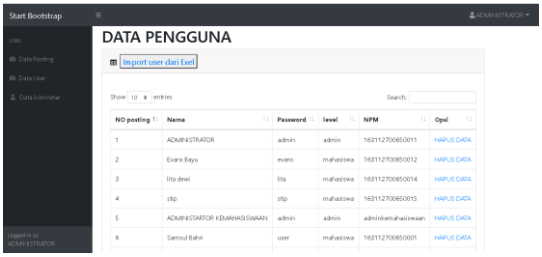

Fig 20. User Display

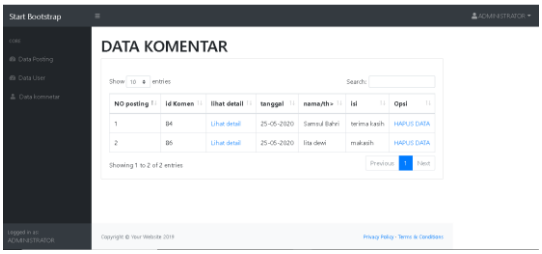

Fig 21. Display Comments

On this page the admin can see the data that users have registered., There is a data import function to make it easy for the admin to enter user data

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Fig 22. Import Data Form

On this page the admin will make it easy to enter data because of import data. Make it easy for the admin to enter multiple data at once.

5. Conclusion

Based on the discussion with the results of the study above about "Application of the SDLC Waterfall Medote in the Design of Student Blog Web Information Systems at the National University" can be concluded as follows:

a. With this web blog students are expected to be even more active in writing work because they have prepared a place to work.
b. Students are facilitated in giving and getting information quickly, precisely and up to date.
c. The existence of this web blog can help increase the reading interest of these students.
d. It is expected that with this web blog students will be able to interact between faculties

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