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IMPLEMENTATION OF THE RUP METHOD ON THE LABUHAN BATU UNIVERSITY STUDENT ACTIVITY UNIT INFORMATION SYSTEM

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Abstract

The Student Activity Unit (UKM) is a place where students who have the same interests and hobbies gather in a university. Univ. Labuhan Batu is a private university in Rantau Prapat which has 5 SMEs, at the time of registration, prospective SME members visit the UKM booths that have been opened by UKM management, besides that there are several other obstacles such as UKM Univ. Labuhan Batu is recorded manually only from the Student side of the Univ. Labuhan Batu, which contains the name of the PIC, date of activity, number, name of SME, place, start, finish, number of attendance, meeting to, information, also material data that is not neatly arranged, as well as monthly report collection. In order to support the recording of activities in terms of attendance, members and materials taught to registration of SME members, the researchers created a web-based SME information system using the Rational Unified Process method, in this study using black box testing. RUP is a method that uses the concept of object oriented, and has activities that focus on model development using the Unified Modeling Language (UML). The result of this research is an information system that can be used by SMEs, SME members, and the student body of Univ. Labuhan Batu which makes it easy to collect attendance information, member data, activity data, materials and announcements. and has activities that focus on model development using the Unified Modeling Language (UML). The result of this research is an information system that can be used by SMEs, SME members, and the student body of Univ. Labuhan Batu which makes it easy to collect attendance information, member data, activity data, materials and announcements. and has activities that focus on model development using the Unified Modeling Language (UML). The result of this research is an information system that can be used by SMEs, SME members, and the student body of Univ. Labuhan Batu which makes it easy to collect attendance information, member data, activity data, materials and announcements.

Keywords: Information System, Student Activity Unit, Labuhan Batu University

1. Introduction

Univ. Labuhan Batu is a private university in the City of Rantau Prapat which has a Student Activity Unit (UKM), used as a forum to gather students who have the same hobbies and interests. Student Activity Unit Univ. Labuhan Batu itself consists of 5 SMEs, each of which is named the PalComTech Broadcasting UKM, the PalComTech Digital Art UKM, the PalComTech Open Source UKM, the PalComTech Photography UKM, and the PalComTech Programming UKM. The Student Activity Unit itself is a student institution where students gather who have the same interests, hobbies, creativity, and orientation towards extracurricular activities on campus[1].

SMEs in Univ. Labuhan Batu itself at the time of registration was still using the conventional method by coming to the booths that had been opened by each PalComTech UKM, apart from that there were several obstacles such as the Univ students. Labuhan Batu takes notes to find out the activities of each UKM which contains the name of the PIC, date of activity, number, name of UKM, place, start, finish, number of attendance, meeting to, information, there is also material data that is not neatly arranged, and monthly report collection.

Based on research that has been done previously, among others, discusses the e-commerce information system for the used motorcycle sales network in Kampar Regency using the rational unified process and object oriented analysis and design methods and the tests are carried out using blackbox and user acceptance tests. analysis and design so as to produce a Commerce system. The conclusion of this study is that the E-Commerce System can expand in terms of promotion, making it easier for consumers to buy and choose the desired motorcycle [2].

Development of a letter management information system at the general election commission of Palembang City. The mail management information system to be built at the KPU was developed with a UML (Unifed Model Language) model design, system development using RUP (Rational Unified Process), built based on a website with
PHP and MySQL programming languages [3]. Based on the description above which has been explained, the researcher took the initiative to build an information system for the Univ student activity unit. Labuhan Batu which serves to accommodate member data, attendance, activities, materials and so on that are needed by all related parties using the RUP method, because the RUP process is suitable in the development of information systems because it has stages such as inception (beginning), elaboration (expansion or planning, construction (construction), transition (transition).

2. Literature Review

2.1 System

An information system is an arrangement of people, data, processes and Information Technology (IT) that interact to collect, process, store, and provide results in the form of information needed to support an organization [4]. Information systems can also be interpreted as a unified element of information, including how to design, activate, handle, maintain, and utilize information [5]. Meanwhile, it was also explained that the SME information system is a man-made system consisting of computer-based components and manuals that provide information for administrators, members and other interested parties outside the organization [6]. Website that explains the company profile at PT. Personal Love with the implementation of the Rational Unified Process (RUP) method. RUP is a method that uses the concept of object oriented, and has activities that focus on model development using the Unified Model Language (UML), has stages such as inception (beginning), elaboration (expansion or planning), construction (construction), transition (transition) so that it is very appropriate to apply the method on the website of PT. Personal Love [7]. In a previous study, entitled the application of student activity units (UKM) at the web-based STMIK Mura Lubuk Linggau, concluded that the website is used to convey information and provide data quickly, precisely, and accurately [8]. transition (transition) so that it is very appropriate to apply this method on the website of PT. Personal Love [7]. In a previous study, entitled the application of student activity units (UKM) at the web-based STMIK Mura Lubuk Linggau, concluded that the website is used to convey information and provide data quickly, precisely, and accurately [8]. transition (transition) so that it is very appropriate to apply this method on the website of PT. Personal Love [7]. In a previous study, entitled the application of student activity units (UKM) at the web-based STMIK Mura Lubuk Linggau, concluded that the website is used to convey information and provide data quickly, precisely, and accurately [8].

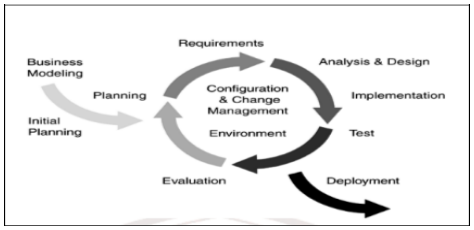

Figure 1. Iterative Process of RUP

3. Results and Discussion

In making the SME Information System Univ. In Labuhan Batu, the researcher uses the Rational Unified Process method, as explained in the research conducted by Usman Ependi, that the Rational Unified Process (RUP) is a software development approach that is carried out iteratively, focused on architecture (architecture-centric). , and more directed based on the problems encountered (use case driven).

RUP provides a well defined structure for the software project lifeflow. The RUP method has 4 (four) phases, namely:

A. Inception phase

In this first stage, we model the required business processes (business modeling) and define the requirements for the system to be created (requirements).

B. Elaboration phase

The second stage is more aimed at planning the system architecture. This stage is more on system analysis and design.

C. Construction phase

The third stage, where we develop the components and features of the system. System implementation and testing focused on software implementation in program code.

D. Phase transition

The stage where we deploy or install the system so that it can be used and understood by the user (user). Activities at this stage include user training and maintenance. The iterative process of RUP can be seen in Figure 1.

In this study, researchers also use black box testing, black box testing focuses on the functional specifications of the software. Software testing in terms of functional specifications without testing the design and program code to find out whether the functions, inputs and outputs of the software are in accordance with the required specifications. The black box testing method is one of the easiest methods to use because it only requires a lower limit and an upper limit of the expected data. The estimation of the amount of test data can be calculated through the number of data entry fields to be tested, the entry rules that must be met as well as the upper and limit cases below that meets.

A. Inception Phase

This stage is used to explore needs

to the development of a medicinal plant database system. This stage is used to model the business processes that are run and propose new business processes. The target users in this system are SME members, students, and SME administrators who carry out SME activities at Univ. Stone Labyrinth. The inception phase has two stages, namely:

1) Business Modeling

Business modeling is a modeling technique used to describe a business model. Business modeling is used to review, improve and create a business. The model used in business modeling is the Business Use Case Model which describes the interaction of the system process with external parties.

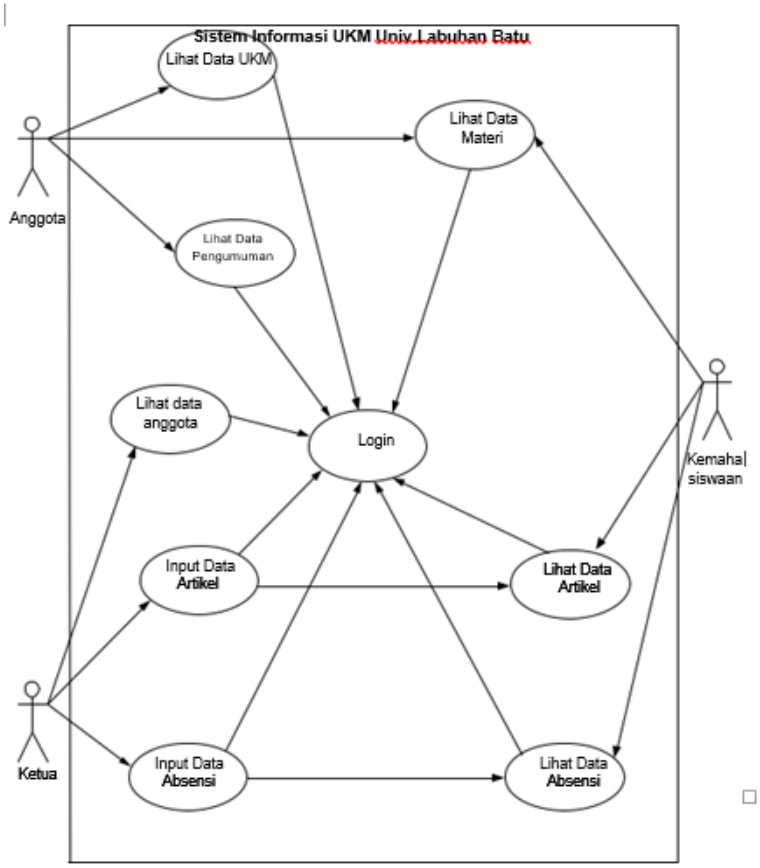

Figure 2. Business Use Case Model

The Business Use Case Model consists of Members, Students and Members who are divided into their respective needs, such as Members can view SME data, view material data and view announcement data, while the Chair can view member data, input article data and input attendance data. , and Student Affairs can view article data, view attendance data and view material data.

2) Requirements

Requirements workflow is to describe what the system should do. Use cases are identified to represent the behavior of the system, this use case diagram describes the functionalexpectedfrom the Univ. Stone Labyrinth. UKM members can view announcements, materials and other member data after logging into the system. UKM management can add announcements, materials, new members and take attendance and upload monthly reports after logging into the system, and the last is students who can access member data, attendance and monthly reports without changing the data in the system through the login process.

B. Elaboration Phase

1) Analysis

From the results of research conducted, researchers found problems, namely prospective UKM members are required to come to UKM booths to register directly, while not all students can visit these booths due to time and place limitations, besides that there are often students or prospective members who registered more than 1 (one) UKM at the same period, besides that the UKM management also took a long time when asked about UKM member data, attendance, activities and materials taught, as

well as student parties who also needed time to find out reports monthly.

2) Design

Activity diagrams are used to describe workflows or activities of a system or business process, activity diagrams describe system activities not what actors do [9].

Activity Diagram describes the interaction activities between members and the system. On the main menu of members there are SME member data, SME data, announcement data, material data, while the student unit main menu displays data such as UKM data, UKM member data, new user registration data, announcement data, material data, attendance data , report data, articles, and galleries. The menus on the display of the UKM chairman are user data, user registration data, UKM data, announcement data, material data, attendance data, report data, article data, and gallery data.
The description of the activity diagram of SME members can be seen in Figure 3.

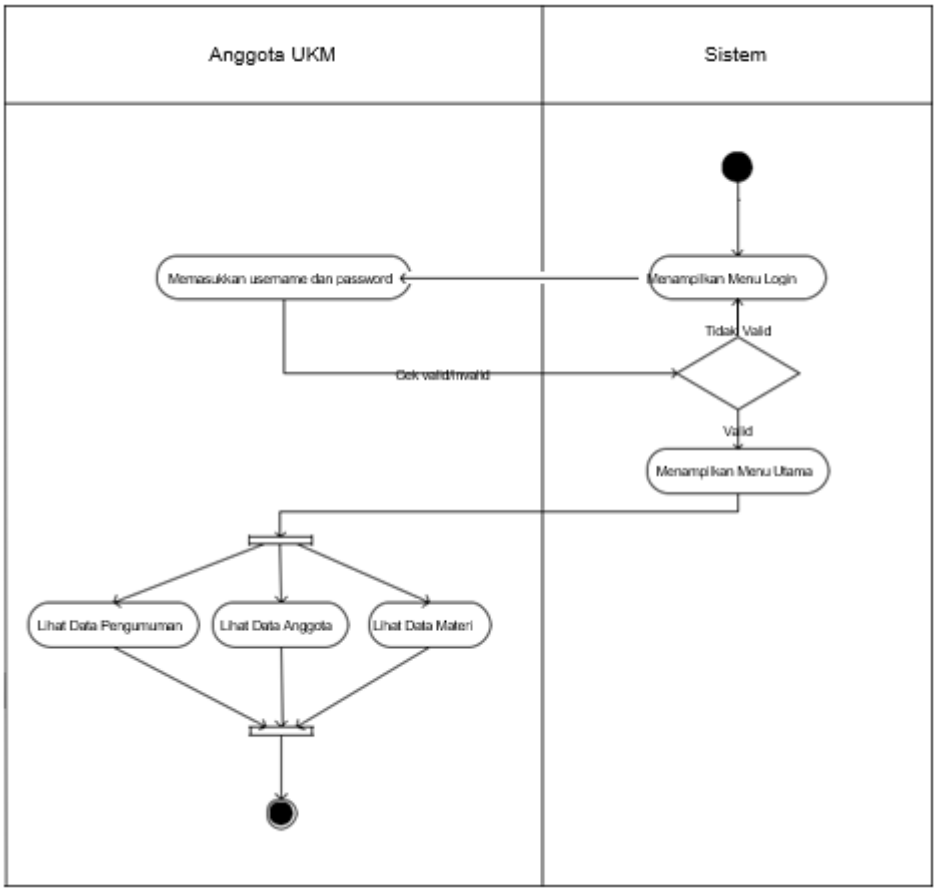

Figure 3. Activity Diagram of UKM Members

Discussion

In this study, researchers used black box testing to test the Univ. Labuhan Batu, as for what was tested on the Univ. Labuhan Batu is as follows:

a. Incorrect or non-existent function.
b. Interface errors
c. Errors in data structure and database access.
d. Performance errors

e. Initialization and termination errors.

The results of the tests carried out on the information system. The user uses an information system, then performs a test with the results as shown in table 1

Table 1. Testing Results of Black Box Testing Admin Login

No	Scenario Test	*Test Case*	Results that expected	Results Test	Kesim go home
1	Username and Password not filled then click button Login	Username : (empty) Passwords: (empty)	System will reject and show n message "Hope contents username and passwords"	Corresponding hope	Valid
2	typing an usernames, and password not filled or empty then click button Login	Username : admin Passwords: (empty)	System will reject and show n message "Password" not filled in yet"	Corresponding hope	Valid
3	typing an passwords, and username not filled or empty then click button Login	Username : (empty) Passwords: admin	System will reject and show n message "Username" not filled in yet"	Corresponding hope	Valid

In the final results of testing using black boxes, no errors or bugs were found in any information system functional testing process. And to be able to maintain the stability of the function of this information system, it is necessary to use procedures and clear user limits.

4. Conclusion

Based on the results of the research that has been done, it can be concluded that the Univ. Labuhan Batu can help prospective SME members in terms of SME registration, in addition to the Univ SME information system. Labuhan Batu can also help members of UKM Univ. Labuhan Batu, administrator of UKM Univ. Labuhan Batu and Student Affairs Univ. Labuhan Batu in checking attendance, activities, member data, monthly reports and announcements and materials.

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