

**IMPLEMENTATION OF THE RATIONAL UNIFIED PROCESS (RUP)
METHOD IN DESIGNING A WEB-BASED CERTIFICATION SCHEDULING
APPLICATION (CITATION) ON ITCC ITPLN****Hendra Jatnika, Mochamad Farid Rifai, Lydia Tiomas Evalien Napitupulu**

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Abstract

This study discusses the Certification Scheduling (SITASI) application / processing website that can manage data and schedule certification activities that aim to assist ITCC assistants and laboratory heads in carrying out certification activities. Difficulties in data management are known to still run sequentially using different software, causing inefficiencies in time utilization. In designing this application, using the RATIONAL UNIFIED PROCESS (RUP) method which ensures practical use of Unified Modeling Language (UML) or object-oriented. Based on the implementation of these methods in the design of the Citation application, it has been proven that the application can assist ITCC in managing data and scheduling certification to be integrated so that the creation of an integrated application door used for effective use of time is fulfilled. The results showed that the certification scheduling application was successfully implemented and can be accessed through a web browser. The app allows users to create certification schedules and manage certification participants easily. By using the RUP method, the development of certification scheduling applications becomes more structured and well organized. It is hoped that this application can provide benefits for users and help increase efficiency in managing certification schedules at ITCC ITPLN.

Keywords: RUP Method, ITCC, Certification Scheduling Data.**INTRODUCTION**

Information Technology Certification Center (ITCC) is one of the laboratories owned by ITPLN which is devoted to carrying out Certification activities, especially in the field of Information and Technology. ITPLN ITPLN has obtained authorization rights from Certiport Inc (Aritonang et al., 2019). Data management at ITCC is arranged in sequence starting from registering, recapping participant data, compiling certification schedules, recapping participant data and schedules, trainers and proctors, and sharing them. ITCC Participants, Trainers, and Proctors are part of ITCC resources, ITPLN Management also participates as one of ITCC's resources.

Along with the development of ITCC every year, ITCC manages certification data and certification scheduling quite well and continues to carry out its activities (Ambasta, 2017). However, some difficulties are seen in preparing and organizing it. This difficulty is seen by the author because the author sees that ITCC assistants need one to three days to prepare data by combining several data into one door to be directly managed by the assistant (Tekouabou et al., 2022). The management of certification

activity data along with certification scheduling also uses office 365 such as Microsoft Excel, Microsoft Form, Microsoft Word, and Microsoft Power Automate, which are processed sequentially in several different software, causing an inefficient effect in utilizing time to manage certification data and certification schedule (Tuinema et al., 2020).

Rational Unified Process (RUP) is an approach that ensures the realization of high quality involving iterative and incremental processes and efficient software development (Edeki, 2013). RUP is a complex structure where information or data systems are integrated practically using Unified Modelling Language (UML) or object-oriented (Jacob & Mihălcescu, 2021).

The application of the Rational Unified Process (RUP) method to design sitasi applications can help researchers with the application of UML which is iterative and oriented on objects that make the design of this application structure. In the design of the sitasi application using PHP programming language and using MySQL as a database management for data storage (Kroll & Kruchten, 2003).

The purpose of the research is to increase the effectiveness and efficiency of application development by following the RUP, application development can be carried out systematically and structured, so as to increase the effectiveness and efficiency of application development. As for the benefits of Structured and well-organized research, RUP provides practical guidance in the development of a well-structured and organized system. Each stage of software development is carried out in a structured manner, making it easier to manage risk and quality at each stage.

RESEARCH METHODS

The RUP method is an object-oriented software development and its design. RUP uses models extensively using the Unified Modeling Language (UML), which consists of a collection of semiformal graphical notations and has become the standard tool for object-oriented modeling (Snoeck & Snoeck, 2014). This facilitates the construction of multiple software system displays. Notation includes use cases, activities, classes, objects, interactions, and other diagrams. Use cases are at the core of RUP because they lay the foundation for further development. Use cases also drive the design, implementation, and testing (the entire development process) of software systems (Reyes-Delgado et al., 2016). RUP is iterative and incremental because it repeats a series of iterations that make up the life cycle of a system (Versteegen & Versteegen, 2000). The picture below is an explanation of the two phases that exist in the application using the RUP method.

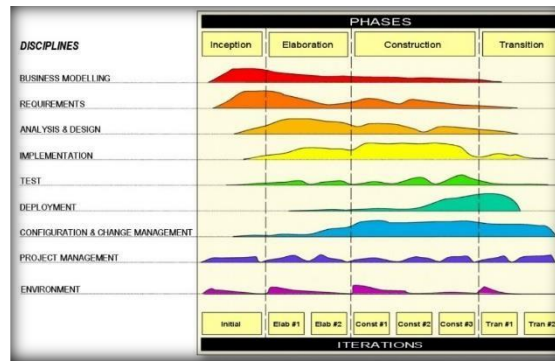


Figure 1 RUP Method Phase

Analysis and Design

Analysis and Design is an activity that shows how a system will run its implementation during the implementation phase (Poduval et al., 2015). The existence of program code abstraction is a function of the design model (Yu et al., 2020). Proper analysis and design can describe a system architecture that is structured according to system requirements (Christensen et al., 2014).

Implementation

Implementation is the result of coding integration which will later become a system to be executed or used (Mossige et al., 2015). Good implementation will result in a system that is managed as per user needs that can be reused or developed (Joensuu et al., 2020).

Research Design

The following are the stages of research design carried out by the author, explain in the form of a flowchart and explanation of the system scenario.

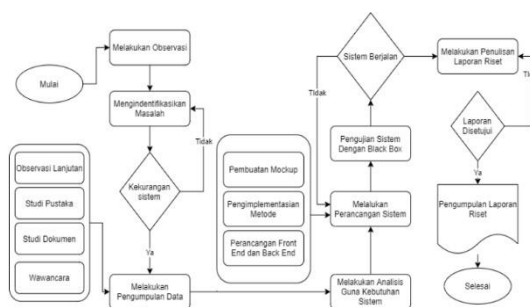


Figure 2 Research Design

RESULTS AND DISCUSSION

A. Certification Data Management Recap View

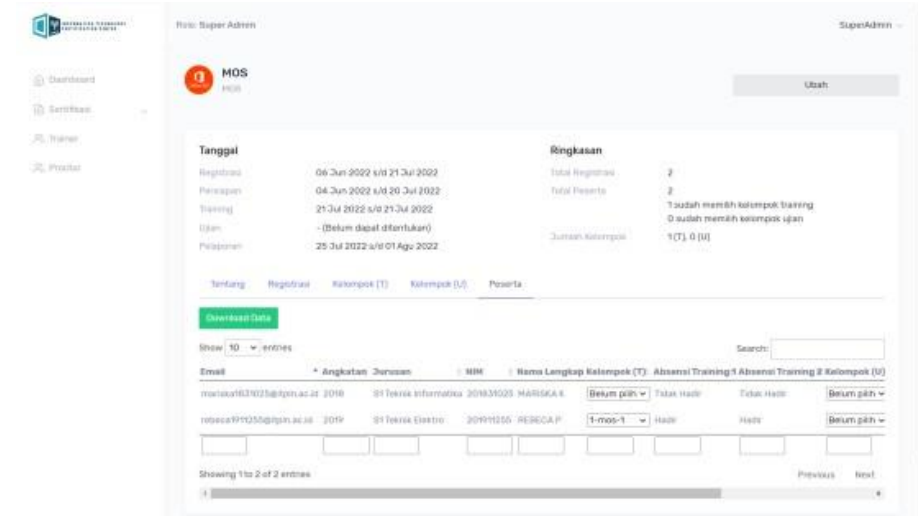


Figure 3 Certification Data Management View

B. Certification Scheduling Certification Scheduling can be found directly on the main dashboard.



Figure 4 Trainer Certification Activity Schedule



Figure 5 Proctor Certification Activity Schedule

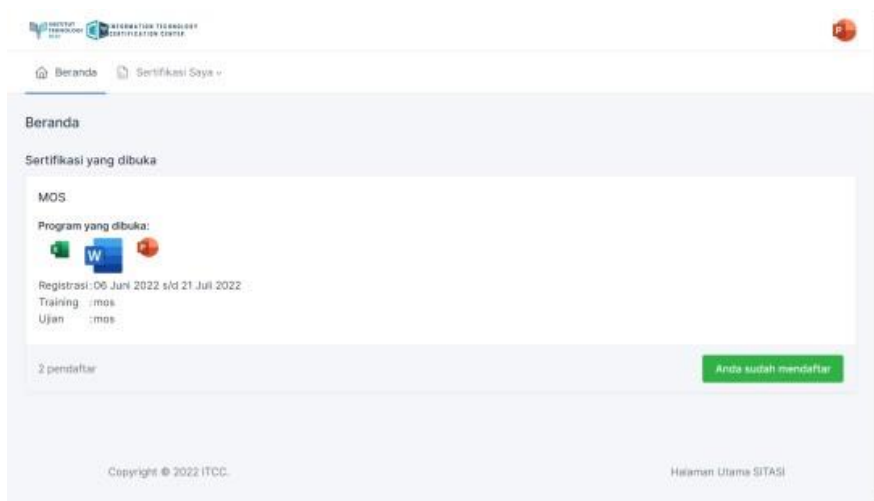


Figure 6 Participant Certification Activity Schedule

CONCLUSION

The results of the research conducted until the writing of this report can be taken and can be concluded as follows: (1) ITCC ITPLN is a laboratory centered on certification in the field of technology and information since 2016. The implementation process is also arranged using several separate software and is done in sequence, causing inefficiency in the use of time in managing certification activity data. (2) Implementation of the Rational Unified Process (RUP) method in the SITASI application (ITCC information system) so that it can be used as an alternative utilization option in time efficiency for data management of certification activities and certification schedule. (3) Based on the results of testing that have been carried out by the author through several stages of the sites application in managing training data and scheduling certification activities at its plan with the application of the rational unified process (rup) approach, it is said to be successful and can be applied to its plan.

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