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# Implementation of WYSIWYG in the Development of ITCC ITPLN Letter Management Information System

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**Abstract**

Information Technology Certification Center (ITCC) is a laboratory focused on Certification activities in Information and Technology. Currently, ITCC uses a manual system with Microsoft Excel for creating letter numbers, which is time-consuming and prone to data loss due to unintegrated storage. To solve this, the author developed a letter archive application using the Rapid Application Development (RAD) model, which accelerates the development process by producing incremental software versions. This application improves the efficiency of numbering and securely storing mail archives while providing a WYSIWYG editor for easy document editing.

**Keywords**: Rapid Application Development (RAD) Model, Mail Archive, What You See Is What You Get (WYSIWYG)

***Abstract***

*Information Technology Certification Center (ITCC) adalah laboratorium yang fokus pada kegiatan sertifikasi di bidang Informasi dan Teknologi. Saat ini, ITCC masih menggunakan sistem manual dengan Microsoft Excel untuk pembuatan nomor surat, yang memakan waktu lama dan rentan terhadap kehilangan data karena penyimpanan yang tidak terintegrasi. Untuk mengatasi masalah ini, peneliti mengembangkan aplikasi arsip surat menggunakan model Rapid Application Development (RAD), yang mempercepat proses pengembangan dengan menghasilkan versi perangkat lunak secara bertahap. Aplikasi ini meningkatkan efisiensi penomoran dan penyimpanan arsip surat secara lebih aman, serta menyediakan editor WYSIWYG untuk memudahkan pengeditan dokumen.*

***Kata-kata kunci:*** *Model Rapid Application Development (RAD), Arsip Surat, What You See Is WhatYou Get (WYSIWYG)*

## 1. Introduction

Technological advances make every individual motivated to always find new things in providing information according to what is needed [1]. The use of computers is one of the tools to achieve greater ease of work. The use of computers as a tool in the business world covers various aspects such as data processing [2].

At ITCC (Information Technology Certification Center) there are assistants who process data that has not been integrated with the database. In addition, obstacles were found such as the same letter number in two events, document searches that took longer and the vulnerability of document storage on the personal assistant's laptop. ITCC needs a website-based letter management system to help in creating letter numbers, editing and searching for documents and even storing them [3].

The method used to realize this system is Rapid Application Development (RAD), which is software development and is based on the same principles in a short time and fast adaptation [4]. In addition, this system uses the Froala library which implements What You See Is What You Get (WYSIWYG) to facilitate users in editing [5].

## 2. Method

### 2.1 Rapid Application Development (RAD) Method

This research uses the RAD method which focuses on users and provides development facilities and can be completed more quickly with quality results [6].

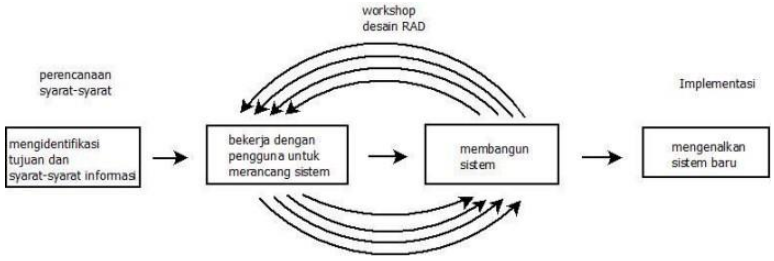


**Figure 1**. Concept

The stages that must be passed in the RAD method are Requirements Planning, RAD Workshop, Implementation [7].

### 2.2 *Requirements Planning*

The needs analysis conducted was observation, interview and document study. The researcher conducted direct discussions with the Head and Assistant of ITCC to analyze data

related to the system.

### 2.3 RAD Workshop

In the RAD Workshop, researchers held discussions with related parties to determine the functionality of the system. The results of the discussion were: **[8]**

**Table 1.** System Functionality

| Users | Required functions |
|---|---|
| Super admin | *Login*<br>View user reports Manage registration data<br>View document report<br>Document management<br>Document verification<br>Search and view documents<br>Document revision/validation<br>*Logout* |
| User | *Login*<br>View document reports<br>Document management Search and view documents Document revision/validation<br>*Logout* |

1. *Use case*diagram

*Use case* The diagram illustrates developers and users in understanding the flow of the system being built.

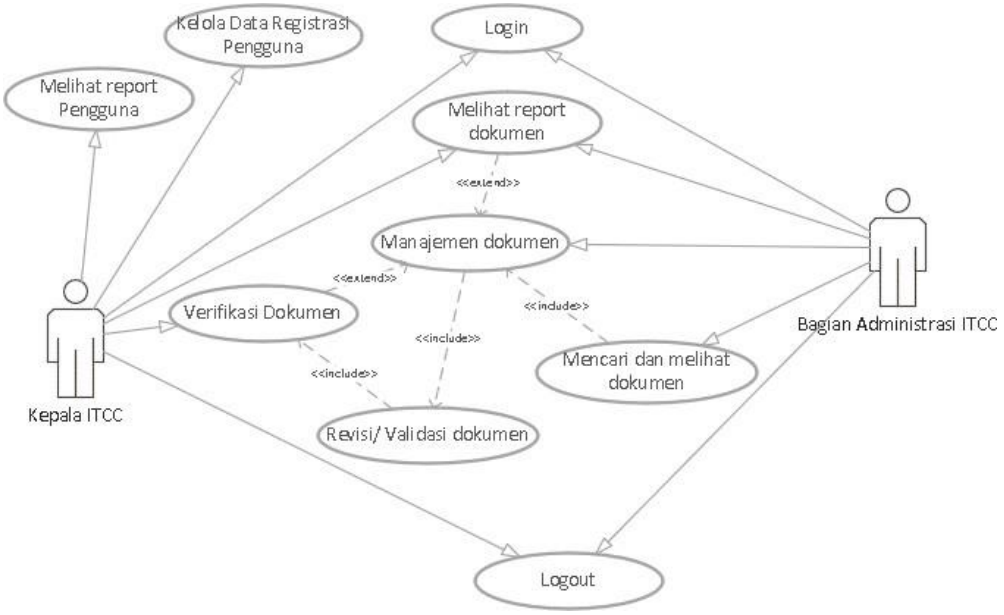


**Figure 2.** Use Case Diagram

2. *Class*diagram

The following is a class diagram in the system created in the letter archive system.

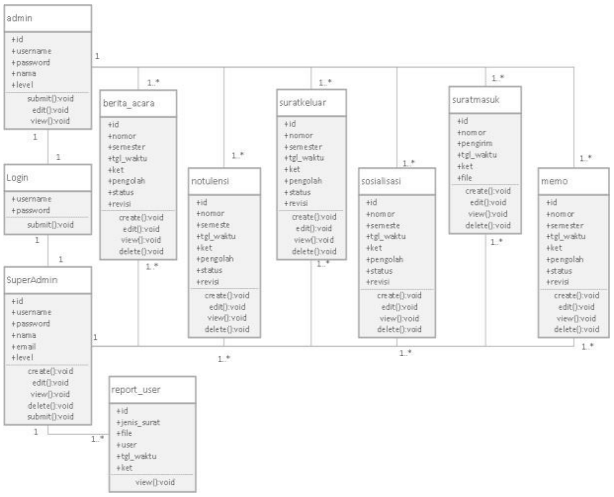


**Figure 3.** Class Diagram

3. *Activities*diagram

Used to illustrate each stage built into the system to be created.

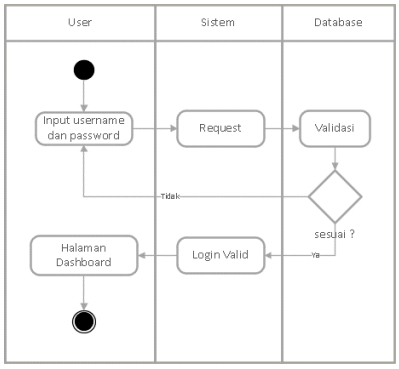


**Figure 4.** Login Activity Diagram

4. *Sequence*diagram

Illustrates the relationships between objects arranged chronologically and shows the respective procedures.

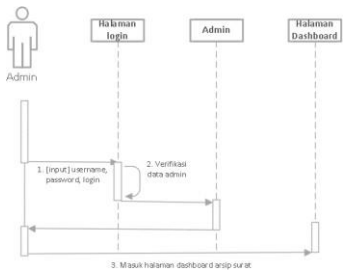


**Figure 5.** Admin Login Sequence Diagram

## 3. Results and Discussion

Following are the results of the application design that has been created.


**Figure 6.** Applicaton login page view

**Figure 6,** is the initial login display of the ITCC letter archive system. Users are asked to input the username and password that has been created by the Super Admin. This system can be accessed if the device used is connected to the internet.

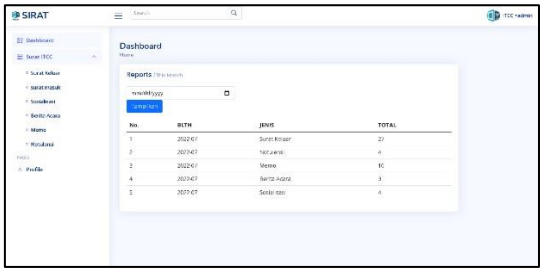


**Figure 7.** User Dashboard

The display that appears after the super admin and admin have successfully logged in is as shown in **Figure 7**. Admins or regular users cannot create account registrations.

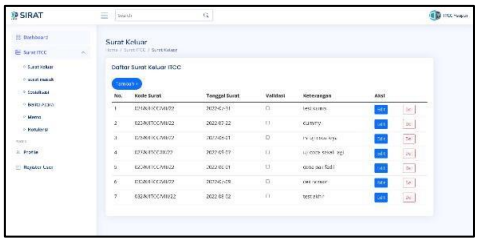


**Figure 8**. List of outgoing mail tables

In the outgoing mail type menu, Users can perform actions such as adding, editing and deleting. Super admin can validate documents that have been created by Users so that it can be known whether the document needs to be revised or not.

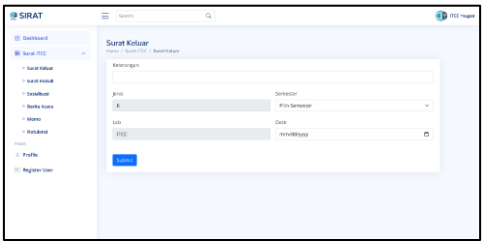


**Figure 9**. Outgoing letter numbering form

In creating outgoing letters, the User will be asked to enter the required data. The display of the required data is as in Figure 9.

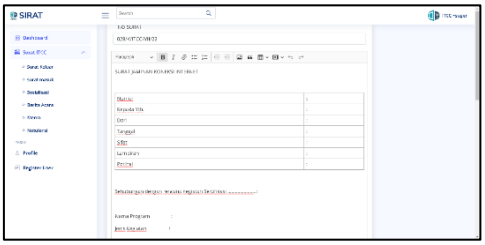

Figure 10 Wysiwyg outgoing mail

The display of what you see is what you get on outgoing mail is as shown in Figure 10. This display will also appear when the user makes an edit.**[9]**.

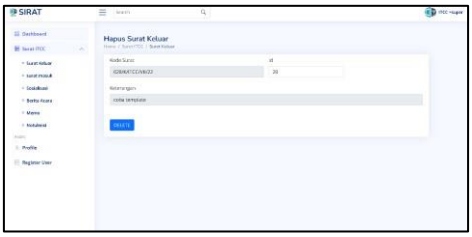

**Figure 11**. Delete outgoing mail

The view of deleting outgoing mail in **Figure 11** contains code, id and description, after the User deletes the data, the row number in the data will also be deleted. System testing was carried out using the blackbox method with the following results.

Table 3. System testing

| No. | *Use case* | Results Test | Name Tester* | Date Testing |
|---|---|---|---|---|
| 1 | *Use case*Test: Login<br>Description:<br>Perform account validation against registered users Test case<br>*Username*:zakiyaviantika@gmail.com<br>*Password*: zakiya Desired result:<br>- If successful, the user will enter the dashboard home page.<br>- If it fails, the user will return to the login page. | Succeed<br><br>Succeed | Lilies<br><br>Jatnika | July 12 2020<br><br>July 15 2020 |
| 2 | *Use Case*test: Document management<br>Description:<br>Perform ITCC letter data processing<br>1. Outgoing mail<br>a. Add: itcc testing<br>b. Edit: testing itcc<br>c. Delete: testing itcc<br>2. Incoming mail<br>a. Add: itcc testing<br>b. Download: testing itcc<br>c. Delete: testing itcc | Succeed | Lilies | July 12 2020 |

| No. | *Use case* | Results Test | Name Tester* | Date Testing |
|---|---|---|---|---|
| | 3. Socialization<br>a. Add: itcc testing<br>b. Edit: testing itcc<br>c. Delete: testing itcc<br>4. News<br>a. Add: itcc testing<br>b. Edit: testing itcc<br>c. Delete: testing itcc<br>5. Memo<br>a. Add: itcc testing<br>b. Edit: testing itcc<br>c. Delete: testing itcc<br>6. Minutes<br>a. Add: itcc testing<br>b. Edit: testing itcc<br>c. Delete: testing itcc Expected result:<br>- If the whole management is successful and carries out orders as expected<br>- If document management fails then a message will appear that the data entered is invalid | Succeed | Jatnika | July 15 2020 |
| 3 | *Use Case*Test: Change password<br>Description:<br>Change User password.<br>Test Case:<br>*Username*:zakiyaviantika@gmail.com<br>*Password*: zakiya New Password: viantika Desired result:<br>- If the password change is successful, the system will replace the password data in the database.<br>- If the password change fails, the display will reload. | Succeed | Jatnika | July 12 2020 |
| 4 | *Use Case*Test: Add User<br>Description:<br>Adding Users<br>Test cases:<br>*Username*:liliescahyanti@gmail.com<br>*Password*: lilies<br>Expected results:<br>- If succeed added, willenter the database<br>- If it fails, the display will reload. | Succeed | Jatnika | July 12 2020 |
| 5 | *Use Case*Test: Document revision/validation<br>Description:<br>Perform document revisions/validation for each type of letter<br>Test cases:<br>*Username*:hendrajatnika@gmail.com<br>*Password*:hendra Desired result:<br>- If successfully validated, it will appear check the checkbox<br>- If it fails, no check mark will appear in the checkbox. | Succeed | Jatnika | July 12 2020 |
| 6 | *Use Case*Test: Delete User<br>Description:<br>Perform User deletion<br>Test cases:<br>*Username*:liliescahyanti@gmail.com<br>*Password*: lilies | Succeed | Jatnika | July 12 |

| No. | *Use case* | Results Test | Name Tester* | Date Testing |
|---|---|---|---|---|
| | Expected results:<br>- If successfully deleted, it will go to *database*and failed to login<br>- If the deletion is unsuccessful, the display will reload. | | | 2020 |
| 7 | *Use Case*Test: Logout<br>Description:<br>Perform User logout<br>Test cases:<br>*Username*:zakiyaviantika@gmail.com<br>*Password*: zakiya Expected results:<br>- If successful, you will be taken to the login page.<br>- If it is not successful, the display will reload. | Succeed | Jatnika | July 12 2020 |
| 8 | *Use Case*Test: Table<br>Description:<br>Displays the number of letters that have been created by ITCC.<br>Expected results:<br>The graph will display the total of all types of letters that have been created. | Succeed<br>Succeed | Lilies<br>Jatnika | July 12 2020<br>July 15 2020 |

## 4. Conclusion

Implementation *What You See Is What You Get*(WYSIWYG) on ITCC letter archives with the Rapid Application Development (RAD) model makes it easier to create letter numbers and edit documents. The RAD method has special advantages, namely faster and more effective process integration and can reuse previously existing components (reusable objects) so that there is no need to start from scratch again.

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