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Development and Design of PDI Perjuangan Membership Application Information System for Pasuruan Regency

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Abstract. This research aims to develop and design a membership application information system for PDI Perjuangan Pasuruan Regency to improve the efficiency of member data management. By using the methodology of needs analysis, system design, and application development, this system is developed with PHP programming language and MySQL database. The result is an application that allows administrators to manage membership data effectively, including new member registration and member data search features. This application is expected to simplify administration and improve the quality of service to party members.

Keywords: Information System, Membership, PDI Perjuangan, Data Management, Application, Pasuruan Regency

1 Introduction

In recent decades, the development of information technology has brought significant changes in various aspects of life, including in the political world. Political parties, as organizations that require good data management, have also begun to adopt this technology to improve their operational efficiency[1]. One important aspect of party management is membership management, which involves collecting, maintaining, and utilizing member data appropriately and accurately[3]. In the digital era, the need for an information system capable of handling these tasks efficiently has become increasingly urgent[4].

PDI Perjuangan, as one of the largest political parties in Indonesia, has a very large number of members spread across various regions, including Pasuruan Regency[5]. Effective membership management becomes very important for the party to maintain the trust of its members and support various political activities[6]. However, membership management that is still done manually or using a less integrated system often causes various problems, such as difficulties in searching data, errors in recording information, and the inability to process data in real-time[7].

Pasuruan Regency, as one of the regions with a significant number of PDI Perjuangan members, faces challenges in managing this membership data. The current system is unable to meet the party's needs to manage data quickly and accurately[8]. This can have a negative impact on the party's operational efficiency, especially in terms of communication with members, campaign planning, and data-based decision making[9]. Therefore, a membership information system is needed that can overcome these problems and provide more effective solutions.

This research aims to develop and design a membership application information system that can meet the needs of PDI Perjuangan Pasuruan Regency [10]. This system is expected to provide features that support the management of membership data as a whole, starting from registering new members, maintaining member data, to reporting information needed by party administrators [11]. With an integrated system, it is expected that the membership administration process can run more smoothly, faster, and more accurately.

Ultimately, the development of this information system not only aims to improve the work efficiency of party administrators, but also to improve the quality of services to members [12]. With a well-designed system, party members will have easier and faster access to the information they need. In addition, the party will also be able to make better decisions based on accurate and up-to-date data. Thus, it is hoped that this research can make a positive contribution to the management of PDI Perjuangan membership in Pasuruan Regency and become a model that can be applied in other regions.

2 Methods

The research method is an activity carried out to solve a problem to find the right solution. In this study the authors made a case study and created an application based on the needs of the rapid application development

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method. This method includes interview techniques, observation and literature research [13]. Rapid Application Development (RAD) is a prototype development process model that belongs to the incremental technology group or can also be called a multi-level design group. This method emphasizes a development cycle that takes a short and fast time. The following is a process model of the stages of research to be carried out:

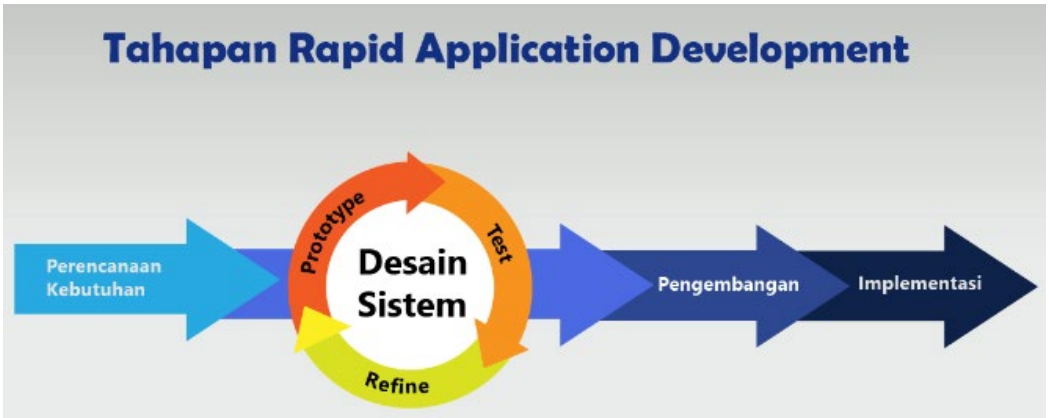

Figure 1. RAD Method

The RAD (Rapid Application Development) method is a software development approach that emphasizes rapid iteration and the use of prototypes to get rapid feedback from users. The following is an explanation of the RAD Method process model:

a. Planning: The initial stage in the RAD Method is planning, where the project team determines the project scope, goals, and user needs. Planning also includes resource identification, scheduling, and risk mapping.
b. Analysis: In the analysis stage, the project team works closely with stakeholders to identify the functional and non-functional needs of the system. This process focuses on a deep understanding of the problem that the system will solve.
c. Design: The design stage involves developing the architectural design of the system and the detailed design of the software components. This design is done by considering the user requirements, security, scalability, and performance of the system.
d. Construction: The construction phase involves developing the software according to the approved design. The project team uses an iterative approach to produce prototypes and system features in stages.
e. Testing: Once development is complete, the system is tested to ensure that it meets user needs and functional specifications. Trials are conducted continuously throughout the development iterations to ensure the quality and reliability of the system.
f. Implementation: The implementation stage involves deploying the system to a production or production environment. This includes user training, data migration, and applying changes to the production environment.
g. Evaluation: After implementation, the system is evaluated to ensure that it meets the initial goals and expectations. Evaluation also includes monitoring system performance and collecting feedback from users.

Process model The RAD method differs from the traditional software development process model due to its emphasis on rapid iteration and the use of prototypes. This allows developers to produce deployable software more quickly while maintaining the flexibility to accommodate changing user needs that may occur during development.

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3 Results and Discussion

3.1 System Design

3.1.1 Database

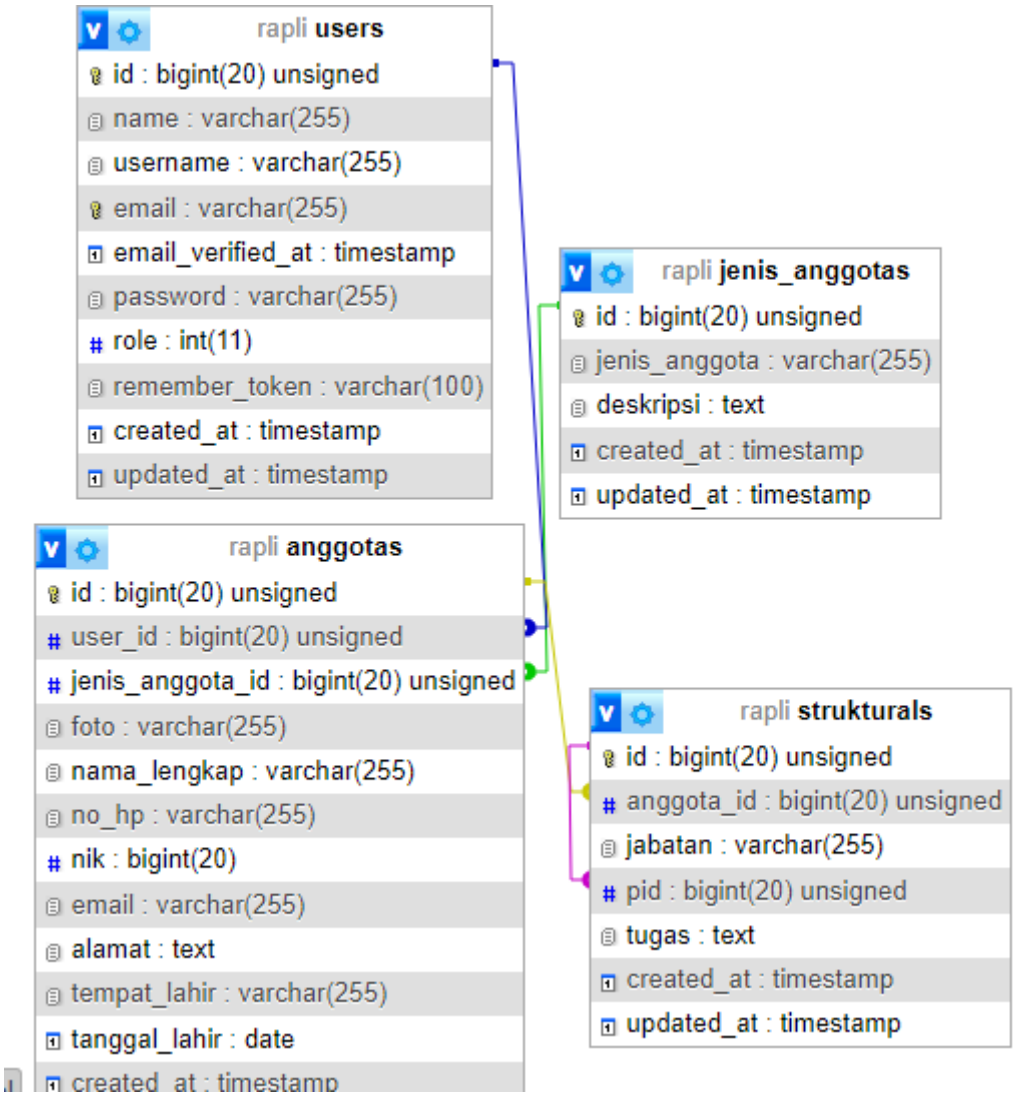

Figure 2. Database

In Figure 3.1 explains the Class Diagram of the user can see the latest activities, member data, KTA (Member Identity Card) and profile as well as the user can change the account password on the DPC membership application of the Indonesian Democratic Party (PDI) in Pasuruan Regency.

3.1.2 Flowchart

Flowchart is a visual representation of a workflow or process that describes the steps that must be taken to complete a task][14 . Flowcharts make it easier to understand the flow of a process, identify potential problems, and improve efficiency, so they are very useful in planning, analyzing, and managing projects or systems. The results of this study there are 2 users, namely Admin and User.

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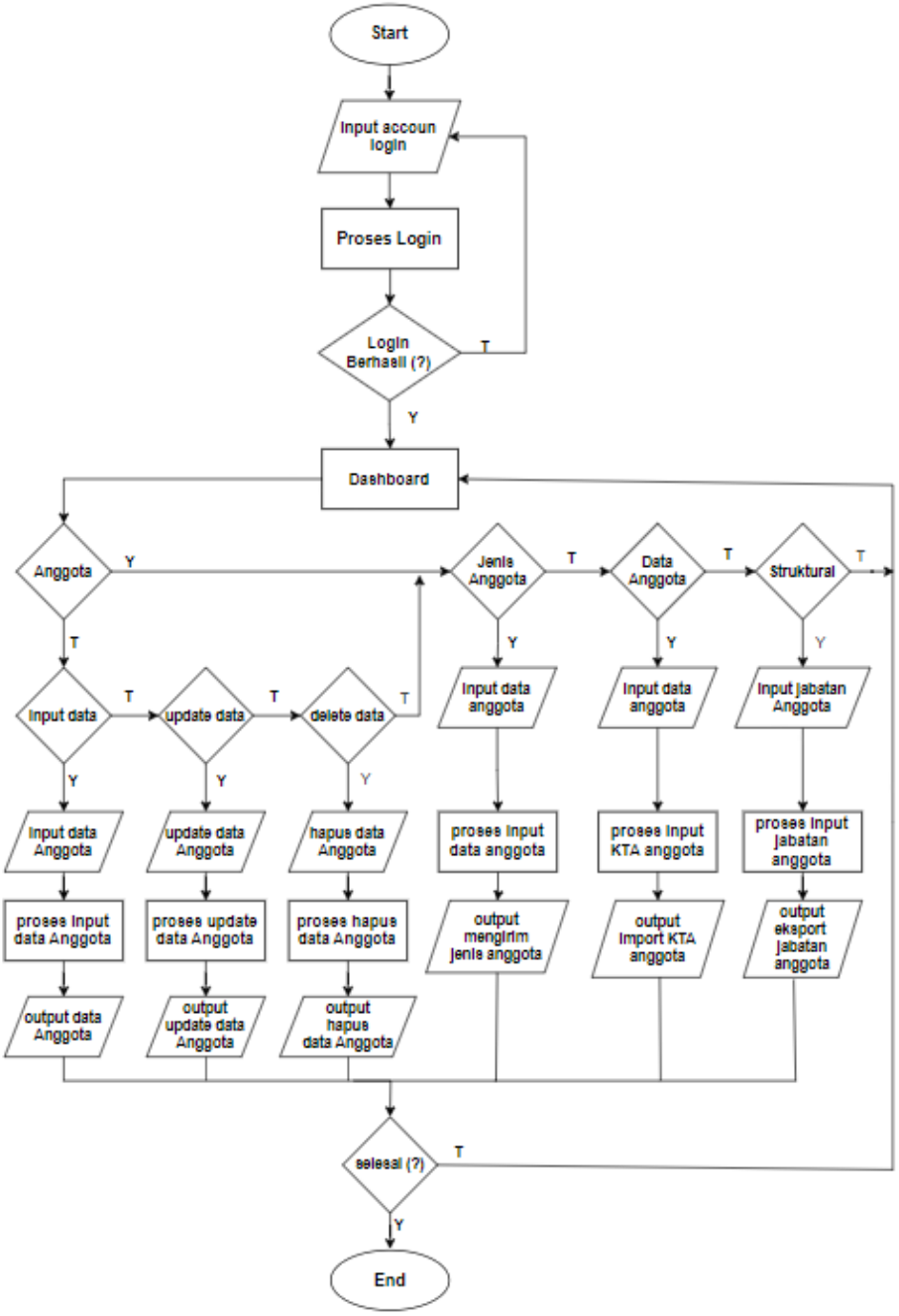

Figure 3. Admin Flowchart

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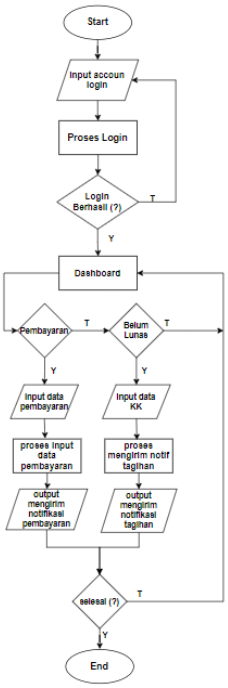

Figure 4. Flowcart Management

In the system there are 2 levels of users, namely admin and administrator, which when successfully logged in displays a different display and when it fails it will return to the login page.

a. When successfully logged in as an admin, the admin view appears, in which he can carry out all activities on the system, such as managing members, member types, member data, and structural members. Furthermore, the admin can log out, otherwise the admin returns to the view.
b. When successfully logged in as an administrator, the user view appears. Users here can only be limited to doing or seeing what activities will be carried out in the future by the party. Then the user can log out, otherwise the user returns to the member data display.

3.1.3 Use Case Diagram

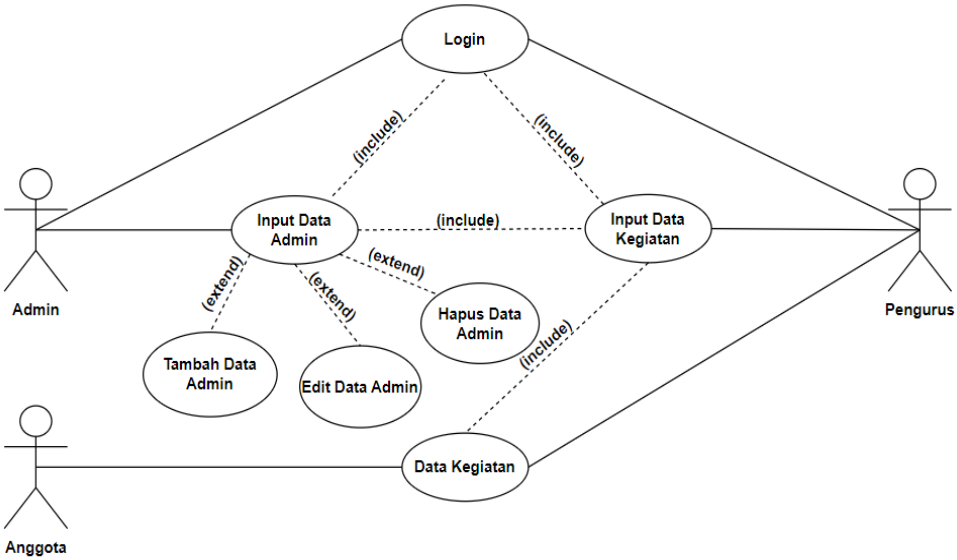

Figure 5. Uce Case Diagram

Based on Figure 5 is a use case diagram on the E-Member Application. Admin has full access to manage Member Data, while Users have access to view Activity Data, and for a complete explanation as follows:

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a. Admin: people who create user administrators and manage admin.
b. Management: people who enter activity data and send activity data.
c. Member : a person who can only get.
d. Login: the first page that appears in the application as a user gate to enter the system.
e. Manage Admin: when the user logs in as an admin, they can perform CRUD (create, read, update, delete) on member head data.
f. Activity: when the user logs in as an administrator, they can enter activity data.
g. Activity data: when the administrator has entered activity data, the activity will be sent to members.

3.2 Interface Design

3.2.1 Application for Admin

A.

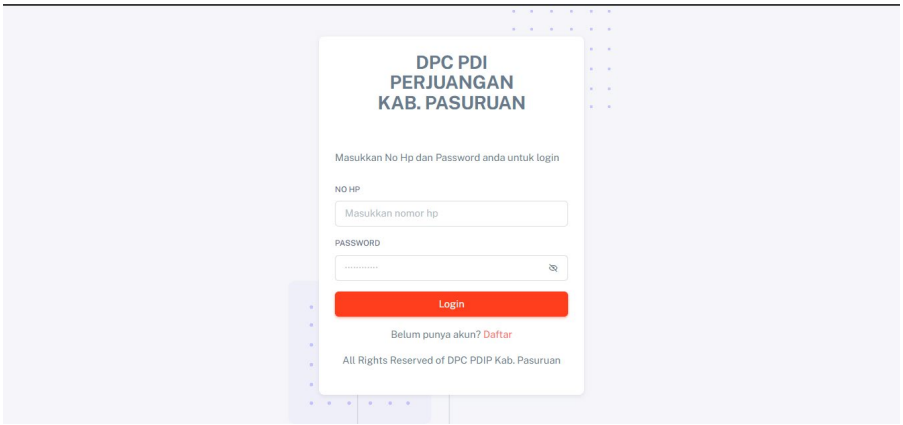

Figure 6. Admin Login Page

In Figure 3.5 is an image of the Login display and page when there are members who want to register with a political party organization.

B. Dasboard Page

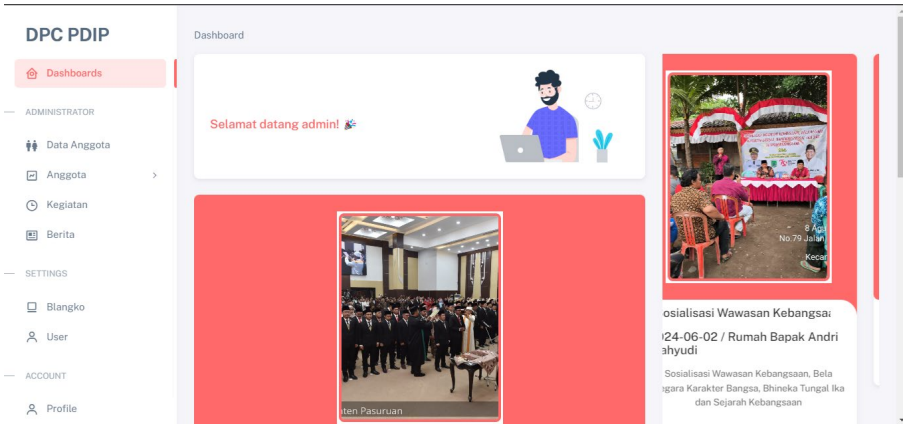

Figure 7. Dasboard Page

In Figure 3.6 is a view of the Dasboard page when the Admin after a successful login.

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C. Member Data Page

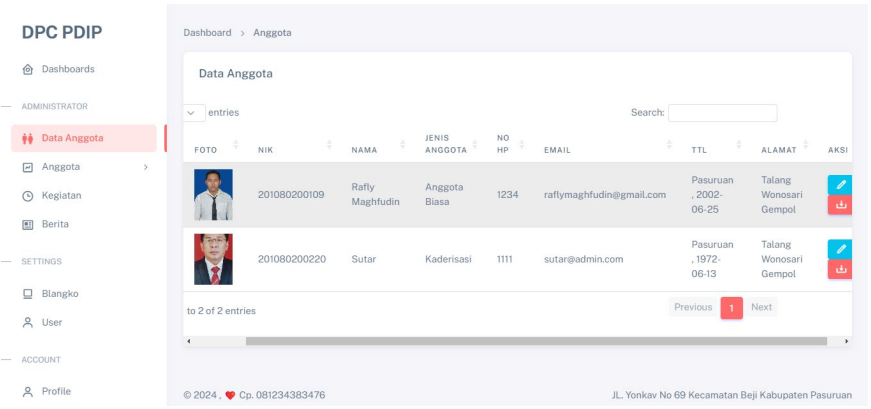

Figure 8. Member Data Page

In Figure 3.7 is a member page that displays member data and administrators can also add member types to the menu.

D. Member Type Display

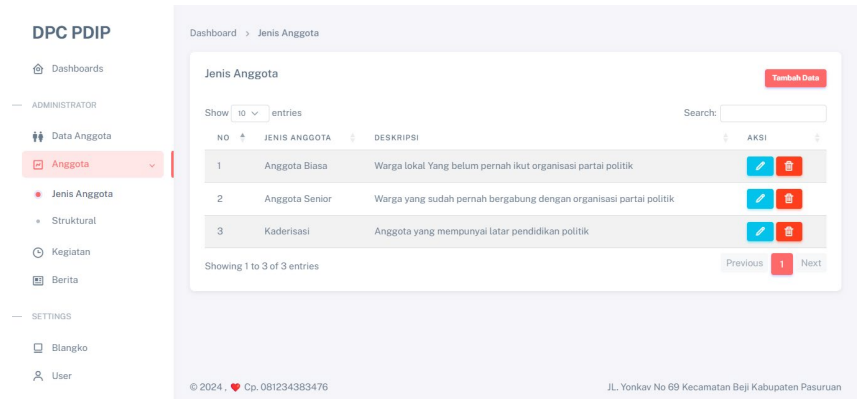

Figure 9. Member Type Display

In Figure 3.8 explains the member type menu, administrators can add types of members according to the types of members in the district-level political party organization.

E. Structural Menu Page

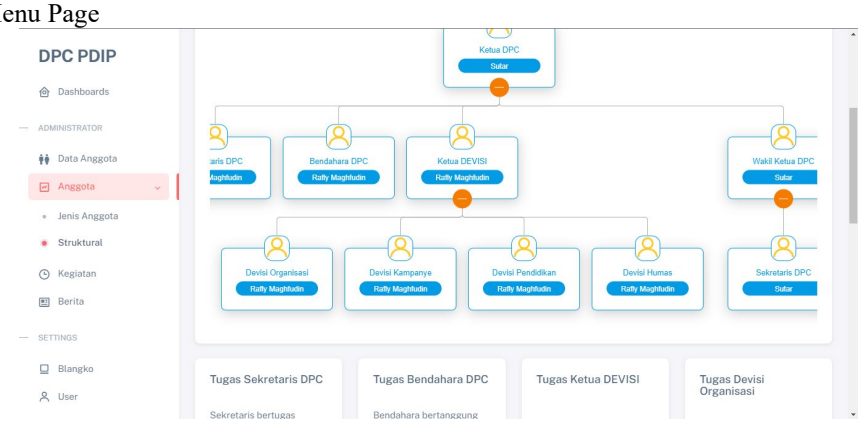

Figure 10. Structural Menu Page

In Figure 3.9 explains the structural menu, the management can add positions to the menu and also add a description of the position which is explained below.

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F. Activity Display

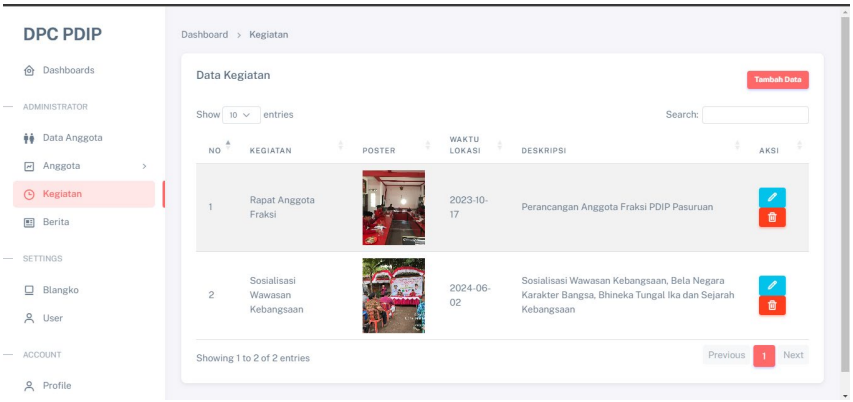

Figure 11. Activity Display

In Figure 3.10 explains that administrators can add activity data in the form of activities that will be carried out or activities that have been carried out.

G. News Display

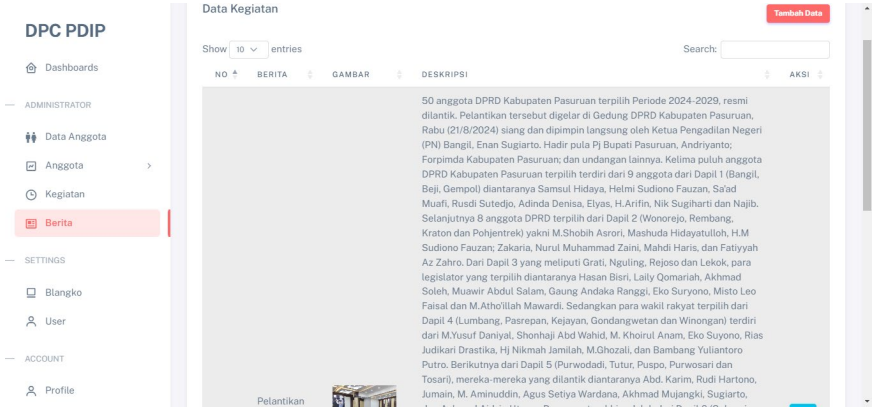

Figure 12. News Display

In Figure 3.11 describes the news page, administrators can add news related to what is happening now and within the scope of the Pasuruan district.

H. Blangko Page

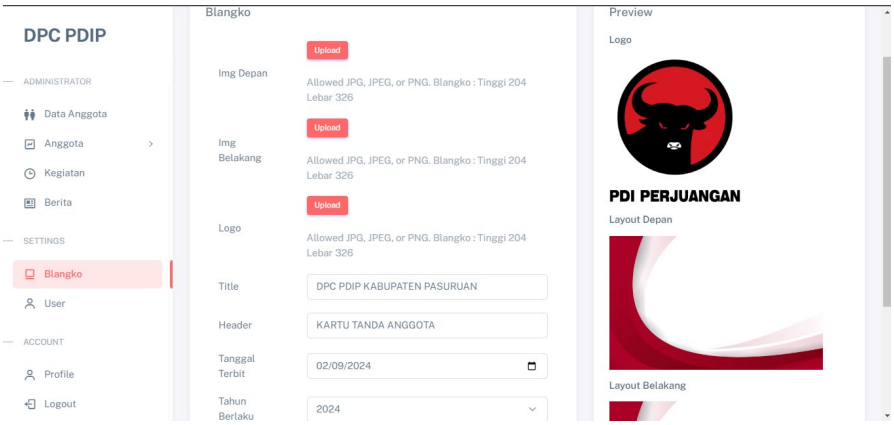

Figure 13. NBlangko Page

In Figure 3.12 explains the blank page which is useful for printing Member Sign Cards, administrators can input the front page, back page, and logo.

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I. Member Sign Card

Figure 14. Member Sign Card

In Figure 3.13 displays the Member Sign Card when the admin administrator prints the card in Figure 3.7 Member Data Page.

J. New Member List

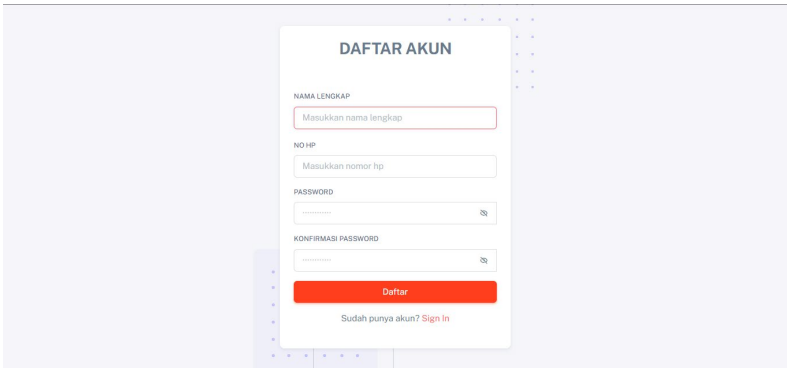

Figure 15. New Member List

In Figure 3.14 displays members who want to register there are three columns that need to be inputted Full Name, Cellphone Number, and Password after the member registers can login using the cellphone number and passwword that has been created.

K. Member Login Page

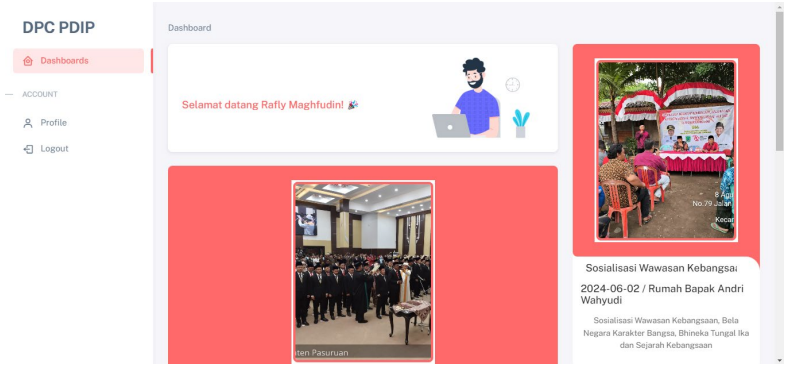

Figure 16. Member Login Page

In Figure 3.15 displays members when they first log in, in the Dashboards view of members there is activity data and also the latest news.

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L. Member Profile Menu

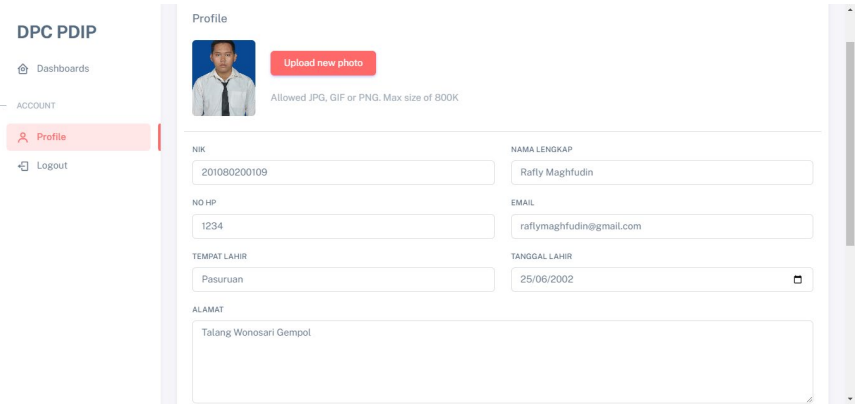

Figure 17. Member Profile Menu

In Figure 3.16 displays Member Profile Data, and members must fill in complete data including NIK, Cellphone Number, Place of Birth, Email, Date of Birth, photo input, and Full Address, after filling in the data members can save the data.

4 Results of Blackbox Testing

Black box testing is a software testing method in which testers evaluate the functionality of an application without knowing its internal structure or source code][15 . The main focus of these tests is to check whether certain inputs produce expected outputs, according to predefined specifications. Thus, this test assesses the performance of the application based on external interactions and does not pay attention to how the application works inside. The following are the results of Blackbox Testing in Table 3.1 Blackbox testing

Table 1. Blackbox Testing

Scenario Management Login	Input Phone Number and Password	Output Admin will enter the Dasboard page	Result Fulfilled
Management View Member Data and Input Member Type	Edit data Add Member Type	Member data list will be changed	Fulfilled
Manager Adds member types in the Member-Member Type menu	Add Data, Member Type, Description	The list of member types will increase	Fulfilled
Manager Add Position in Structural Menu	Add Data, Name. Position, Parent, Duties	Structural Data and its Explanation will be added	Fulfilled
Management Adds Activity Data in the Activity Menu	Add Data, Activity Name, Poster, Time, Location, Description	The list of activity data will increase	Fulfilled
Management Edits Activity Data in the Activity Menu	Edit, Activity Name, Poster, Time, Location, Description	Activity data list will be changed	Fulfilled
Management Deleting Activity Data on the Activity Menu	Select the data to be deleted then press delete	List of activity data will be deleted	Fulfilled
Manager Adds News Data to the News Menu	Select the data to be deleted then press delete	List of news data will be deleted	Fulfilled
Management Edit News Data on the News Menu	Edit, News, Image, Description	List of news data will be changed	Fulfilled
Manager Enters Blank on Blank Menu	Front Img, Back Img, Logo, Title, Header, Issue Date, Valid Year	Blank data will be saved	Fulfilled
Management Edits Blank Data in the Blank Menu	Front Img, Back Img, Logo, Title, Header, Issue Date, Valid Year	The blank data will be changed	Fulfilled

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Member Login	Cell phone number, password	Member Dashboard Page Appears	Fulfilled
Member Completes Personal Data on Profile Menu	Photo, VIN, Phone Number, Place of Birth, Address, Full Name, Email, Address	Member data will be changed	Fulfilled
Member Edit Personal Data in Profile Menu	Photo, VIN, Phone Number, Place of Birth, Address, Full Name, Email, Address	Member Data	Fulfilled

Table 1 is a test scenario on the PDI Perjuangan Membership Application Information System Pasuruan Regency. Based on the research and trials that have been carried out, the results obtained are the Membership Application Information System for local residents to register and participate in membership activities successfully created and tested.

5 Conclusion

The conclusion of this research shows that the development and design of the PDI Perjuangan Pasuruan Regency membership application information system has succeeded in increasing efficiency and effectiveness in managing member data. The system developed is able to overcome problems that arise from manual management, such as recording errors and slow administrative processes, as well as providing faster and more accurate access to information for party officials. The implementation of this system not only strengthens the relationship between the party and its members, but also has the potential to become a model that can be applied in other regions to support better membership management.

6 Acknowledgments

Hopefully this research will provide benefits and deep understanding for the readers. Thank you to all those who have participated in the process of writing and preparing this paper. The support and contributions provided by various parties during the research and writing stages are very meaningful. Without their help, this paper would never have been realized.

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