



Development Of Community Research & Information System Application For Web-Based National University Lecturers

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ABSTRACT

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(LPPM) National University Research and Community Service Institute in general is research and community service aimed at improving the quality of human resources by conducting targeted research so that research results can be used according to community demands. In addition, this institution also facilitates and implements research results as a service work that is beneficial to the community. During this time the administrative process in reporting the results of research carried out by accessing the website contained in the url <http://sippm.unas.ac.id/>, but the existing website is no longer managed and used. Therefore it will be made Research & Community Service Applications for Web-Based National University Lecturers, where this application is the development of the previous website. With this system, it is expected to facilitate lecturers in conducting administrative processes related to reporting research results. The results of the research that have been carried out, is the implementation of the application using the PHP MySQL programming language, and also using the SDLC Waterfall Method in its development.

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1. Introduction

(LPPM) Research Institute and Community Service National University in general is research and community service aimed at improving the quality of human resources by conducting targeted research so that research results can be used according to community demands. In addition, this institution also facilitates and implements research results as a service work that is beneficial to the community. During this time the administrative process in reporting the results of research carried out by accessing the website contained in the url <http://sippm.unas.ac.id/>, but the existing website is no longer managed and used. Therefore the Research & Community Service Application will be made for Web-Based National University Lecturers, where this application is a development from the previous website,

2. Literature Review

2.1 Definition of Information Systems

Information system is: a system in an organization that also meets the needs of daily transaction processing, and supports managerial operations and strategic activities of an organization and also provides certain outsiders with the necessary reports (Pinem & Pakpahan, 2019).

2.2 Website Definition

Websites are: a set of interrelated web pages that are generally also servers that contain a set of information provided: individuals, groups / organizations. A website is also usually placed at least a server that can be accessed through a



network such as: the Internet, or even a local area network (LAN) and at an Internet address (URL). Combined all sites that can be accessed publicly on the Internet are also called: World Wide Web or better known by the abbreviation WWW. (Wikipedia: Website (Website), 2020)

2.3 PHP Definition

PHP (Hypertext Preprocessor) is a server-side scripting language that integrates with HTML to create dynamic web pages, first created by Rasmus Lerdorf in 1994 (Solichin, 2016: 14).

2.4 Definition of MySQL

MySQL is a database management system that is open source. MySQL is a great match for PHP. MySQL was created and developed by MySQL AB, located in Sweden (Solichin, 2016: 85).

3. Research Methods

This research was conducted with a method which is a system development of various data collection and analysis needs for the development of a web that is using the Waterfall development method: In the Development of Information Systems Application Research and Community Service for Web-Based National University Lecturers, using the System Development Life Cycle method (SDLC) Newfangled: Existing Waterfall as shown below:



Fig 1. SDLC Model Waterfall

The waterfall model itself has a definition that a software life process has a linear and sequential process. This development method itself is divided into several stages, such as: definition of requirements (Requirement Definition), system and software design (Software Design and System), Implementation and unit testing (Implementation And Unit Testing), integration and system testing (Integration and System Testing), Trials (Test), operational and maintenance (Operation And Maintenance) (Wicaksono, 2017).

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

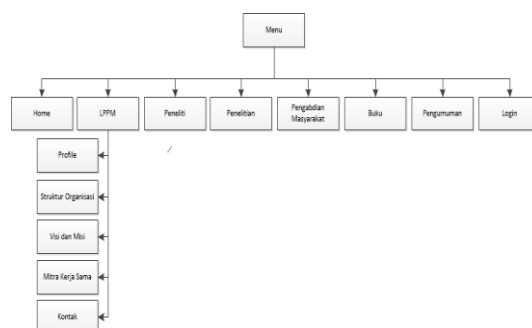


Fig 2. WebSite Flowchart



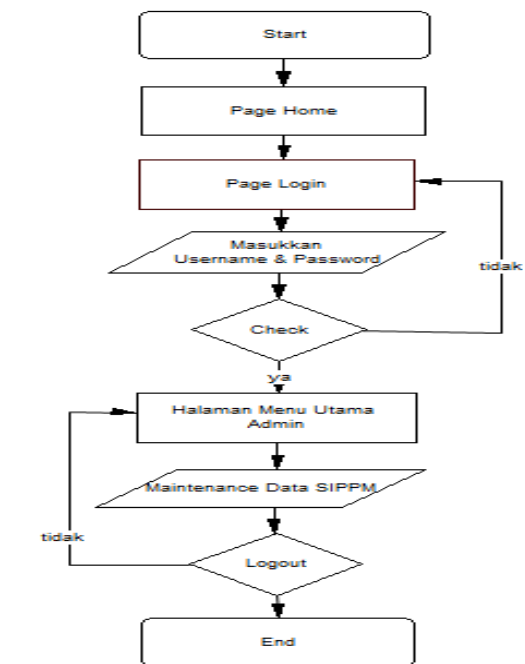


Fig 3. Admin Flowchart

In the admin website the duty is to maintain SIPPM data, maintenance here is monitoring the data that has been uploaded by the research lecturer, and also the admin has the duty to update the content about announcements, events, and news on the sippm website.

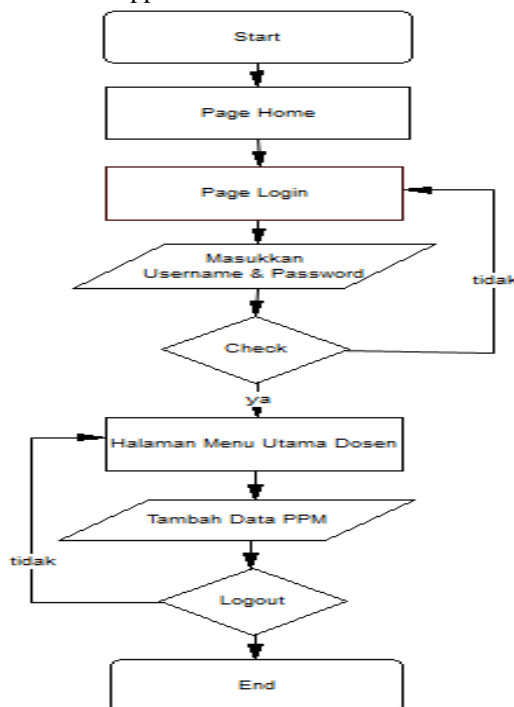


Fig 4. Lecturer Flowchart

After logging in to the website, the lecturer can upload progress, revisions or reports related to the research or service that is being done. The report uploaded on the website contains both abstract and synopsis.

4.2 Use Case on the System

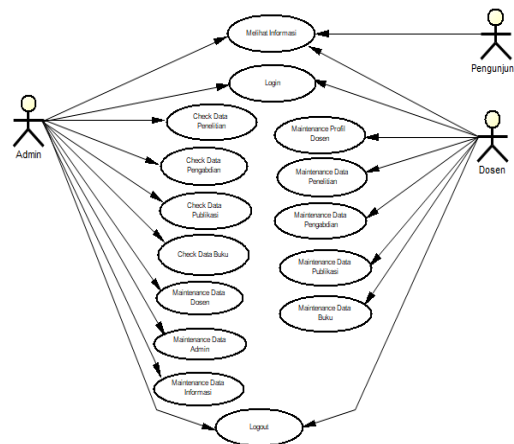


Fig 5. Use Case SIPP M Web

There were 3 actors, namely admin, lecturer and visitor, admin, namely the Head of the Research Administration and Community Service Bureau, the lecturer, the researcher, and the visitor, who visited the website. Admin and lecturers must log in first to be able to update data on the SIPP M website. To see information related to the results of research & community service, open the website without having to log in first.

4.3 Class Diagrams on the System

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

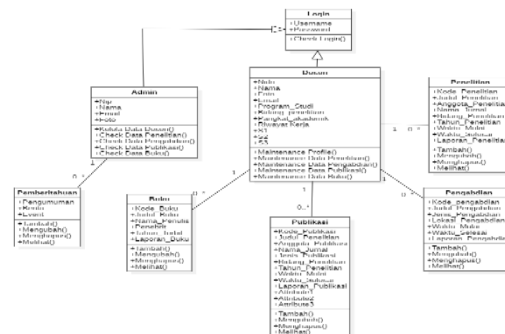


Fig 6. SIPP M Class Diagram

4.4 Activity Diagram on the System

The following is an Activity Diagram used in making the system.

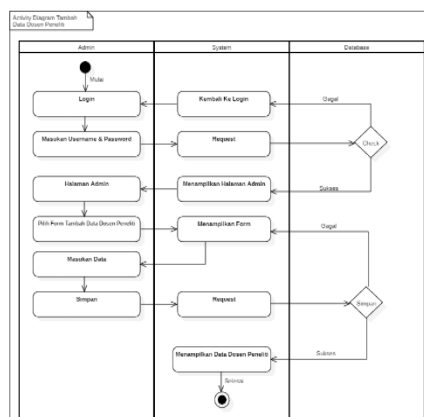


Fig 7. Activity Diagram Add Data for Research Lecturers



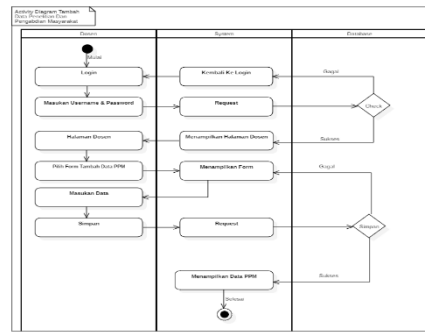


Fig 8. Activity Diagram Add PPM Data

4.5 Entity Relationship Diagram on the System

The following is an Entity Relationship Diagram that has been used to create the system.

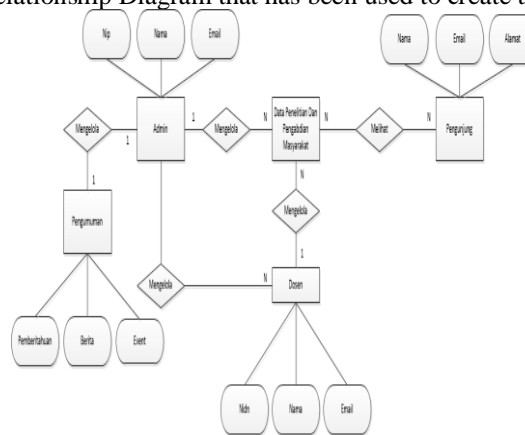


Fig 9. Entity Relationship SIPPM Web Diagram

4.6 Implementation on the Website

Implementation Phase is the stage which is the design of a system flow that has been made, the following is the result:



Fig 10. SIPPM Web Start Page

The start page when we access the website, Menu Home Contains information about research and community service and also an explanation of the information, there are also guidelines for conducting National University research that can be downloaded on its page. There is a banner at the bottom of the menu, and also the time displayed when accessing the website. In the footer section there is the National University address information and also links related to research and community service.

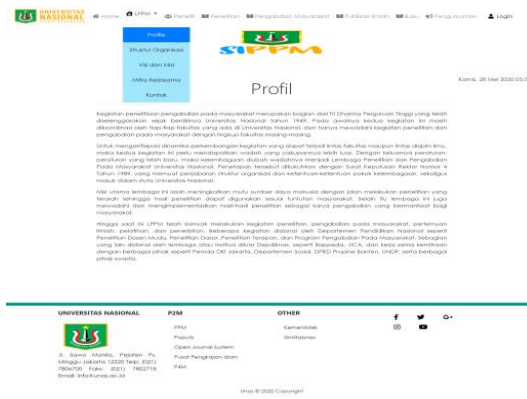


Fig 11. LPPM Profile page

The second page when accessing the website, the LPPM page contains submenus Institution Profile, Organizational Structure, Vision and Mission, Cooperation Partners, and also Contacts. This second page explains about the beginning of this institution and its organizational structure.



Fig 12. LPPM Organizational Structure page

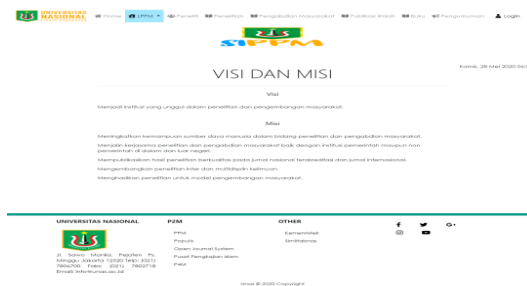


Fig 13. LPPM Vision and Mission page

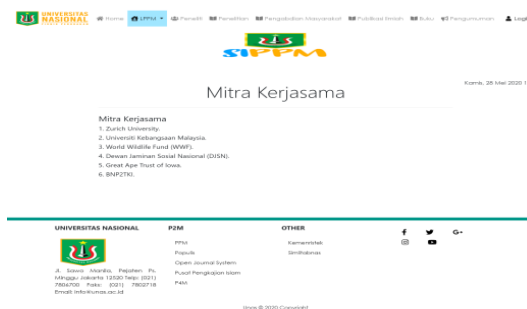


Fig 14. Partnership Partners Page

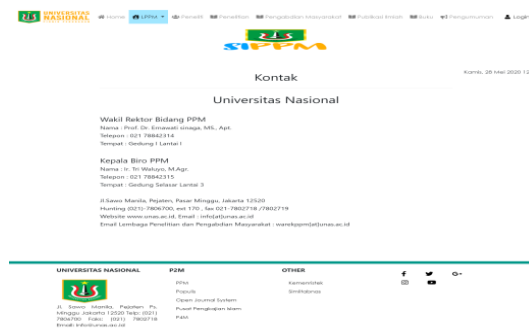


Fig 15. Contact page



Fig 16. Researcher's page

On this page there is a choice of study programs, where when selecting the study program dropdown, the research lecturer data will appear according to the study program. There is a search feature if you want to directly search for the name of the research lecturer.

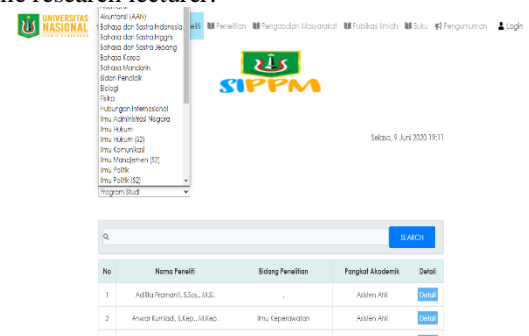


Fig 17. Page Choose study programs

After choosing a study program, a study program will appear that can be chosen to display the data of the research lecturers from the study program.



Fig 18. Page views after selecting a course of study.

Contains the names of researchers from each chosen study program. Then to see the details about the research lecturer is done by selecting the detail button.



Fig 19. Research Lecturer Page

Data Display Researcher Lecturer after choosing a study program, which will display all data related to the final report of research, service, publication, and books that have been uploaded by the research lecturer, in the researchers' page above the researchers photo section there is still a choice of study program, if the researcher does not have a report on the results of the study then can use the study program choice dropdown and then re-elect the researcher.

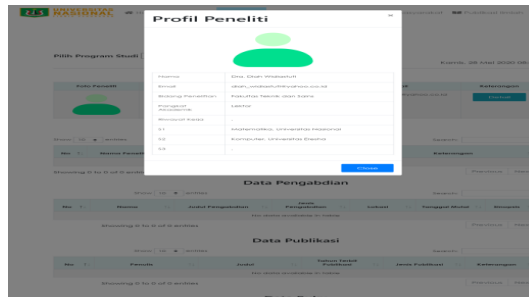


Fig 20. Research Lecturer Page

Research Lecturer Data Display after selecting details in the research lecturer data page, contains info about the Research Lecturer.

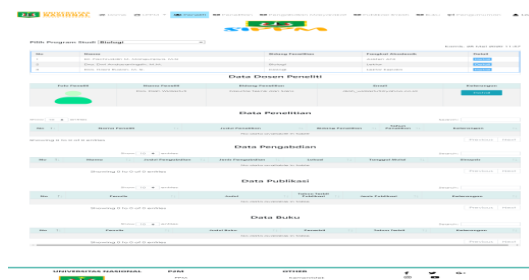


Fig 21. Select the Study Program dropdown again if there is no research data

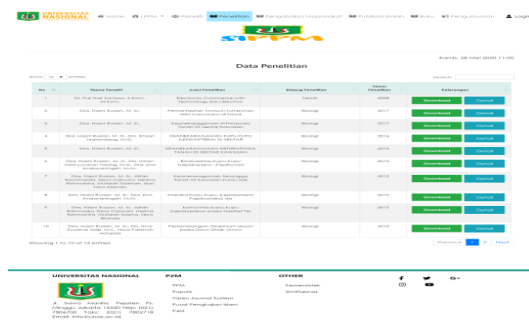


Fig 22. Research Data Page

Contains progress data and the final report of the research input by the Research Lecturer. There is a search feature to make it easier for visitors to filter what they are looking for. To view the research report data by selecting the download button, which will be directed to the source file. The final research report file in pdf format is abstract or synopsis. To see the details of researchers and their research data, by selecting the detail button.

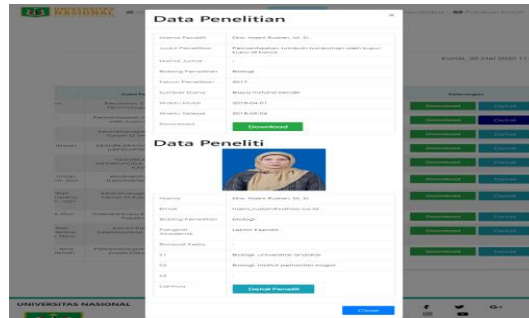


Fig 23. Research and Research Details Page

Is a complete information from the results of research that researchers do along with research data. Then the researcher detail button is available to go to the research page where there are research results.

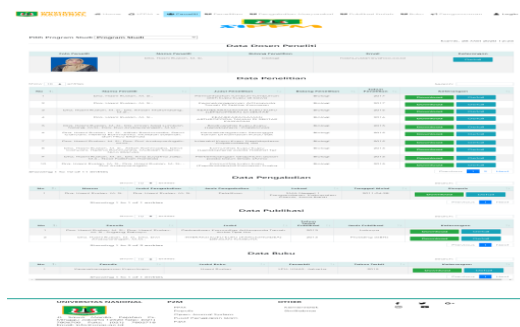


Fig 24. Researcher Details page along with research data

After selecting the researcher detail button it will be redirected to the researcher page which contains what he has examined.

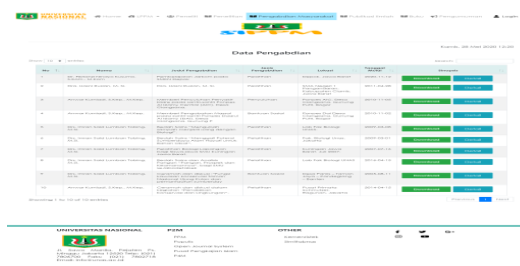


Fig 25. Dedication Data Page

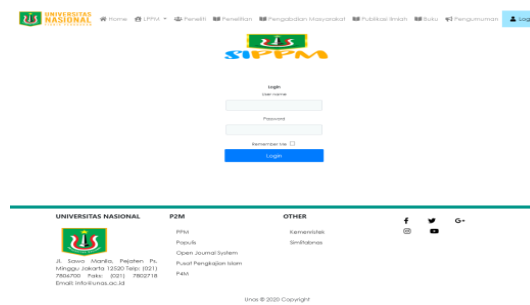


Fig 30. Admin and Lecturer Login page

On the website login using multi user where if the lecturer login will be redirected to the lecturer login page, if the admin login will be directed to the admin page. And when the login is successful, move to a special page.



Fig 31. Start Page (Admin)

After the admin has successfully logged in it will be transferred to the admin panel page where there is already a guide to using it. There are admin data menus, researcher data, announcement data, research data and others. In the research data, service, publication and book data menu, the admin can only monitor data (see).

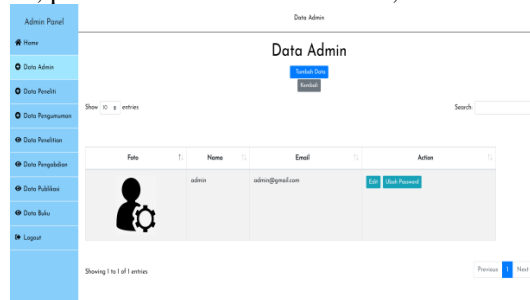


Fig 32. Admin Data Page (Admin)

There is an edit button, change the password add data and return to the admin data menu that is useful for managing data information from the admin.

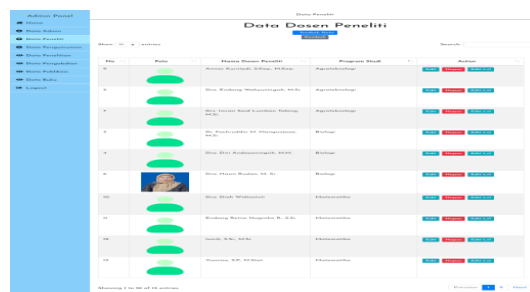


Fig 33. Research Lecturer (Admin) Data Page

Displays research lecturers based on study programs, There are buttons to edit, change, add data and return. Add data is a button that functions to add data for research lecturers, Edit is useful for editing research data for lecturers, editing lvl is useful for changing user access rights, returning to the previous page.

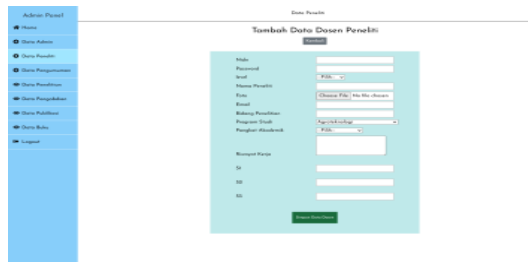


Fig 34. Page Add Data for Research Lecturers (Admin)

Input new data if there are additional research lecturers to access the website.



Fig 35. Announcement Page (Admin)

It is a special page only for posting announcements that will be displayed on the website. There are add, edit, return, and delete buttons. Announcements are divided into 3 categories, namely notifications, events and news.

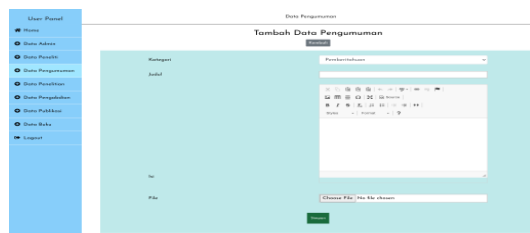


Fig 36. Page Add Announcement Data (Admin)



Fig 37. PPM Data Monitoring Page (Admin)



Fig 38. Lecturer page after login, namely User Panel

This page is the start page where after logging in the edit button and change password are available, editing is useful for changing information related to researcher data, changing the password is useful for changing the password.

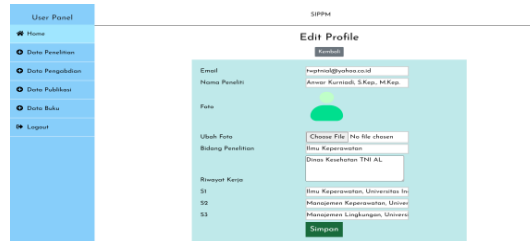


Fig 39. Edit Profile (User) Page

Function to change information related to personal data, select the save button if you want to change information.

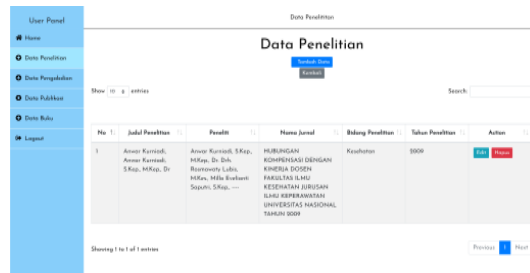


Fig 40. Second Page Research Data (User)

This page is a page that contains data on research that has been uploaded, there is a display of data that has been uploaded, if it has not uploaded the data, then it will not appear in the table. There are add, return, edit and delete buttons.

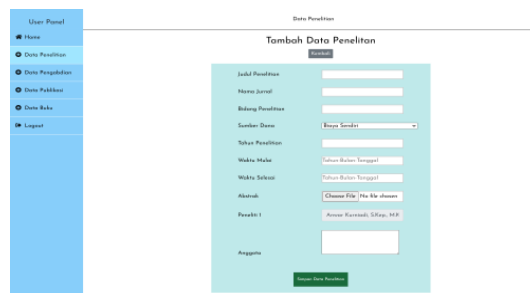


Fig 41. Page Add Research Data (User)

This page is a page that is useful in adding research data, there is a back button and also save research data, if you do individual research then in the members section on the form added research data does not need to be filled.

