

**SYSTEM INFORMATION OF RESEARCH AND  
COMMUNITY SERVICE (SIRIP)  
(CASE STUDY: INSTITUTION OF RESEARCH AND  
COMMUNITY SERVICE UPN "VETERAN" EAST JAVA)**

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**ABSTRACT**

*Institution of research and Community Service (LPPM) is an institution that accommodates research and community service in university area. The research and community service in a campus is accommodated by a system which manages the flow and features report of information needed by the user. Universitas Pembangunan Nasional "Veteran" East Java is a university which has LPPM that accommodates two of three Tridharma Perguruan Tinggi. Activities which are accommodated by LPPM is a research and community service. This system also facilitates Community Service Program (KKN) which is held as community service of the student. This system helps officer of LPPM UPN "Veteran" East Java to perform an administrative process of research and community service of UPN "Veteran" East Java. Research reviewer also can reviews the research proposal proposed. This system also can help chief of LPPM to monitoring, evaluating and giving reports in details of ongoing research and community services.*

**Keyword:** Information System, Research System.

**INTRODUCTION**

University is an institution which held Tridharma Perguruan Tinggi activities. Tridharma Perguruan Tinggi are educational and teaching activities, research and community service. Every member of the academy within universities scope are obliged to held Tridharma Perguruan Tinggi. The member of academy (civitas akademik) mentioned above are included lecturer and student. Every lecturer are obliged to implement Tridharma Perguruan Tinggi to fulfill their duty as lecturer. Every college student is obliged to uphold Tridharma Perguruan Tinggi to fulfill their duty as student to undergo their education.

University assumes duty to facilitates and accommodate all activities of Tridharma Perguruan Tinggi which are performed by lecturers or students. Universitas Pembangunan Nasional (UPN) "Veteran" East Java is a university which has an institution accommodated two of three Tridharma Perguruan Tinggi. The institution mentioned above is LPPM (Institution of Research and Community Service). This activities are accommodating by LPPM as research and community service.

LPPM is an institution which is responsible to accommodate research and community service in UPN "Veteran" East Java area. To fulfill this responsible well, research and community service in the college area is accommodate by a system to manage the flow and perform information report needed by its user. One of activities management standard attended to be achieved is process standard, which is all activities must be planned, performed, controlled and upgraded according to enhance quality of sustainable system research.

Basically, this Information System of Research and Community Service is used to facilitated its user, who are lecturers, students, research reviewer, and other parties. Process which be held is monitoring and reporting ongoing activities. Benefit of this system is can help lectures and students to submit their research and community services. This system can help lecturers and students to do registration and proposing research and community services, fulfill online administrative requirement. Other process which can be held is monitoring and reporting ongoing activities. This system is supposed to become media used by member of the academy to conduct their research and community services.

Implementation of this system hopefully can help lecturers and students to do registration and propose research and community services, fulfill online administrative requirement. This system can also facilitate Community Service Program (KKN) which regularly has been done by LPPM UPN "Veteran" East Java as a community service activity within UPN Veteran East Java area. By this system it can help officer of LPPM UPN Veteran East Java to simplify dividing students in groups from all study program in Kampus Bela Negara UPN Veteran East Java, and research reviewer can also review proposed research proposal. This system can help Head of LPPM to monitoring, evaluating, and making reports in details of all ongoing research and community services activities.

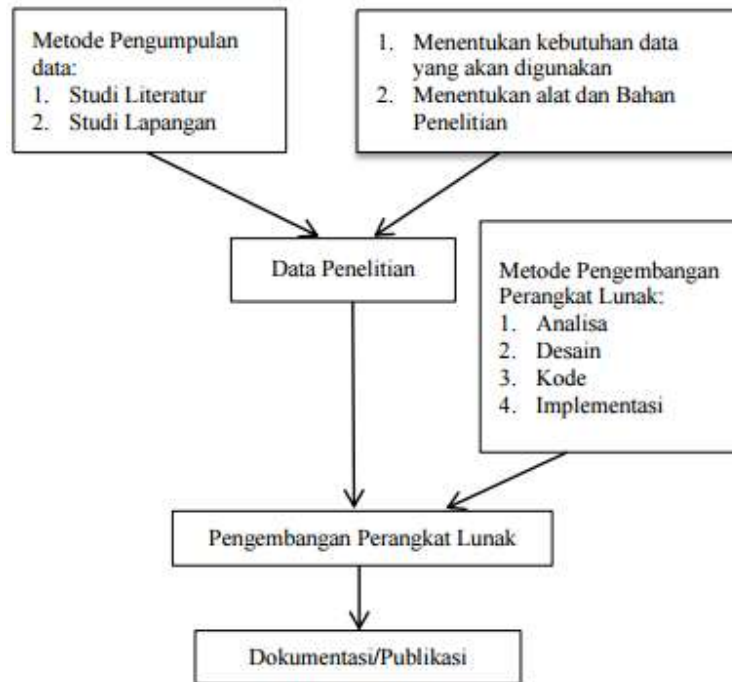
The proposed of this research is to create a system that is able to manage research activities and community service in the Universitas Pembangunan Nasional "Veteran" East Java.

### **INFORMATION SYSTEM**

Information is data managed into more useful and meaningful form by its receiver, while data is source of information which describe an event (facts compilation). Information system, according to Leitel and Davis in their book "Accounting Information System" defines that "Information system is a system in an organization which unites daily transaction management needs, back up operation, spatial managerial and strategic action of an organization and provides outside certain party with needed reports."

In common definition, information system are defined as a system in an organization which manage data into more useful form to achieve a goal (Jogiyanto,2005)

System consist of elements such as inputs, processing and output as shown at Picture 1 (Scott,1996). According to (Jogiyanto,2005) in his book titled Analysis and Design of Information System explain that: "System is a network of procedures which connect to each other, gather together to do some activity to accomplish certain goal."

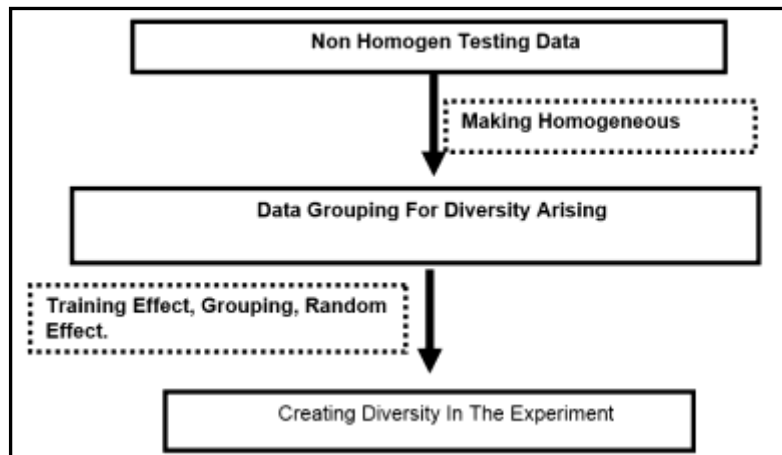


**Figure 1. Research Design**

#### **RANDOM DESIGN GROUP (RAK)**

In several experiments, frequently found that certain experiment units, while given similar treatment, often response or have different results. Such as observation on a certain day or using a certain tools will be more homogenous if compare by observations on different days or using different tools. Therefore design can be arranged in a certain way so that diversity can be measured and excluded from an experiment tool. On different time average treatment can no longer content contribution derived from known sources. Design model which contains of this kind of grouping are what we are going to discuss on next writing. The mentioned design is Random Design Group (RAK) (Steel and Torrie, 1991)

The reason why this RAK is used, can be explained as in Figure 2.



**Figure 2. Data Flow Testing.**

Block or Groups can be in form of :

- a. Separated places → waters, lands, dll.
- b. Separated material dimension.
- c. Separated times.
- d. Etc. (in every case usually explain as Group Characteristis).

### **RESEARCH METHODS**

Information System Design of research and community service (SIRIP) can be seen through more details description about designing information system of research and community service using Structural Approach which is data flow diagram, tiered diagram and entities relation diagram also transforming entities relation diagram into table form which later be based of designing table of a database. The following is a design model database from Information System of Research and Community Service (SIRIP).

### **DATA FLOW DIAGRAM**

Using this SIRIP structural approach, we can create a design analysis using Data Flow Diagram (DFD) with several levels, some of them are:

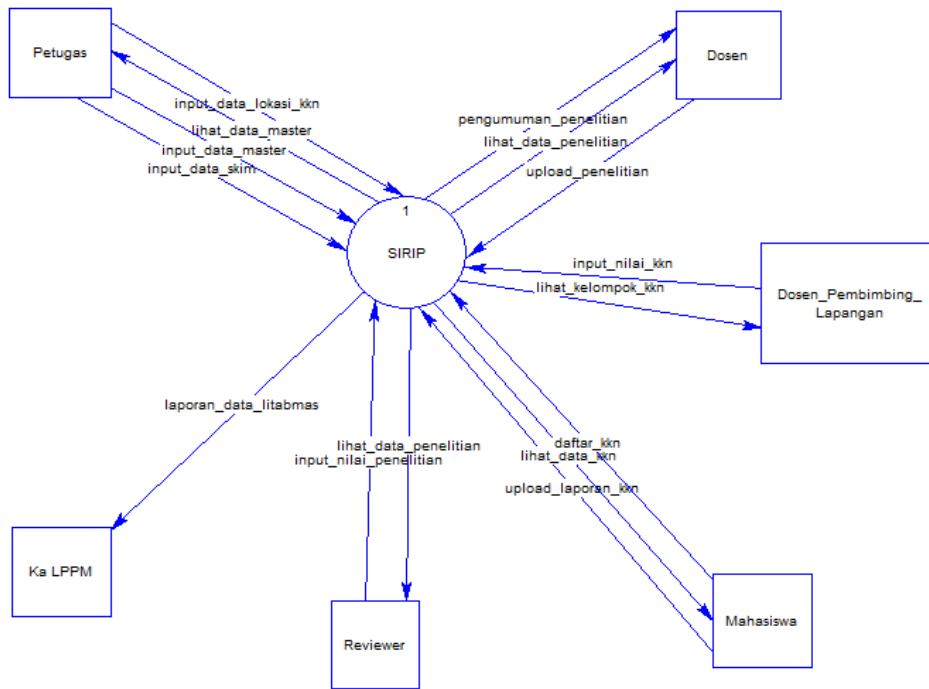


Figure 3. Context Diagram SIRIP

In the context diagram at picture 3 above, it is explained that 6 users involved in this system, they are:

**a. Officer**

The role of this officer user is as administrator of this information system, whereas all master data process and officer registration can have full access right. Officer can perform grouping of Community Service Program (KKN), also plotting research and community service reviewer names to assess lecturer proposal which have entered SIRIP.

**b. Lecturer**

As lecturer user, he/she can submit research and community service proposal, and also seek out latest information about Research and Community Service (Litabmas). While s lecture has submitted independent research proposal, then after login the lecturer can also see status of the proposal, whether it is accepted or rejected.

**c. Student**

As student user, he/she can submit proposal and registration of Community Service Program (KKN), and also can submit KKN activity proposal. After doing KKN registration process then the student can see his/her group data, location and supervisor, therefore they do not have to ask the secretariat of LPPM UPN Veteran East Java for that information.

**d. Field Supervisor Lecturer (DPL)**

As user DPL, he/she can perform to seek out information due to KKN, this DPL is a lecturer who has been plotting by LPPM officer to perform duty as DPL on KKN location which have been appointed.

**e. Reviewer**

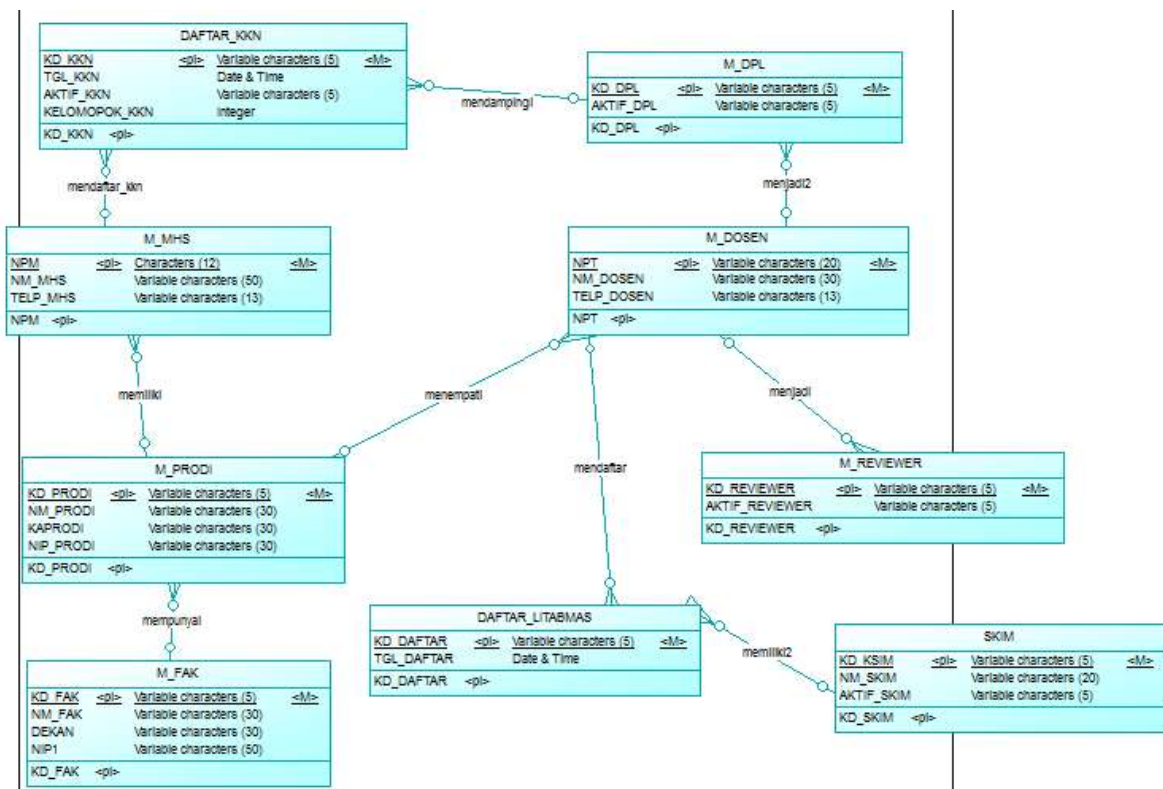
As user reviewer, he/she can review assessment of research and community service proposal, this reviewer is a lecturer who has been plotting by LPPM officer and approved by head department.

**f. Head Department of LPPM**

As user Head Department of LPPM, he/she can only see all reports which have been done by ongoing system, then Head of LPPM can see all this report up to date.

**DATABASE DESIGN**

This database design will create a diagram which will become a database that contains off all data transaction on this information system.



**Figure 4. Conceptual Data Model SIRIP**

On picture 4 above, it is explained that Conceptual Data Model (CDM), which this CDM have 9 (nine) created entities, so that this SIRIP will be a database in the making of this CDM. 9 (nine) of this entities are :

**a. Entity M\_MHS**

Where this entity is aim for keeping all students data from all years and this M\_MHS entity is having *primary key* NPM.

**b. Entity M\_DOSEN**

Where this entity is aim for keeping all lecturers from all faculties represented by relation to M\_PRODI and this entity M\_DOSEN have *primary key* NPT.

**c. Entity M\_FAK**

Where this entity is aim for keeping all faculties data in UPN Veterran Jatim, this entity have *field* Dean Name and this entity M\_FAK have *primary key* KD\_FAK.

**d. Entity M\_PRODI**

Where this entity is aim for keeping all faculties data in UPN Veterran Jatim, this entity have *field* Study Program Head Department Name and this entity M\_PRODI have *primary key* KD\_PRODI.

**e. Entity M\_DPL**

As DPL entity is aim for keeping all lecturer data who have been appointed as Field Supervisor

Lecturer (DPL), whereas this entity also have *field* to activate or not activate this DPL status are

always active. So history of the data storage can be access because old data will not be gone and can

be seen which lecture have become DPL at any time.

**f. Entity M\_REVIEWER**

As Reviewer entity is aim for keeping all lecturer data who have been pointed as Reviewer to assess

a proposed proposal by a lecturer, whereas this entity also have *field* to activate or not activate

his/her status as Reviewer are always active. So history of the data storage can be access because

old data will not be gone and can be seen which lecture have become DPL at any time.

**g. Entity SKIM**

This entity is used to keep master data of independent SKIM research and community service which will be open to be able to perform registration by lecturer/proposer. This entity is also prepared with active skim field. It is used if a skim

has been registered on SIRIP before or have been replaced their name by another skim name. So the data that have been used will not be gone and can still be seen in the future.

**h. Entity DAFTAR\_LITABMAS**

This entity is used as registration to Litabmas. This field is made to keep various proposed proposal by lectures who is registered to Litabmas.

**i. Entity DAFTAR\_KKN**

Entity of Daftar KKN is used by students who will apply Community Service Program. Inside there are several active field such as : student can see their grades, can know their Field Supervisor Lecturer (DPL)

## **RESULT AND TESTING SYSTEM**

In this research, it is proposed to use RAK Methods (Group Random Design) for Litabmas Information System and KKN Grouping. This system is made by custom design that fits the needs of LPPM UPN Veteran Jatim. Regularly LPPM is organizing Tridharma Universities activities. In this research, a system is made to contain registration of lecturer and students within the area of UPN Veteran Jatim.

Lecturer can use this system to propose a research or community service. Students can use this system as a KKN participant. The management can use this system to manage ongoing activities in form of research and community service.

Lecturer can propose a research which has been determined by LPPM UPN Veteran Jatim, so it can decrease piles up files on LPPM office. After filling and assessing this research is done then the result of the research can be seen straight away at the system page.

This research can also propose a system that can contain and support Community Service Program (KKN) Bela Negara activity. This activity is done regularly by LPPM UPN Veteran Jatim. In this online KKN system student of UPN Veteran Jatim can register and upload necessary files. This can help decrease the hustle and line up on LPPM UPN Veteran Jatim office. When all enlists are declared pass filling requirements by LPPM, then the system will automatically shuffle and settle a group. The content of each group and village will be shared equally fits a composition (Faculty/Study Program, Sex, and number of person for each group). This Group Random Design can help LPPM officer in terms of division of a group.



**Figure 5. Proposed Lecturer Login Form**

In this system, a facility is given in form of login for each Lecturer who is proposing a research or community service. Student also be given login right to make a registration on KKN activity. A login form is made as shown in Picture 3 so that the user is comfortable in using it.





Figure 6. Proposed Lecturer Login Form

Every user has their own access right. Lecturer user has access right to change profile data of themselves, proposing new or advanced research, proposing community service activity, seek out research proposal history. Student user has access right to change their profile data, and propose to attend KKN activity.

Proposed lecturer can apply research proposal according to scheme opened by LPPM. Research proposal can be applied as long as the research scheme is not closed yet and proposed lecturer is qualified to propose the research. Proposal steps are divided into 3 phase. Phase one is submitting open research scheme, adding research member data, and uploading proposed files. Submitting research proposal can be seen in Picture 5.

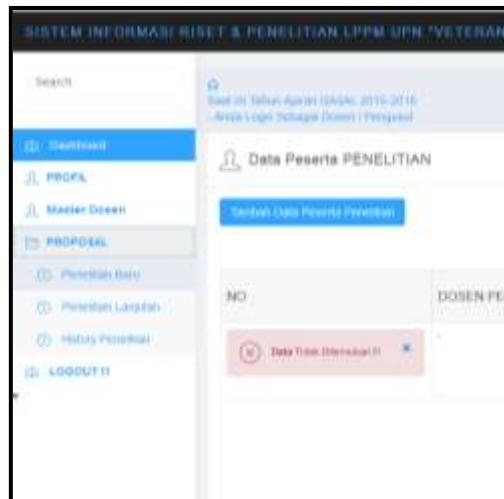
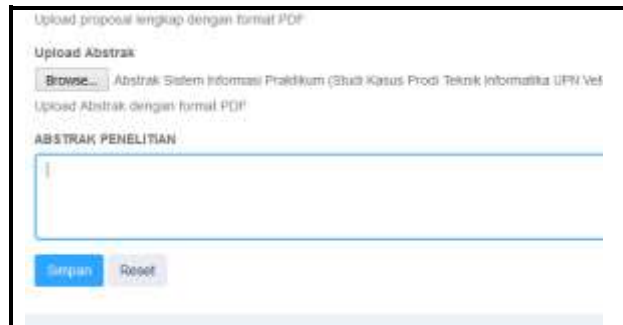


Figure 7. Proposal Submitting Form

Phase two is adding research member data. Adding research data can be done by input NIDN data written on lecturer master data. Adding research data phase can be seen on Picture 6.

Figure 8. Adding Research Member Data

Phase three is uploading proposed files. Proposer is asked to complete their research data proposal. Research proposal data is contain of written and upload proposal form documents that have to be completed. After all data are complete, proposer can keep the data to finish proposal submission process. Research proposal submission uploading process can be seen on Picture 7.



**Picture 9. Uploading proposal files.**

After uploading proposal files process finishes, then the lecturer proposer wait for approval from reviewer. Reviewer pointed by LPPM to approve every incoming proposal.

## **CONCLUSION**

This system is helping LPPM UPN Veteran Jatim officer to conducting administrative process of research and community service in UPN Veteran Jatim. Research reviewer can conduct reviewing submitted research proposal. This system can help Head of LPPM to monitoring, evaluating and giving reports in details of all ongoing research and community service activities.

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