

Conference Paper

Assignment of Reviewers and Litdimas Assessment Process on Sirip UPN “Veteran” East Java

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Abstract

LPPM is an institution that manages research and community service activities at University of Pembangunan Nasional “Veteran” Jawa Timur. Research and community service management activities in universities are accommodated by a system that regulates the research and community service activities. The big system is called SIRIP (Sistem Informasi Penelitian dan Pengabdian Masyarakat) that build since 2016. This year we build sub system from Sirip that called SIVENI (Sistem Verifikasi dan Penilaian Litdimas). This system can also display report information to its users. Purpose of this research is to create a system that is capable to facilities LPPM for assignment of reviewers and assessment process on SIRIP UPN “Veteran” Jatim. In this system, litdimas proposal documents are uploaded by lecturer. Furthermore, LPPM as manager has duty to verify the proposal document. LPPM appointed several lecturers as reviewers. Reviewers give grades on proposals uploaded by lecturers. This research is expected to provide solutions for LPPM in proposal verification and proposal assessment activities in research and community service that can be used routinely or continuously. Final result of this system is give ranking of proposals submitted by lecturers, so that this becomes data for LPPM in determining which proposals for litdimas which are given funding.

Keywords: information systems, assessment, research and community service

Introduction

There are two approaches in defining systems, definition that approaches the procedure and approaches the components or elements. System definition approach that emphasizes the procedure defines the system as follows. The system is a network of procedures that are interconnected, gathered together to carry out an activity or to complete a certain goal. System definition approach which is a network of procedures emphasizes the sequence of operations in the system. Information is data that is processed into a form that is more useful and more meaningful for those who receive it, while data is a source of information that describes an event. Information systems, according to Leitel and Davis define that information systems are a system within an organization that brings together daily transaction processing needs, supports operations, is managerial and strategic activities of an organization and provides certain outside parties with the necessary reports. Information systems using ICT (Information and Communication Technology) are implemented to improve the way organizations operate and to help ease work (Cornford and Shaikh, 2013).

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LPPM is an institution that manage and accommodate research and community service activities in Universitas Pembangunan Nasional "Veteran" Jawa Timur. In order for managing all research and community service activities, there is a system that can display by report system. This system is going to be achieved a standardized processing, all activities must be planned, implemented, controlled, and improved in accordance with a continuous system of research quality improvement. From existing system that implemented in LPPM, it can be upgrade on system flow. The current system called Sistem Informasi Penelitian dan Pengabdian Masyarakat (SIRIP) is able to process research and community service proposal submission based on SKIM which was opened by LPPM.

Information technology is a set of tools that helps you work with information and perform tasks related to information processing (Haag and Keen, 1996). In accordance with its function, information technology can help human work in all things. PHP is known as a script programming language that creates HTML documents on the fly that are executed on web server. PHP is also known as a server side programming language (Betha, 2012). Including in the field of Research and Community Service. Basically, research activities are activities to develop science. Community service activities are activities to disseminate knowledge to the community. Research proposal is a design or research plan that will be implemented. Research and community service proposals must meet certain conditions and criteria to obtain funding. From a series of research activities carried out, lecturers can apply the results of research conducted in the form of community service activities.

Submission of Litdimas proposals is carried out in accordance with procedures established by LPPM. Research proposal is a research plan or plan to be carried out that has fulfilled certain requirements and criteria for conducting research (Nugroho, H.A. and Pinandita, P, 2013). From the existing procedures, one of which is the assessment of research proposals to be declared as feasible or improper research proposals. Previously, the proposal evaluation was still using manual method without a helpful system. One important process is the assignment of reviewers. Assignments are carried out by appointing lecturers who meet the requirements to become reviewers. a reviewer can provide an assessment of the proposal submitted. With the development of technology in the field of information systems, the need for media aids by creating a system that can overcome these problems. Therefore it is necessary to have a system that can overcome existing problems. This system is expected to provide the same standards between reviewers in accordance with the criteria, weight, value, and passing grade that have been set.

Globalization is a challenge in the field of higher education. Information technology is needed by universities to be able to manage information well, requiring information needs of each of the parties concerned can be met quickly and accurately (Choldun, 2006). Higher education which does not develop information technology properly will increasingly left behind.

The existing system needs development, the system can facilitate verification and assessment activities in research and community service activities in the UPN "Veteraan" East Java. The purpose of making this system is to make it easy for managers, reviewers and proposing lecturers. This research will discuss how to give the assignment of reviewers of litdimas proposal. It also discusses the grading of proposals by reviewers. This system is called Sistem Informasi Verifikasi dan Penilaian pada Litdimas UPN "Veteran" Jatim (SIVENI).

Research Method

Rapid Application Development (RAD) is a process of developing sequential liner software that emphasizes the development cycle in a short period of time (60 to 90 days) with a component-based construction approach. RAD is a package of integration of strategies, methodologies and tools that can stand alone with a framework called information engineering. RAD or rapid application development is an object oriented approach to system development which includes development methods and software. Development of information technology based systems that are correct, and structured, must pass stages

that are in accordance with the system life cycle (Al Fatta, H, 2007). In this method there are several steps that are implemented.

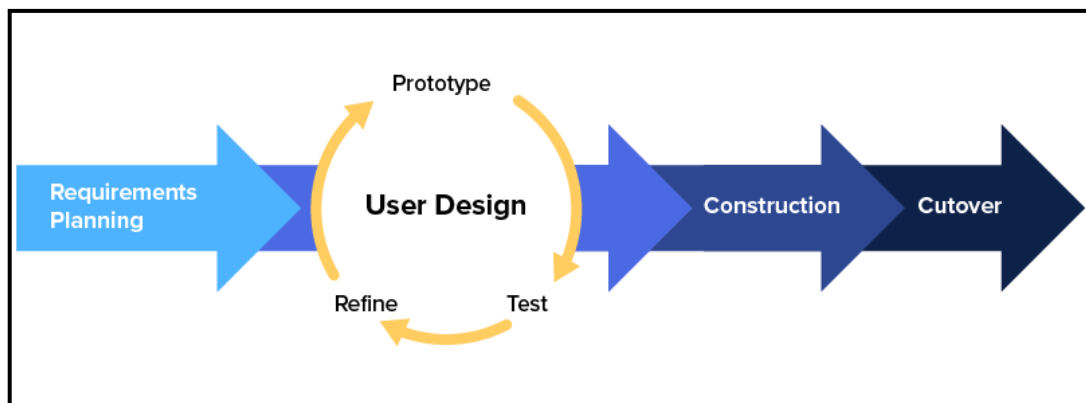


Figure 1. Rapid Application Development. (Source: micktimes.com)

First stage is Requirement Planning, in this stage it is known that everything that becomes a system requirement is by identifying the information needs and problems faced to determine goals, system boundaries, constraints and alternative problem solving. Analysis is used to determine the behavior of system and also to find out what activities are in system. At this stage, it will explain how information system system recapitulates financial research and community service.

Second stage is the Design Workshop, which is identifying alternative solutions and choosing the best solution. Then design a business process and programming design for data that has been obtained and modeled in the information system architecture. Tools used in system modeling usually use the Unified Modeling Language (UML) which includes use case diagrams, activity diagrams, sequence diagrams and class diagrams.

From results of literature study and results of field surveys that have been carried out, a general description is created, which is system design, system architecture, as well as an analysis of system requirements. In addition, initial design of the application will be made. Then interface design and process will be ready to be implemented. In development carried out in 2019, this research has a process flow as shown in figure 2. System will be implemented by having 3 users, which is lecturer (*dosen pengusul*), operators (*pengelola*), and reviewers (*reviewer*).

Development carried out in 2019 is development in process of verification of litdimas proposals and evaluation of litdimas proposals. This proposal was submitted by the proposing lecturer through the system. Development of verification phase of Litdimas proposal is done by checking uploaded documents. Verification includes data completeness and data validation. Verification process is carried out by the operator at LPPM. Verification is done after lecturer uploads documents on system. Development of evaluation phase of litdimas proposals is carried out in evaluating uploaded litdimas proposals. This is done by reviewers online. Therefore, development of system this year is very beneficial for the SIRIP system that has been developed.

CDM is a database design based on data collection and analysis. The making of CDM is a stage where the process of identifying and analyzing data needs is carried out. This is called data collection and analysis. To determine the needs of a database system, we must first know the other parts of the information system that will interact with database system. Data types are general and not specific.

CDM (Conceptual Data Model) is used to describe in detail database structure in logic form. This structure is independent of all the particular software and data storage structures used in this application. CDM consists of objects that are not implemented directly into the actual database.

PDM (physical Data Model) Is a model that uses a number of tables to describe the data and the relationship between these data. PDM is a detailed description of database in physical form. The depiction of the PDM design shows the correct data storage structure in the actual database used.

Database is a data or collection of data that is mechanical, shared, formally defined and controlled centrally in the organization (Gordon and Everest, 2005). Database of this system is created at this stage, to make this SIRIP system requires a diagram making. At this stage a model has been created as shown below on Figure 2.

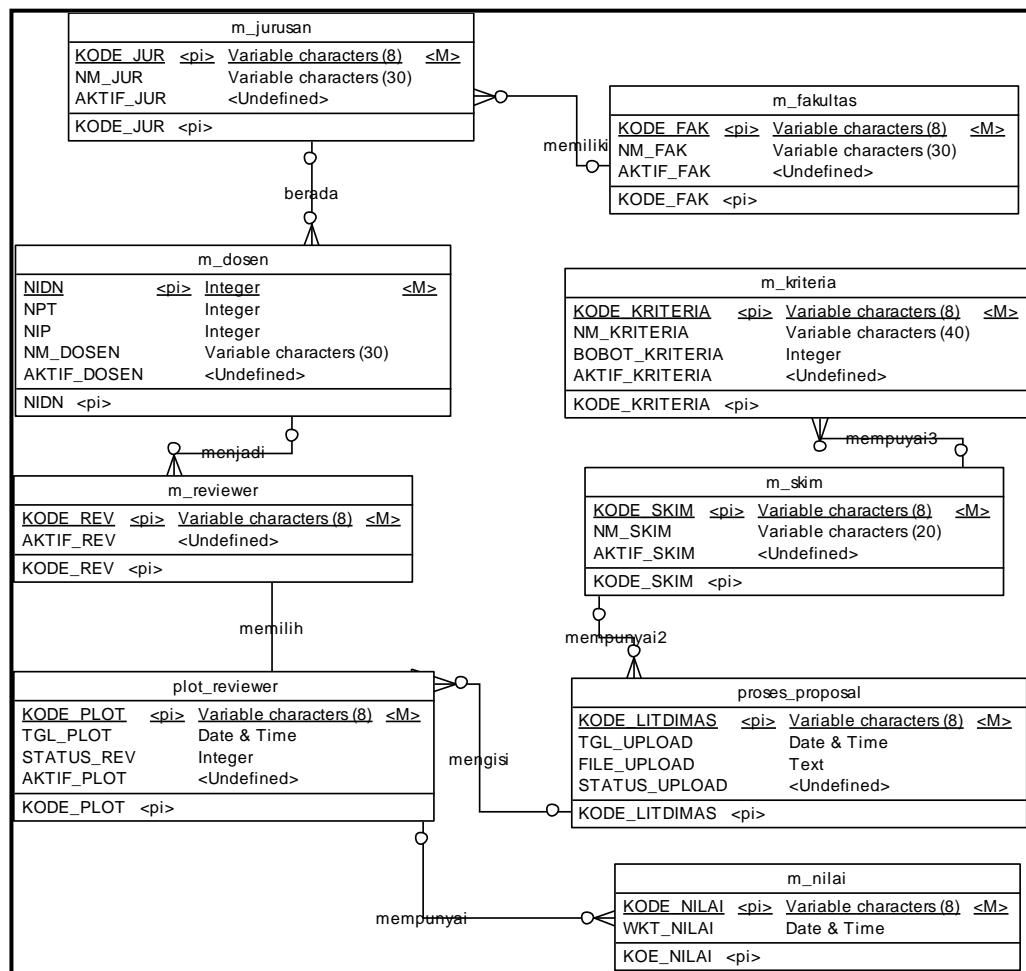


Figure 2. Conceptual Data Model of Siveni System.

In making the Conceptual Data Model (CDM) of the proposal appraisal system, as many as 9 entities were created with attributes owned by each entity according to their needs. Entities required include jurusan, fakultas, dosen, reviewer, plot reviewer, proses proposal, nilai, skim, dan kriteria. From each entity that has been created, designed various attributes needed on that entity. For example, in the plot_reviewer entity the attributes of the entity are required, including the "tanggal plot", "status_reviewer", "Aktif_plot", and "kode plot" attributes. Likewise with other entities, each entity has attributes that have been given in accordance with the needs of the system created. At this stage the core process of building a system, because if at this stage there is a mistake, then process of making system will fail.

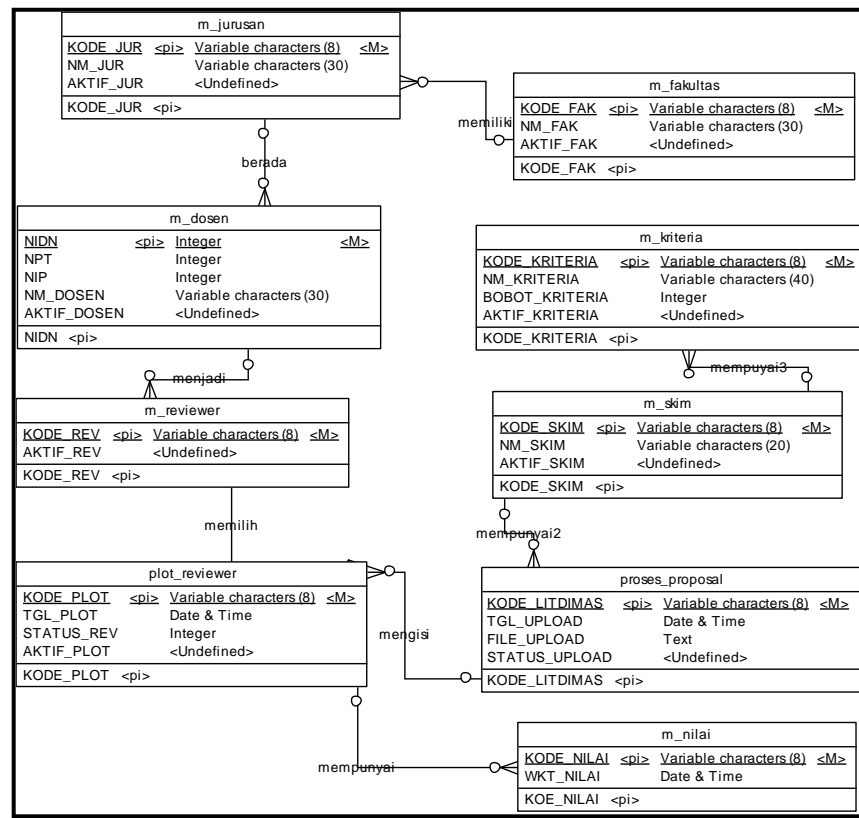


Figure 3. Physical Data Model of Siveni System.

After completing data design that is carried out in the making of CDM, next process is generate into a Physical Data Model (PDM). This process is changing format that was previously a concept data model, converted to a physical data model. Output of this process is a physical database that will be used on SIVENI system.

PDM created on this system there are 9 tables. Each table is a data slot that needs to be filled by each user, both in terms of managers, proposing lecturers, and reviewers. Every data transaction made on this application, will change the contents of the database that has been prepared. For example, in SKIM table, there are relations in other tables, namely the "proses proposal" and "kriteria" table. This is done so that when data changes that occur in "skim" table will also triggering changes in table associated with this table.

Result and Discussion

Object-oriented approach is an effort to build information systems and software based on object abstraction contained in daily life (Nugroho A, 2005). This system is build with object oriented design. Each user has their own access rights. The proposing lecturer uploads documents related to the research being carried out or to be submitted. Operators have access to recap all data from the research proposal. The operator also has access to the assignment of reviewers, where this reviewer is a lecturer who has been chosen to conduct an assessment of the research proposal being submitted. Flowchart of reviewer assignment can be seen on Figure 5. Third user is reviewer, reviewer has the duty to check the contents of uploaded proposal, so that a rating is obtained from the proposal submitted. From list of proposal, information on proposals which will be approved for funding will be obtained.

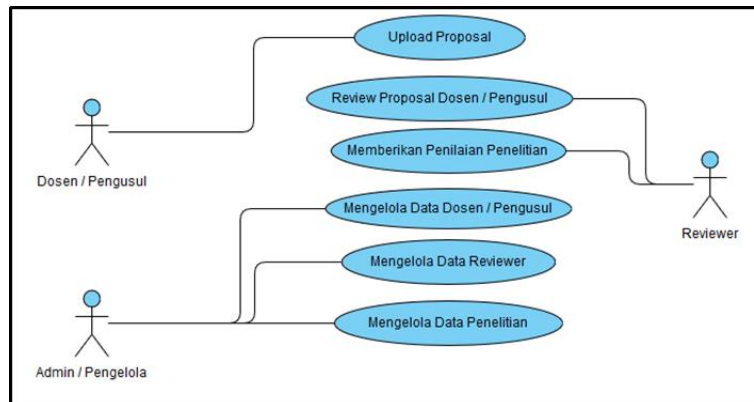


Figure 4. General Description of System

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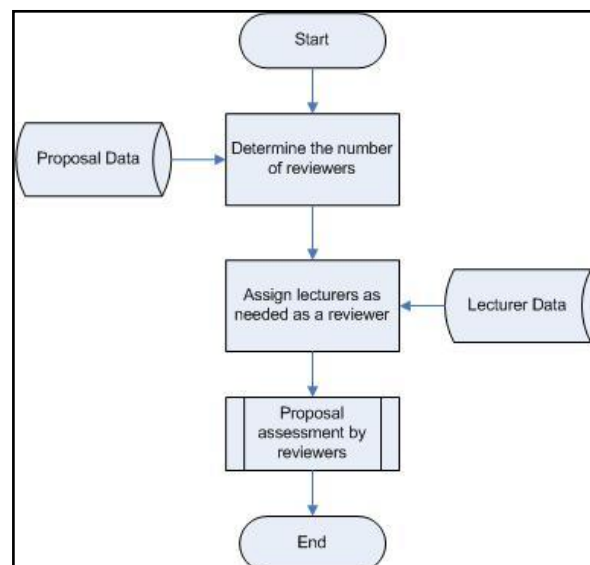


Figure 5. Flowchart of Reviewer Assignment

Each reviewer has been given access to do a review on a predetermined proposal. In this form it is possible for a reviewer to appear more than once, based on what schemes the review is entitled to. Process of determining review

is carried out by Head of LPPM, so operator user carries out an assignment on Sirip system. Each reviewer is given task to reviewing the submission online litdimas.

NO	DOSEN PENGUSUL	SKIM	JUDUL PROPOSAL	REVIEWER	STATUS	Aksi (*)
1	Penulis 1 0023070907 / 0023070907/ DR. BASUKI RAHMAT S.SI. M.T Penulis 2 0707090003 / 0707090003/ BUCI NUGROHO S.KOM. M.KOM Penulis 3 (/)	RISET PENGINGKATAN MUTU PEMBELAJARAN (PMU) BATCH 1 Rp. 20.000.000.00 (/)	PEMROGRAMAN FUZZY DAN JARINGAN SYARAF TIRUAN UNTUK SISTEM KENDALI CERDAS	Reviewer 1 Reviewer 2 Status Reviewer	PROPOSAL	1 2 3 4
2	Penulis 1 0707090003 / 0707090003/ BUCI NUGROHO S.KOM. M.KOM Penulis 2 0725090001 / 0725090001/ WAHYU SYAFULLAH JAUHARIS SAPUTRA, S.KOM. M.KOM Penulis 3 (/)	RISET INOVASI DAN PENERAPAN IPTEKS (RISTI) BATCH 1 Rp. 30.000.000.00 (/)	SISTEM PRESENSI MAHASISWA OTOMATIS BERDASARKAN WAJAH MENGGUNAKAN SURVEILLANCE CAMERA	Reviewer 1 Dr. H. FENNY WURYANDARI MP Reviewer 2 Dr. SRI MULYANINGSIH MP Status Reviewer PUBLISH	PAPARAN	1 2 3 4 5
3	Penulis 1 0708120403 / 0708120403/ RONGGO ALIT, S.KOM. MM. MT Penulis 2 0714020703 / 0714020703/ SUGARTO, S.KOM. Penulis 3 (/)	RISET DASAR (RISDA) BATCH 1 Rp. 19.800.000.00 (/)	SISTEM INFORMASI MONITORING EVALUASI DAN LUARAN PADA PENELITIAN DAN PENGABDIAN MASYARAKAT (SIRIPNEL) (STUDI KASUS: LEMBAGA PENELITIAN DAN PENGABDIAN MASYARAKAT UPN J&A-A VETERAN) J&A-A JAWA TIMUR	Reviewer 1 Dr. NI KETUT SARI MT Reviewer 2 Dr. H. SRI WURYANDARI, MP Status Reviewer PUBLISH	PAPARAN	1 2 3 4 5

Figure 6. Form of Reviewer Assignment (a) Adding Lecture as Reviewer (b) Assignment of Reviewers on Litdimas Proposals.

Reviewers can log into the system as reviewers with separate accounts, because a reviewer is at the same time is a lecturer who has a proposal lecturer account. When research proposal and community service submission has been closed, this means that needs of number of reviewers can be determined. Thus, proposal that has been uploaded can be recapitulated and examined administratively. Proposal that has been recapitulated will be determined by who reviewer evaluates. Proposal assessment is carried out with consideration of field of science occupied by a reviewer with proposal to be assessed. In adding data to a reviewer, it was also determined that the reviewer was entitled to conduct a review on a particular scheme. This application is using dynamic web technology, this technology excels at page access faster because content from web is separate from layout of web pages (Arief M Rudianto, 2011).

In evaluating a proposal, reviewer carries out a task in accordance with the provisions. Assessment parameters measured include assessment of problem formulation, research objectives, outcome opportunities, methodology, literature review, and research feasibility.

Reviewers also provide comments on form provided. Reviewers also provide suggestions for approved funding for litdimas proposal. From each of assessment parameters above, there are two assessment variables namely weight and score. Weight has been determined in accordance with the intended parameter variables. Reviewers give an assessment of scores of each of these variables. After evaluating all proposals and all schemes, the ranking of proposals will be seen from highest to lowest. Proposal with highest value is most feasible proposal to be funded.

Parameter	Weight	Score
MK00001 PERUMUSAN MASALAH A. KETAJAMAN PERUMUSAN MASALAH; B. TUJUAN PENELITIAN	25	- 1 [SATU] -
MK00002 PELUANG LUARAN PENELITIAN A. PUBLIKASI ILMIAH; B. PENGEMBANGAN IPTEKS SOSBUD; C. PENGAYAAN BAHAN AJAR	25	- 2 [DUA] -
MK00003 METODE PENELITIAN KETEPATAN DAN KESESUAIAN METODE YANG DIGUNAKAN	25	- 3 [TIGA] -
MK00004 TINJAUAN PUSTAKA A. RELEVANSI; B. KEMUTAKHIRAN; C. PENYUSUNAN DAFTAR PUSTAKA	15	- 5 [LIMA] -
MK00005 KELAYAKAN PENELITIAN A. KESESUAIAN WAKTU; B. KESESUAIAN BIAYA; C. KESESUAIAN PERSONALIA	10	- 6 [ENAM] -
Komentar	Disesuaikan RAB dengan Perencanaan Kegiatan	
Usulan Dana	22700000	Rp. 22.700.000.00

☐ Centang disamping Apabila sudah Yakin Untuk Menyimpan

Figure 7. Proposal Assessment Process by Reviewer

Conclusion

Based on results of testing SIVENI system, conclusions that can be taken are as follows. SIVENI system can be used to assignment of reviewer's process and litdimas assessment process on SIRIP system. The results of research can be concluded that:

1. SIVENI system can be used and implemented. The SIVENI system can be used to upload submitted litdimas proposals.
2. SIVENI system can be run and provides facilities for the process of assigning reviewers to submitted litdimas proposals.
3. Assessment process by reviewers can be done well in order to obtain a proposal ranking. This proposal ranking is used as a reference to decide which proposals are funded.

Acknowledgment

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