

Implementation of PHP Based E-KKN at Universitas Islam Lamongan

Danang Bagus Reknadi^{1*}, Munif², Mustain³

^{1,2,3} Informatics engineering, Fakultas Teknik, Universitas Islam Lamongan, Indonesia

Jl. Veteran No.53A, Jetis, Kec. Lamongan, Kabupaten Lamongan, Jawa Timur 62211

^{1*}danz.0907@gmail.com, ²munif@unisla.ac.id ³mustain@unisla.ac.id

Article history:

Received 15 September 2024
 Revised 28 October 2024
 Accepted 20 November 2024
 Available online 9 December 2024

Keywords:

e-KKN,
 SiAkad,
 Information System,
 Tri Dharma University.

Abstract

A college is an educational institution with the mission of developing scientists who are environmentally conscious and equipped to address societal challenges. Additionally, it holds the responsibility of producing graduates who are skilled professionals, capable of supporting and solving the issues that arise within the community. In order to realize the objective and responsibility, each college must carry out activities KULIAH KERJA NYATA (KKN). KKN is a form of community service, which is special because there is an element in the Tri Dharma of Universities, namely: Education and Teaching, Research, Service society. The rapid development of science and technology and the progress of communication tools. The need for a renewal of the KKN administrative system called e-KKN. These features are provided and run in accordance with what has been drafted, with the SiAkad data as a reference database. The purpose of the development of e-KKN is to accommodate the needs of the KKN administrative process for processing data quickly, accurately, and effectively at the Islamic University of Lamongan. In the design, e-KKN has several features that have been prepared in accordance with the groove mechanism of opening the registration portal, process list, and the small groups at random, until the data printing user.



This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. ©2024 by author.

I. INTRODUCTION

Information is one of the things that must be fulfilled by students, because information is a primary need. Without information, it is difficult for students to carry out academic activities. Information must be prepared by the University itself, either in the form of a website display or in the form of a pamphlet [1].

According to the academic calendar, students are required to carry out KKN (Real Work Lectures) as one of the Tri dharma activities of higher education in the form of community service carried out by students in an interdisciplinary, institutional and partnership manner. As the dynamics of society, regional government and central government develop, the KKN program at Lamongan Islamic University is directed at a KKN pattern based on community empowerment [2].

^{1*}Corresponding Author

Along with the rapid development of science and technology and advances in communication tools. There needs to be an update to the KKN administration system called e-KKN. The aim of developing e-KKN is to accommodate the need for a neatly organized KKN administration process for fast, accurate and effective data processing at Lamongan Islamic University [3] [4].

The research objectives of "Implementation of PHP-based e-KKN at Lamongan Islamic University" are Providing a management information system service called e-KKN Unisla, providing a systematic KKN administration service in accordance with SiAkad data, implement automatic grouping in each group based on students who have registered, create a system that is connected to the addresses sisfo.unisla.ac.id and unisla.ac.id.

II. METHODS

The explanation of information systems according to the definition above can be concluded that a system is a group of interconnected elements with a predetermined purpose and objective. The general model of a system consists of input, process and output, as shown in the image below:

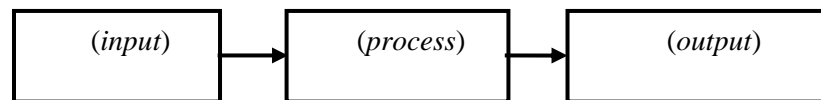


Figure 1. General Model of System

This general model of a system is already a simple system, because a system can have several inputs and produce outputs that are carried out in a process. A system consists of subsystems which include other subsystems [5]. In theory, a system can be differentiated by system types. According to Gordon B. Davis in the book Management Information Systems, there are several types of systems, as follows:

1. Abstract systems and physical systems:
 - a. An abstract system is an ordered arrangement of ideas that are dependent on each other.
 - b. A physical system is a device that operates together to achieve a goal.
2. Deterministic systems and probabilistic systems:
 - a. A deterministic system is a system that in its operation can determine the results with certainty.
 - b. A probabilistic system is a system in which the results cannot be predicted with certainty.
3. Closed system and open system:
 - a. A closed system is a system where there is no exchange of materials or information with the environment.
 - b. An open system is a system that allows the exchange of information with the environment.

III. RESULTS AND DISCUSSION

A. Process Design

1. Flowcharts

A flowchart is a picture or chart that shows the sequence and relationship between processes and their instructions. The flowchart here explains the sequence that Unisla KKN student participants must go through from the Approve process to group randomization [6].

Administrative staff must log in first according to their study program user. Technically, students will submit proof of the requirements to take part in KKN to TU staff to open the registration portal, namely by searching for students according to their NIM. If the requirements are met, TU will press the "Approve" button. After that, students will log in according to their account to register themselves. If

the student's register button is still inactive, it means that the student still has several dependents or requirements that have not been met when they submit their files to TU [7].

Students log in according to their own NIM. After logging in, 2 buttons will appear, namely the Register button and Print card. If the student has been approved by TU, the Register button will be active, if not approved, then the Register and Print card buttons will be inactive. The Print card button will be active if the student has gone through the registration process, if not the button will become inactive [8].

Admin logs in according to the account, then goes to the 'Group Settings' menu. In the Group Settings menu, the Admin will add Field, Village, Group Supervisors as determined by the KKN committee, after that in the 'Group Distribution' menu the Admin will add all students who have gone through the registration process to randomly add them to the Group [6].

2. Context Diagram

The Context Diagram is the highest level in the data flow diagram and only contains one process that shows the system as a whole. The Context Diagram here explains the process that all users go through in the e-KKN system, as follows:

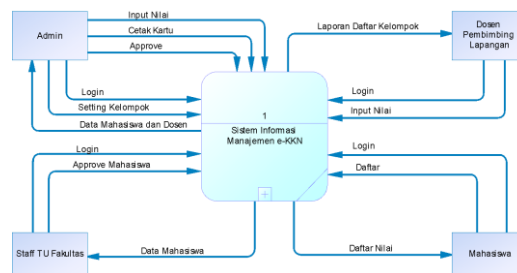


Figure 2. Context Diagram

Admin logs in with user level "Admin". In processing e-KKN data, the Admin has the task of adding students participating in KKN according to SiAkad data, adding Field Supervisors who have previously been selected, and adding group data. The admin himself will receive a list of groups that have been compiled by the system and also receive a list of grades that have been entered by the Field Supervisor after the KKN activity [9].

Students log in using their NIM with the user level "Student". After logging in, students will enter the home page, where on that page there are two buttons, namely the register button and the print card button. If eligible to take part in KKN, students must carry out the registration and registration process by pressing the 'Register' button. Then print the KKN card after registering [7].

Field Supervisors log in using the lecturer code according to SiAkad with the user level as "Field Supervisors". The Field Supervisor receives the group list report from the system. The task of the Field Supervisor in the system is only to enter the grades according to the students in the group list.

Login Administration uses the study program code with the user level as "Administration". The task of TU staff is to carry out the Approve process after receiving the KKN requirements documents collected by students during KKN registration.

3. Data Flow Diagrams

Data Flow Diagram is a diagram that uses notations to describe the flow of system data in a logical, structured and clear manner. DFD here explains the processes carried out by Admin, Students, DPL, TU according to their respective duties, here is an overview:

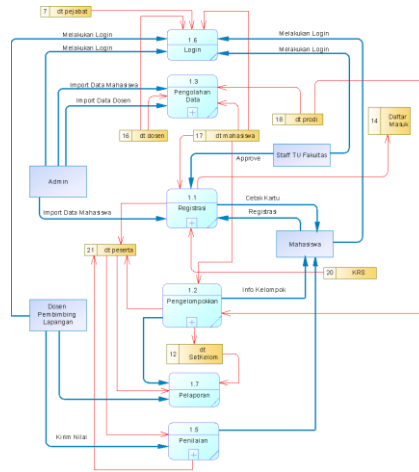


Figure 3. Data Flow Diagram 1

Each user is required to log in before entering the user's own account. In data processing, Admin will synchronize it with SiAkad data. During the registration process, students will not be able to register for KKN before TU approves their data. If it has been approved, then students can register and then print their KKN card. After carrying out the registration process, participant data will be sent to the system to be randomly grouped. Field supervisors will receive a group list containing the names of students in the form of attendance, after that they will input grades according to the group list.

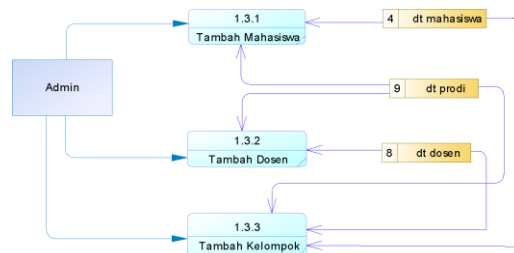


Figure 4. Data Flow Diagram 2

Addition of student and lecturer data is taken from SiAkad data. When adding groups, only include NIM, Student Name, Study Program, and the group's own Field Supervisor.

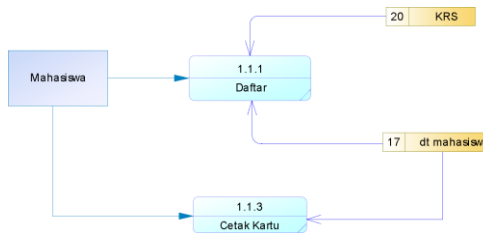


Figure 5. Data Flow Diagram 3

Students register after TU approves the student's account. If it has not been approved, students will not be able to register. The Register service will display student biodata. After completing the registration process, students can print the KKN card in the menu provided.



Figure 6. Data Flow Diagram 4

Administrative staff carry out the approval process after students collect the required documents for participating in KKN.

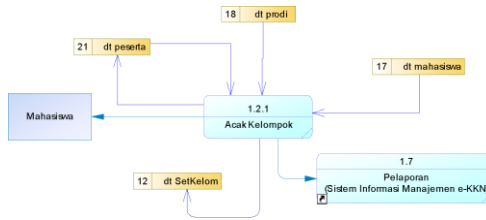


Figure 7. Data Flow Diagram 5

Explain that taking data from the participant table for the process of randomly grouping students.

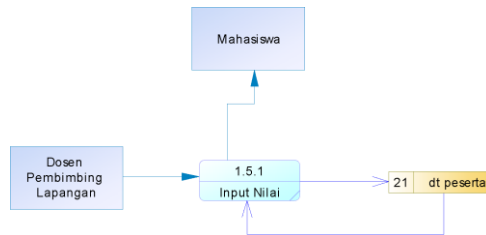


Figure 8. Data Flow Diagram 5

The Field Supervisor will input the grades with data according to the SiAkad. Students can check directly after the Field Supervisor inputs them.

Program Design

Describes the discussion of the program and analysis of the results of the program created, including:

1. Discussion of Interface

a. Login Form



Figure 9. Login Form

This form is used to log in by filling in the username and password and selecting the user level, namely, Admin, Administration, DPL, Student. In this login form interface, the designer used Bootstrap CSS to beautify the appearance and make it look responsive when viewed on a small screen.

b. Admin Menu Display

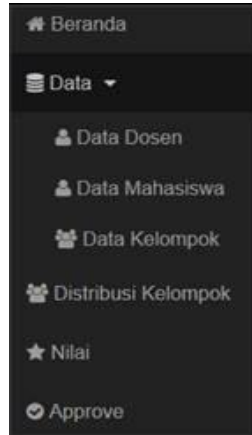


Figure 10. Admin Menu Display

Several menus are available on the Admin page, including: Home which contains information on the Admin page, Lecturer Data which contains lecturer profiles, Student Data which contains student data, Group data to accommodate additional group schedules, Group Distribution to accommodate all students who have through a registration process to be distributed to all groups randomly, Grades as a page to display grades according to group data, and an Approve page to open the registration portal for students who have met the technical requirements.

c. Admin Home View



Figure 11. Admin Home

On the Admin Homepage, a chart is available regarding the number of students at Lamongan Islamic University who will carry out KKN activities.

d. Display of Additional Field Supervisors

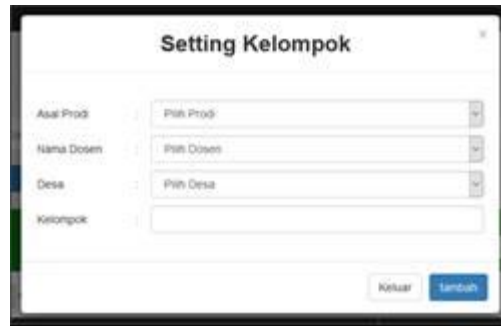


Figure 12. Display of Additional Field Supervisors

Displays the #Capital feature on Bootstrap which contains additional lecturers. If you click Save, the data will automatically be saved in the database.

2. Discussion and analysis for implementation of case trials

a. Login Trial

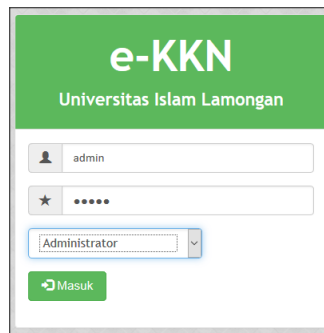


Figure 13. Login Trial

Login as Admin with username (admin), password (admin), user level (Administrator)

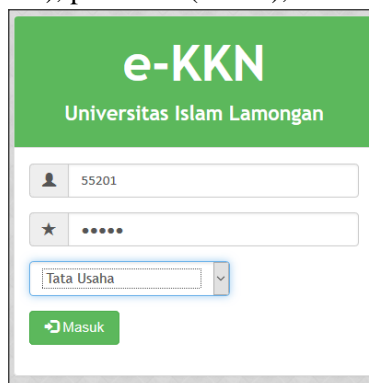


Figure 14. Login As Admin

Login as Administrative Staff, with the username of each study program's study program code. In this trial, the author used the Informatics Engineering study program code with username (55201), password (55201), user level (Administration)

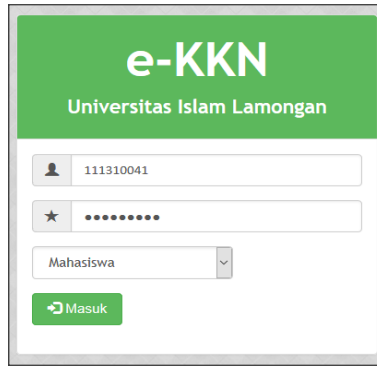


Figure 15. Login as staff

Login as student, with username each student, at try test this time, the author uses NIM *username* (111310041), *password* (111310041), *level user* (Student)

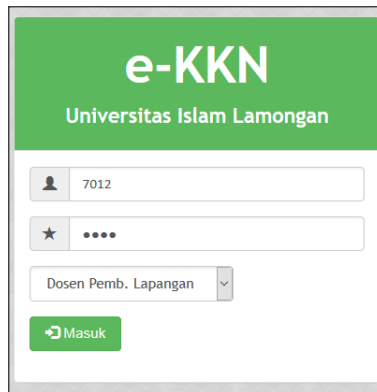


Figure 16. Login as student

Login as a Field Supervisor, with the username Code for each Lecturer. In this trial, the author used NIM username (7012), password (7012), user level (Field Supervisor)

The results of this trial are that the system can recognize user accounts based on each user level, the user will go to the user home page according to their respective level, if a login failure occurs, it is due to an error in entering the username or password by the user.

b. Trial Approve



Figure 17. Trial approval for staff



Figure 18. Trial approve for student view

Login as Admin or Administration. To open the portal for students who have met the KKN requirements, students must first be approved by typing the NIM in the search textbox provided. Once approved, the student's name will not appear again.

The results of this trial are that the system will display data on all students who will register for KKN. If it has been approved, the student's name will not appear again. The function of approve is to open the registration portal for students, if not then the student registration button will be disabled.

c. Trial Edit Account



Figure 19. Trial edit account



Figure 20. Results of the trial approval for staff

If an error occurs or to complete the data, students must log in to their respective accounts and select the "Update Account" menu. If it has been updated, students can see the results on the home page, the data displayed will change according to the input when updating the account.

The result of this trial is that the system will display student data according to SiAkad data. If an error occurs or is required to be completed, students can change it via the account update service.

d. Trial Register



Figure 21. Trial Register for Student

The Figure 21 shows that if the register button becomes inactive, it indicates that the student has not gone through the approval process by the administration of each study program. If it has been approved, the button will become active according to Figure 21 and students can carry out the registration process. If you click the register button, a dialog box will appear according to Figure.

The results of this trial are that the system successfully displays the registration service if students have gone through the approval stage by their respective Administration.

e. Group Setting Trial



No	Nama	Email	Kontak
1	Wahyuni	wahyuni@unswin.ac.id	08123456789
2	Indah	indah@unswin.ac.id	08123456789
3	Wahyuni	wahyuni@unswin.ac.id	08123456789
4	Wahyuni	wahyuni@unswin.ac.id	08123456789
5	Wahyuni	wahyuni@unswin.ac.id	08123456789
6	Wahyuni	wahyuni@unswin.ac.id	08123456789
7	Wahyuni	wahyuni@unswin.ac.id	08123456789
8	Wahyuni	wahyuni@unswin.ac.id	08123456789
9	Wahyuni	wahyuni@unswin.ac.id	08123456789
10	Wahyuni	wahyuni@unswin.ac.id	08123456789

Figure 21. Group Setting and Data Group Supervisors

The picture shows the creation of a group that connects villages and the selection of Field Supervisors. If the process is complete, the names of the lecturers who have been added will appear as shown in the image. The result of this trial is that the system successfully displays Field Supervisor data that has been added via the Group Settings service.

f. Group Distribution Trial



The image displays a list of students who have gone through the registration process but do not yet have a group. If you want to enter students into groups randomly, the Admin will check the "select" column to select students to include them in the group then select add, if so the list of potential participants will appear blank as shown in Figure.

The image marked in red shows the addition of information after the admin carried out the group distribution process for selected students.

The results of this trial were that the system successfully displayed data on the list of prospective KKN participants according to students who had registered and carried out the process of randomly distributing students to groups. As well as showing the success of displaying group info if the student already has a group [10].

g. Value Input Test



Data Mahasiswa	
Nama	ENDANG NUR ANI
NIM	111310041
Jenis Kelamin	Perempuan
Prodi	TEKNIK INFORMATIKA
Agama	Islam
TTL	Lamongan, 09 Juli 1994
Alamat	Desa Tambakboyo RT 01 RW 01 Kecamatan Tikung Kabupaten Lamongan
IPK	3.00
Kelompok	11
Desa	TANGGUNGPRIGEL
DPL	KEMAL FARDOQ M
Nilai	A

In the picture is the value input process by the Field Supervisor with a user account, namely username (1011), password (1011), user level (Field Supervisor). If the lecturer successfully enters the grade, it will appear on the lecturer's homepage (image) and student account (image).

The results of this trial are that the system successfully displays the grades input by the lecturer and will appear on the lecturer's homepage and the student account homepage.

IV. CONCLUSIONS AND RECOMMENDATIONS

The research on the implementation of the e-KKN system has yielded several key findings. First, the introduction of this system is expected to streamline the process of managing online-based registration data efficiently. The required data aligns closely with the existing Unisla SiAkad database, ensuring seamless integration. Additionally, the use of the SQL RAND query enhances the system's functionality by automatically assigning students to groups randomly, ensuring fairness and efficiency. This system will be directly linked to the official university website, www.unisla.ac.id, for easier access and management.

However, there are still several areas that require further development. These include enhancing the security measures of the website, particularly in terms of protecting student data from potential threats such as SQL injection and other forms of cyber intrusion. Furthermore, implementing database replication (backup) is essential to safeguard against data loss in the event of system failures or database corruption, ensuring the continuity and reliability of the system.

Overall, while the e-KKN Management Information System has made significant progress, ongoing improvements in security and data management will be crucial for its successful long-term implementation.

V. REFERENCES

- [1] T. Renaldi, Y. R., and P. R. Arum Setia, "Perancangan Sistem Informasi Kuliah Kerja Nyata Universitas Lampung Berbasis Web," *J. Inform. Dan Tek. Elektro Terap.*, vol. 1, no. 3, pp. 1–11, 2013.
- [2] W. Dwiparaswati, "Development of Information Service Application RT 07 / RW 10 Kecamatan Bekasi Selatan Kelurahan Jakamulya Website Based Using PHP and MYSQL Windy," *J. Eng. Electr. Informatics*, vol. 1, no. 3, pp. 11–21, 2021.
- [3] H. Hermanto, "ITS Community Service Program as A Medium to Empower Community in Facing the Era of Industrial Revolution 4.0," *IPTEK J. Proc. Ser.*, vol. 0, no. 6, p. 78, 2019, doi: 10.12962/j23546026.y2019i6.6350.

- [4] S. H. Mulyani, S. T. Widodo, and R. Herlinda, “Rancang bangun sistem informasi kuliah kerja nyata (E-KKN) Universitas Respati Yogyakarta,” *Pros. Semin. Nas. Multidisiplin Ilmu*, vol. 2, no. 1, pp. 309–320, 2020, [Online]. Available: <https://prosiding.respati.ac.id/index.php/PSN/article/view/294>.
- [5] V. Z. Kamila and S. Eko, “Analisis dan Perancangan Sistem Presensi Kegiatan KKN dengan SMS Gateway,” in *Prosiding Seminar Nasional Teknologi V*, 2019, pp. 231–237.
- [6] M. A. Rizka, A. Sukri, and D. Permana, “The implementation of community development participation (KKN) based literacy education in Central Lombok,” *JPPM (Jurnal Pendidik. dan Pemberdaya. Masyarakat)*, vol. 7, no. 1, pp. 23–35, 2020, doi: 10.21831/jppm.v7i1.30133.
- [7] M. Y. Zain and F. P. E. Putra, “Aplikasi Portal Desa Pada Lokasi Kuliah Kerja Nyata Universitas Madura,” *Konvergensi*, vol. 18, no. 1, 2022.
- [8] I. Rahmat, “Analysis of the Level of Social Skills in the Implementation of Kkn Activities in Riau University Ppkn S tudy Program Students in 2018-2020 Pelaksanaan Kegiatan Kkn Pada Mahasiswa Prodi,” vol. 8, pp. 1–10, 2020.
- [9] A. F. Rifa’i, M. Pratiwi, A. H. Alfain, and M. R. A. Aslam, “Rancang Bangun Aplikasi Kkn Suka Mobile Berbasis Android,” *Apl. J. Apl. Ilmu-ilmu Agama*, vol. 20, no. 2, pp. 143–149, 2021, doi: 10.14421/aplikasia.v20i2.2404.
- [10] R. C. Mandag, A. S. M. Lumenta, and Y. D. . Rindengan, “Pengembangan Sistem Informasi Kuliah Kerja Terpadu (KKT) di Universitas Sam Ratulangi,” *J. Tek. Inform.*, vol. 10, no. 1, 2017, doi: 10.35793/jti.10.1.2017.15375.