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*"Intellectual Property Rights in Technopreneurship based on
Green Bussiness and Technology"*

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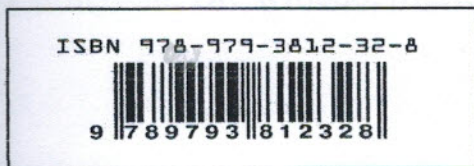
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Performance Index Assessment Software Lecturer (IKD) As The Basis For Academic Peer Review (APR)

(Case studies at the Faculty of Industrial Technology UAD)

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Abstract. Activities of the Academic Peer Review (APR) concerning the assessment of the quality of education and the role of teachers as agents of learning required in organizing the learning process in the framework of the development of education. Ahmad Dahlan University has been certified with ISO 9001: 2008 and IWA 2, one of which is a standard Operational Procedure (SOP) in internal quality of education, namely, to provide assurance of quality assurance from each Department requires the presence of the APR (Academic Peer Review) per a semester at least one time. In APR, Administrative (TU) or the Faculty of experienced constraints in supporting process data to serve as the basis for the activities of specific subjects for the APR. Supporting Data that include the distribution of data values to students, the presence of students, lecturer in performance index (IKD) which consists of 3 components of the assessment of the presence of the professors teaching in school classrooms; (K1), timeliness teacher when submitting values (K2), and student assessments against Professor (K3).

This research uses the method of data collection by means of interviews, observation, and library. System development method using a waterfall process model. In designing the evaluation information system web-based academic (Faculty of industrial technology case studies, UAD) and how to analyze system requirements, designing the system and test the resulting program, as well as conducting maintenance.

The results of this research are expected to be a performance index assessment software lecturer (IKD) as the basis for academic peer review (APR) web-based which can display the information value of the percentage of courses for students, the presence of students, IKD (Lecturer in performance index). Expected by the existence of this system can be implemented for the APR activities subjects taking into account certain data that exists.

Keyword: APR, IKD, Software, information system, Web

1 Introduction

Activities of the Academic Peer Review (APR) concerning the assessment of the quality of education the role of the professor in an attempt to determine educational enhancement. For that lecturer as a learning agent is required to able to organise the learning process with their best in order to development education. The lecturer has the functions and strategic role in the development of education. To carry out its functions properly, the lecturer has a specific requirement for mandatory, one of which is competence. The competence requirements are reviewed from the perspective of administrative, indicated by the presence of a certificate. But in the perspective of educational technology competency is indicated, i.e. functionally the ability manage learning system.

Performance Index Assessment Software Lecturer (IKD) As The Basis For Academic Peer Review (APR)

In accordance with the provisions of handover procedures of value and value, a lecturer give value in accordance with the rules and conditions within the Faculty of referring to the decision of the Minister of national education Safety number: 232/U/2000, concerning guidelines for the preparation of the curriculum of higher education and Student Learning Outcomes Assessment chapter V article 12, paragraph (3) which reads "assessment of learning outcomes revealed by letters A, B, C, D and E are each worth 4, 3, 2.1, and 0". Except for students who do not follow the assessment components do not get quality values (marked X).

Ahmad Dahlan University has been certified with ISO 9001: 2008 and IWA 2, one of which is a standard Operational Procedure (SOP) the appropriate internal quality education, namely, to provide assurance of quality assurance from each Department requires the presence of the APR (Academic Peer Review) per a semester at least one time. If the APR will be implemented for certain courses and one of its components is the existence of the data value in the form of a percentage of the value of distribution of courses, student presensi student, IKD (Lecturer in performance index) which consists of three components, namely: assessment of the presence of the professors teaching in school classrooms; (K1), timeliness teacher when submitting values (K2), and student assessments against Professor (K3) (BPM UAD, 2010).

Ahmad Dahlan University Yogyakarta had academic information system (SIA) (www.sia.uad.ac.id) and Portal (www.portal.uad.ac.id) as a system of information on everything to do with the academic activities of the civitas Academica UAD. But so far from existing facilities include what you want the decision makers (in this case the Deanery) i.e. the availability of detailed data to support activities such as a percentage of the value of the APR of courses for students per course, as examples of how the distribution of values of A, B, C, D, E can be described. The current system only gives the value of the processing systems, the presence of professors, student attendance in class, as well as a lecturer in performance index of forms of MS Excell, resulting in less effective at the time of the data required as a means of support for the policies to be taken. From the data presented in the form of manual Excell, done again for processing can get what you want.

Based on the above question, then at this moment required an evaluation of the academic information system utilization that can be used to process data beginning as a step to an activity which is user friendly, the APR quickly and precisely. In general the University can take advantage of this evaluation information system as a medium of information between officials of the Faculty of the Deanery, departemen, lecturer, and administrator faculty. This system is useful to see the progression of the IKD (Lecturer in performance index). And as a first step the Faculty of industrial technology (FTI) UAD can take advantage of this by inserting a system built into FTI's web site (fti.uad.ac.id) to be accessible for all academica FTI at ikd.fti.uad.ac.id.

During this time officials at the Faculty of industrial technology, has the problems at the time of evaluating the results of the academic value of good value as well as lecturers students as supporting data for decision making. Supporting Data such as Performance Index lecturer, lecturer, Course Assessment of the student's current pengitungannya is still done by menginputkan the data using the microsoft office

Fitri Nugent
Murinto,
Tedy Setiadi

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word and microsoft office excel. In fact, this kind of data processing systems there are many flaws, one of them as the number of input data is limited, can not find out the results of an average performance index is calculated with the lecturers K1, K2, K3 in order to generate IKD, difficulties if there are errors especially textual errors and capacity or the amount of information conveyed is very limited to no detail. But with the value of the distribution of academic evaluation system as an application for evaluating the value data is expected to help The effort in processing the data value, and officials in looking at the results of the evaluation of faculty distribution of academic value at any time when necessary. One of its advantages is the supporting data for the holding of activities can be available quickly in the APR. Based on the things above, in this research will take the title "software performance index assessment of Lecturers (IKD) as the basis for Academic Peer Review (APR) (a case study in Faculty of industrial technology UAD)".

2 Literature Study

2.1 Academic Peer-Review (APR) in the achievement of the quality of education

The Review is a term used to describe the evaluation process involving individuals with related fields. Review of methods used to maintain standards, improve performance, and provide credibility. In academic, peer-reviewed used in decision making related to the advancement of faculty to improve the quality of education in order to make it easier for faculty and campus party in taking the decision according to the standard of selecting subjects the APR that will be reviewed in the future.

World Class University is a measure used to determine the colleges ranking in the world using the survey, known as The Times Higher Education Supplement (THES) that at least 13,000 college admission in this survey. A survey by certain criteria. As for the criteria of academic peer review by a 40% weighting, employers review with a weight of 10%, the faculty student ratio with 20% weighting, citations per faculty (citation per faculty) with a weight of 20%, the international faculty with a weight of 5%, and international student with a weight of 5%.

2.2 Determination Of Performance Index Value Lecturer (IKD)

There are 3 components Determining the value of the IKD (Lecturer in Performance Index) (SOP UAD, 2010) in the form of an assessment of:

1. The number of professors teaching in school classrooms; time attendance (K1).
2. Timeliness teacher when the surrender value (K2)..
3. Assessment of student teachers (K3).

With the provisions of the value of K1 criteria as follows:

1. If the presence of a lecturer teaching time totaled 14 times in school classrooms; a meeting, then got a value of 4.

Performance Index Assessment Software Lecturer (IKD) As The Basis For Academic Peer Review (APR)

2. If the presence of the professors as teaching in school classrooms; add up to 12 times and 13 times, then got a value of 3.
3. If the presence of the professors as teaching in school classrooms; 10 times and totaled 11 times, it gets the value 2.
4. If the presence of the professors as teaching in school classrooms; amounted to 8 times and 9 times, then gets the value 1.
5. If the presence of the professors as teaching in school classrooms; less than 8 times, then gets the value 0.

With the provisions of the K2 criteria as follows:

1. If the submission time lecturer timekeeping value of less than 7 days, then gets the value 4.
2. If the delivery timeliness teacher value less than 8-10 days, then gets the value 3.
3. If the timeliness teacher when the surrender value is less than the 11-12 days, then have the value 2.
4. If timeliness teacher when the surrender value less than 13-14 days, then gets the value 1.
5. If the delivery timeliness teacher value over 14 days, then gets the value 0.

Whereas a value of K3 criteria obtained from the student assessment sheet questionnaire on the lecturer.

Calculation of results in order to obtain the value obtained by the formula: IKD

$$30\%*K1 + 30\%*K2 + 40\%*K3$$

Description: If the lecturer class by the Professor more than 1 class, then the calculation of the IKD remain calculated perkelas.

3 Research Results

3.1 System Analysis

Performance index Assessment software Lecturer (IKD) as the basis for Academic Peer Review (APR) was built to facilitate user (Faculty Administrator and Academic Officials) in getting detailed information about things that relate to academic faculty of industrial technology system includes a number of attendance, student assessment and the appropriateness of the surrender value. In the design of a system are the stages that must be traversed by a systems analyst. It is intended that in the manufacture of the system can be clearer and more focused. During the final stages of designing the database will result in some form of database designs that are ready to be implemented on stages of designing the view menu the view menu data input and output as well as the required supporting technology in the creation of software applications.

As for the specifics of the system to be developed as the needs of users, among others:

- a. software made data can inform about the academic system that focuses on information system evaluation of the distribution of the value of Academic Faculty of industrial technology. Distribution of the Data value of the IKD (Lecturer in performance index) which consists of three

components, namely: the number of professors teaching presence (k1), timeliness teacher when submitting values (k2), and student assessments against Professor (k3) treated systematically so as to provide information according to users' needs.

- b. with respect to a list/information of courses, faculty and the number of Data Records the presence of professors, this software is integrated with academic information system that has been there and can be processed in accordance with the terms of the desired user.
- c. software made capable of performing data processing in accordance with IKD recap of the program of study, semester and academic year to the desired user.
- d. On the processing of Student Grades, the only part of the process/mengiputkan evaluation data has been received from the quisioner spread.
- e. software made capable of performing a calculation value of K1, K2, and K3, where input is a score value but can generate output in the form of average value results from the automatic calculation software, so that it can produce an end result that is the average of the counting value calculation/K1, K2, and K3 in accordance with a predefined formula.
- f. with a recap of the performance index processing system Professor then the user can know in detail the quality of the professors who served as the lecturers at the Faculty of industrial technology, Ahmad Dahlan University.
- g. software made able to perform data synchronization presensi the presence of professors in accordance with the semester, academic year, and courses classes, with academic information system used by Ahmad Dahlan University.
- h. software made capable of performing data processing value per courses IKD and the total value of the IKD per Course, academic year, Semester, lecturer, Courses and per class.
- i. Studies Program Chair can verify and comment recommendations for each lecturer are assessed.
- j. Dean can verify data based on verification of the IKD Chairman Courses.

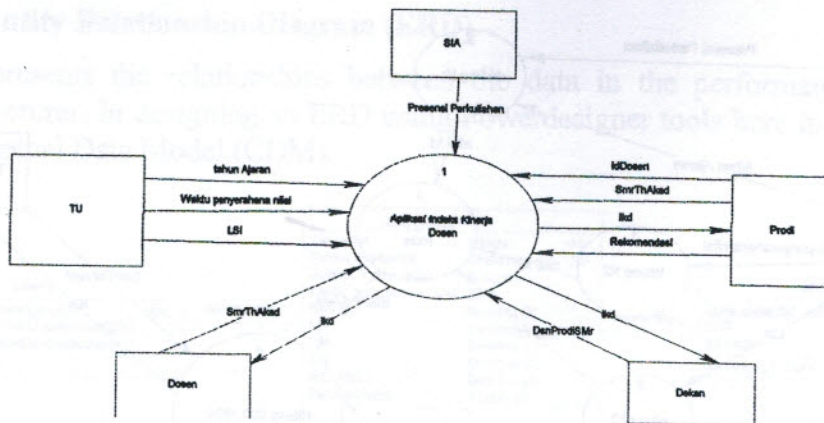
3.2 Design

3.2.1 Context Diagram

Context diagram is a diagram description flow data in the outline that represents the whole of the system to be created. This Diagram illustrates the inventory data into the system along with the source as well as the information generated and the system's purpose.

In general topology of the context diagram that will be developed are as follows:

Performance Index Assessment Software Lecturer (IKD) As The Basis For Academic Peer Review (APR)

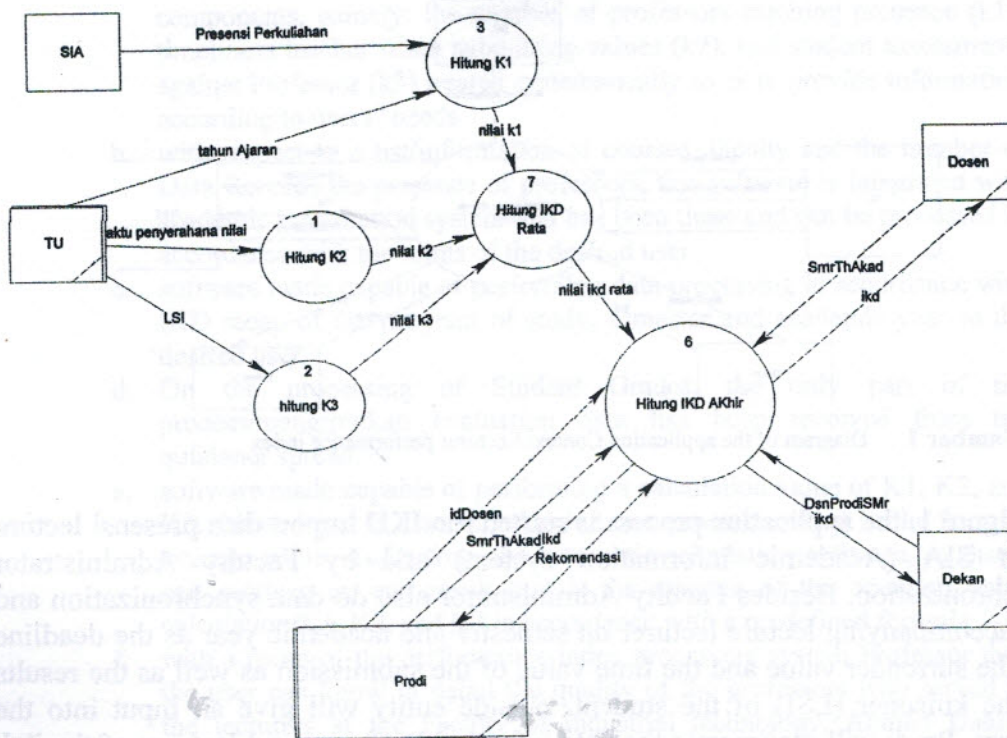


Gambar 1 Diagram of the application Context Lecturer performance index

In Figure 1, the application process is started run IKD import data presensi lecture from SIA (Academic information system) and by Faculty Administrator synchronization. Besides Faculty Administrator also do data synchronization and the accompanying lecture lecturer on semester and academic year as the deadline for the surrender value and the time value of the submission as well as the results of the kuisoner (LSI) of the student. outside entity will give an input into the system. Prodi will incorporate the data informed Professor and lecturer of the ikd, applications could then add the recommendations of professors based on the value of his IKD Professors enter credentials and gets along with the recommendations of the IKD Prodi. Dean can see the lecturer of the IKD applications by entering the Id of a lecturer.

3.2.2 Data Flow Diagram (DFD) levelled

From the context diagram will be developed again into a data flow diagram or data flow that would contain the details of the context diagram. As for his DFD can be seen in the picture below:



Gambar 2 DAD level 1 The Application Performance Index Lecturer

In Figure 2 is the DAD level 1 which is the result of the decomposition of the context Diagram in Figure 1. Existing processes on the system that is the process of calculating the value of K1 teaching presence in class, professors count process of delivery accuracy value K2 value K3 count process count, in the form of student assessment questionnaire scores, calculate process IKD average based on the value of K1, K2, K3 and processes count by adding the final recommendation of the IKD from departement.

3.2.3 First Conceptual Design

a. Entitas Type

Entitas
pegawai

mata_kuliah

semester
prodi

Atributte

id_pegawai, kode_pegawai, nama_pegawai, username, password, level, id_prodi.

id_courses, kode_courses, courses, semester, id_prodi.

id_semester, nama_semester, tahun.
id_prodi, nama_prodi, kode_prodi

b. Relasion Type

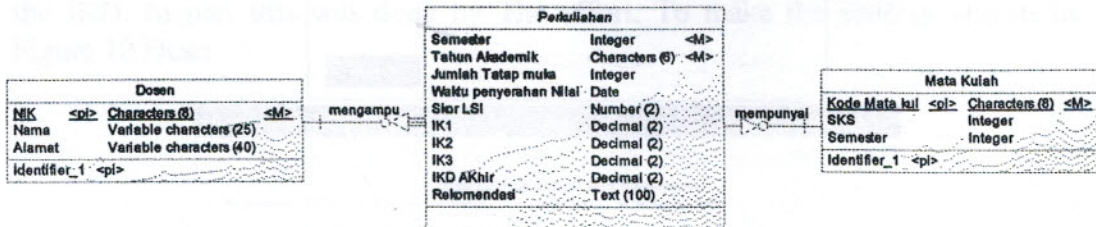
Relasi
ampu

Atribut

id_semester, kode_pegawai, id_courses, kelas, k1, k2, k3, jumlah_mahasiswa.

3.2.4 Entity Relationship Diagram (ERD)

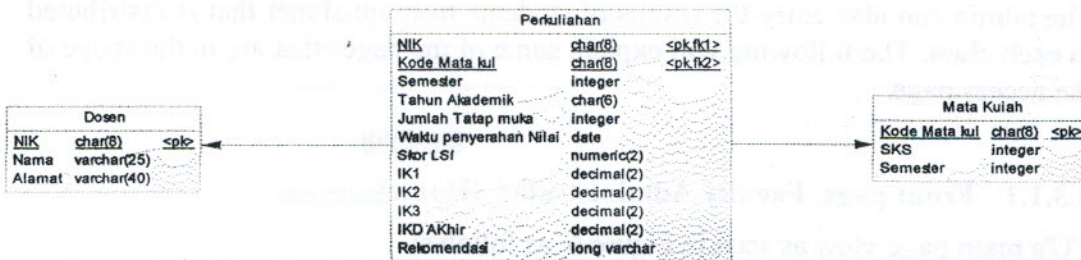
ERD represents the relationships between the data in the performance index system lecturer. In designing an ERD using Powerdesigner tools here in the form of Conceptual Data Model (CDM).



Gambar 3 ER Lecturer In Performance Index

In Figure 3. shows the data needed in the application includes IKD professors, courses and lectures. Lecturers and courses is common, while the entity is an entity that is a partnership Or entity because of the relation have the attributes of the semester, academic year and so on. IKD stored as attributes in the lecturer lectures.

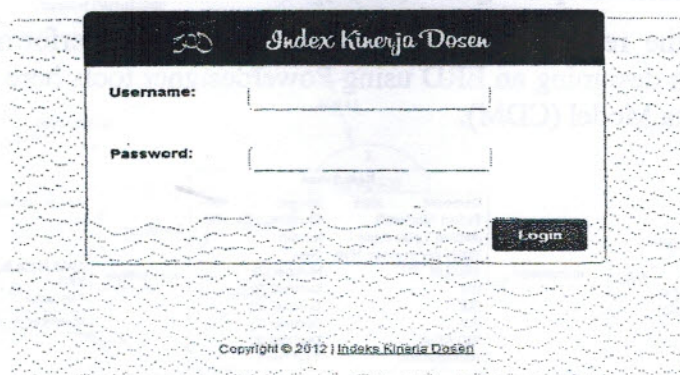
After the CDM is produced, then do the kind of Physical shape to the Data Model (PDM) relation between the tables. The results are shown in Figure 4. NIK and code attribute classes as foreignkey in the table and associated, as a result one to many relation that occurs between lecturers and lectures as well as courses and lectures.



Gambar 4 Relation Between Tables IKD Lecturer

3.3 Implementation

The login page is the home page that is accessed by the user. That is because this system is a system of portals that cater to users with access rights that have been shared. The login page shown in Figure 5.



Gambar 5 Display logged on the system start page

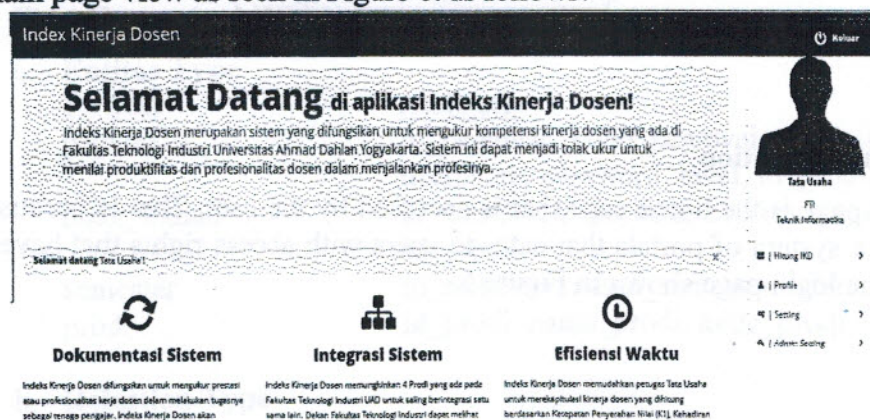
3.3.1 Faculty Administrator page

Faculty Administrator page page is a page that can only be accessed by the user who has the authority or the right of access to data relating to academic data on this particular information system is access to data processing by the user and perform settings against Faculty Administrator the access rights of other users which includes the Dean, and the head of the Department. In the special access page Faculty Administrator is the menus provided to synchronize the data on the Academic information system, such as: the amount of Data the presence of professors, data, data status of this academic year, semester, course data lecturer, who along with Professor.

The admin can also entry the results of students from quisioner that is distributed to each class. The following will explain some of the pages that are in the scope of the access page.

3.3.1.1 Front page Faculty Administrator (Home)

TU's main page view as seen in Figure 6. as follows:

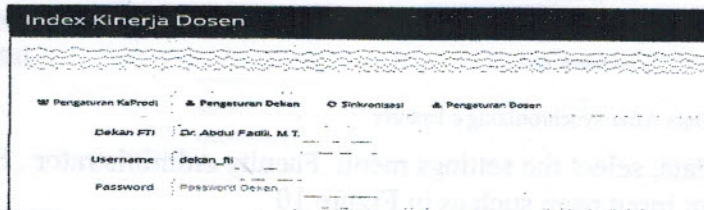


Gambar 6 Home page

3.3.1.2 Account setting page

3.3.1.2.1 Account Dean

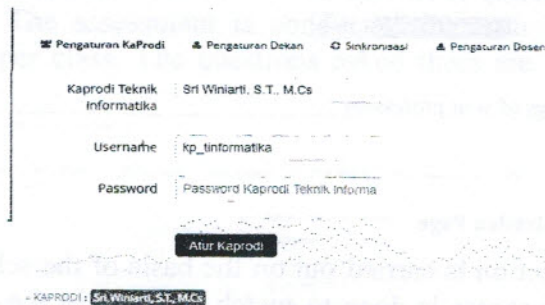
Employees who served the Dean allows to change, for it is done based on the data of the Dean Dean arrangements that exist, the data will be shown in the report of the IKD. In part this was done by The effort. To make the settings shown in Figure 10 Dean



Gambar 7 Dean Setting layout

3.3.1.2.2 Head of Department Account

As with any Dean, also allowing officials Head of Departement change and is used to verify the reports IKD. The display settings as shown in Figure 8 Head of Department



Gambar 8 Head of Departement setting layout

3.3.1.2.3 Lecturer Account

The account made after officers of the Faculty Faculty Administrator synchronize from data in it. The look like in Figure 9 lecturers. Each lecturer who will make the first login will be created by TU. For further background information can change own every lecturer is concerned.

#	NIP / NIY	Nama Dosen	Username	Aksi
▲	60960140	Abdul Fadli, Dr., M.T.		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	132312583	Ali Termuji, S.T., M.Cs.		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	60110647	Ana Hendri Soleliza Jones, S.Kom		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	60910092	Ari Yulisti, Dra., M.Hum		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	60010383	Anton Yudhana, S.T., M.T., Ph.D.		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	60030480	Ardi Pujiyana, Ir., M.T.		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	60030476	Ardiansyah, S.T., M.Cs.		<input type="button" value="Setting"/> <input type="button" value="Reset"/>
▲	596420	Asep Salahuddin, M.Pd.I.		<input type="button" value="Setting"/> <input type="button" value="Reset"/>

Gambar 9 Data After synchronizing a lecturer

Then from the data, select the settings menu Faculty Administrator . So it appears the login account input page such as in Figure 10

Pengaturan KaProdi
 Pengaturan Dekan
 Sinkronisasi
 Pengaturan Dosen
 Pengaturan Akun Dosen

Nama: Abdul Fadli, Dr., M.T.

Username* :

Password Baru* :

Ulangi Password Baru* :

Gambar 10 the display settings of your professors

3.3.1.3 Data lecturer Synchronization Page

Synchronize Data in this section is carried out on the basis of the school year, as shown in Figure 11. This process is done to match the data in the system with existing data on the Academic information system that includes: data, data with faculty status of this courses which lecturer with the class.

Index Kinerja Dosen

Pengaturan KaProdi
 Pengaturan Dekan
 Sinkronisasi
 Pengaturan Dosen

Terakhir Sinkronisasi: 25-11-2012 / 21:16:59 semester: GASAL 2012/2013

Tahun Ajaran: GASAL 2012/2013

Gambar 11 Data Synchronization page

This process will match the existing data in the database system with existing data on University Academic information system. So the retrieved data is valid and do not need to do repetitive input in different systems.

3.3.1.4 The Data Input Page K2 (precision of the surrender value)

K2 is a value judgement of the accuracy of the submission to the parts of The exam results of the effort. In this section, employees enter the date the Faculty Administrator deadline submission date and submit lecturers value values based on lecturer, semester and the lecturer. The input Form, shown in Figure 12. Date difference made the assessment of K2 formula based on points.

Nilai K1 Nilai K2 Nilai K3

Dosen: -- Pilih Dosen -- Semester: -- Pilih Semester -- Matakuliah: -- Pilih Matakuliah --

Nama: FIFIN NOVYANTO, S.T., M.CS.
 NIP / NID: 132312094
 Prodi: TEKNIK INFORMATIKA
 Semester: GASAL 2012/2013

#	Kode Matakuliah	Matakuliah	Kelas	Batas Penyerahan	Penyerahan	Akad
1		Dasar-Dasar Pemrograman	A			Nilai: 4
2		Dasar-Dasar Pemrograman	B			Nilai: 0

Gambar 12 The display form submission value input

3.3.1.5 Data Input Page K3 (Student Assessments Against Professor)

While the assessment of K3 retrieved data from quisioner results are divided for 30 students. The assessment is conducted for each lecturer, per semester, per courses and per class. The questions asked there are 10. Input ratings shown in Figure 13.

Nilai K1 Nilai K2 Nilai K3

Dosen: -- Pilih Dosen -- Semester: -- Pilih Semester -- Matakuliah: -- Pilih Matakuliah -- Kelas: -- Pilih Kelas --

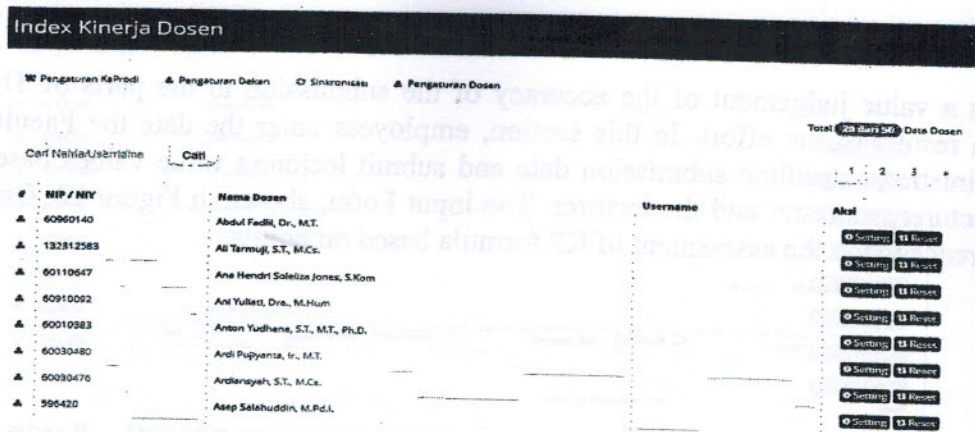
Nama: FIFIN NOVYANTO, S.T., M.CS.
 NIP / NID: 132312094
 Prodi: TEKNIK INFORMATIKA
 Semester: GASAL 2012/2013
 Matakuliah / Kelas: DASAR-DASAR PEMROGRAMAN / A

#	Pertanyaan 1	Pertanyaan 2	Pertanyaan 3	Pertanyaan 4	Pertanyaan 5	Pertanyaan 6	Pertanyaan 7	Pertanyaan 8	Pertanyaan 9	Pertanyaan 10	Masukan	Akad
1	Set	Set	Set	Set	Set	Set	Set	Set	Set	Set		Nilai: 0

Gambar 13 assessment of K3 Input Display

3.3.1.6 Lecturer list page

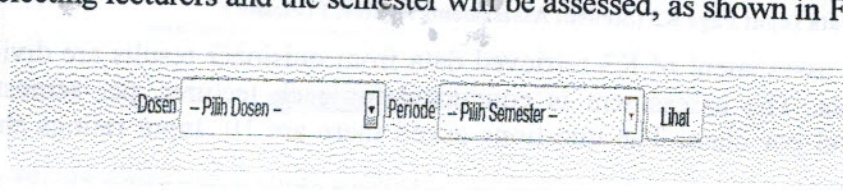
The Data obtained from the lecturers the synchronization results of each study program from data in it. In this section, employees of the Faculty Administrator can also make arrangements with respect to each account a lecturer. The display of a list of Professors can be seen from Figure 14 below:



Gambar 14 Lecturers list view

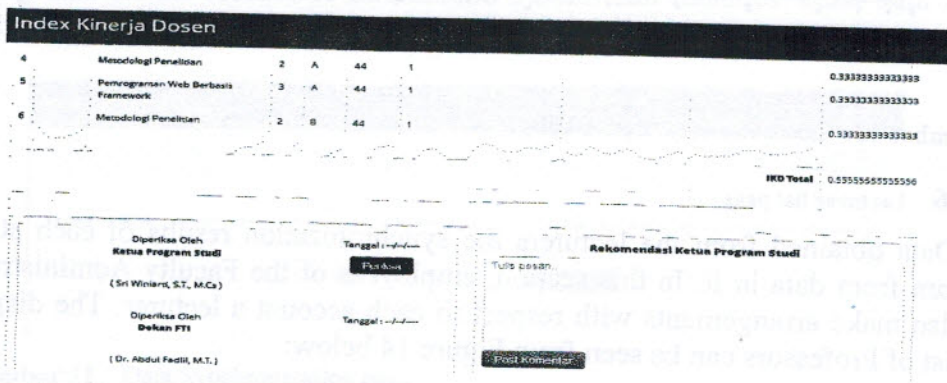
3.3.1.7 Head of Departement Page

On these systems, the task is verifying data Head of Departement IKD and give recommendations for each lecturer, limited to a lecturer at the Prodi neighborhood. The recommendation is based on consideration of comments IKD each lecturer. Assessments made against each of the professors, for that the first step is selecting lecturers and the semester will be assessed, as shown in Figure 15



Gambar 15 the selection of lecturers who will be judged

After that it will perform short biographies of professors, along with a list of courses IKD value obtained. Assessment components include percourses and assessment points total IKD. Further comment or message Head of Departement and choose check button, as shown in Figure 16.



Gambar 16 Head of Departement page

3.3.1.8 Dean Page

Access rights only to see Dean recap IKD entire lecturer at each and verify their status. The look was given to the Dean of equals, but the access Head of Department given to all lecturer at Faculty of industrial technology.

3.3.1.9 Lecturer Page

A lecturer can only be viewed after the verification assessment IKD by Dean and Head of Department. If the unverified then can not be displayed, as in Figure 17.

The screenshot displays a web interface for viewing lecturer information. It includes a header for 'Teknik Informatika' and a list of personal details: Name (FIFTH NOVYANTO, S.T., M.CS.), NIP / NIKY (132312094), Prodi (TEKNIK INFORMATIKA), and Semester (GASAL 2012/2013). Below this is a table for 'Indeks Kinerja Dosen' with columns for Kode, Masa Kuliah, SKK, Kelas, JML, Ketepatan Penyerahan Nilai, Kehadiran Mengajar, Penilaian Mahasiswa, and Nilai. The table contains one row with values: MK, Kuliah, SKK, Kelas, MHS, (K1), (K2), (K3), and IKD. A note at the bottom states 'Data belum divalidasi / diverifikasi'.

Indeks Kinerja Dosen									
Kode	Masa Kuliah	SKK	Kelas	JML	Ketepatan Penyerahan Nilai	Kehadiran Mengajar	Penilaian Mahasiswa	Nilai	
#	MK			MHS	(K1)	(K2)	(K3)	IKD	
	MK	Kuliah	SKK	Kelas	MHS	(K1)	(K2)	(K3)	IKD

Gambar 17 View IKD Lecturer prior verified

3.4 Test results (Testing) System

The last stage in the development of this system is system testing. System testing is performed to test and find out whether the system runs well and true. This system uses two types of tests, namely: the Black Box and the Alpha Test of the test results obtained 100% agree that the application is in compliance. IKD

4 Conclusion

Based on the results of the research, then things can be summed up as follows:

- this information system has been built to support the activities of the APR in the Faculty of industrial technology, Ahmad Dahlan University.
- information systems providing information include the value of the IKD IKD (Lecturer in performance index) for lecturer in FTI UAD environment Yogyakarta.
- information systems used as consideration for performing actions in order to improve the academic-related University.

5 Reference

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