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Application Design for Lecturer Advancement in Sriwijaya State Polytechnic Palembang

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Abstract. This research is entitled Application Design for Lecturer Advancement in Sriwijaya State Polytechnic Palembang. The purpose of this study was to design an application for promotion of lecturers at Sriwijaya State Polytechnic so that data processing can run faster and more dynamically and design employee applications that are based on PHP and use MySql databases. Data collected by interview, observation and literature study.

Keywords: Design, Lecturer Advancemet, Management

1. Introduction

Sriwijaya State Polytechnic until the 2017/2018 academic year has 32 study programs with approximately 5000 students. Sriwijaya State Polytechnic has a vision and mission in the learning process.

VISION: To be a leading and leading vocational education institution.

MISSION: (1) improve the implementation of education in the field of quality engineering, and non-engineering based on the quality assurance system (2) develop, disseminate, and apply science, technology, and art, as well as quality, applied research results to be used in productive activities and improvement quality of community life; (3) develop the organization and improve the quality of the management of the Police Precinct to realize performance effectively, efficiently and sustainably; (4) enhance partnerships with other parties that are mutually beneficial in order to improve the quality of the implementation of the Tridharma Perguruan Tinggi.

The obligation of lecturers as educators is Teaching, Research, and Community Service and other support which will affect the rank of lecturers at a high level. Lecturer research is one component of the lecturer rank process. This study discusses the design problem of the lecturer application rank for Sriwijaya State Polytechnic Palembang.

In the learning process it is necessary to use various learning methods and tools [5], [6], [7] Research that discusses that multimedia is an important thing in the learning process [2], apply learning theory and instructional design models [3], and balanced and broader conceptualization of technology [4]. In Indonesia, the curriculum for forming professional social media skills and identity in a virtual practice community has not been used in general [1].

According to some opinions above the author concludes that the rank is the position of an employee in the staffing structure and is used as a basis for payroll and additional workload, additional mandate.

Table 1. Data of institutional permanent lecturers.

No.	Department	Lecturers	]]	%	FUNCTIONAL L	%	E A	%	T P	%
1.	Civil Engineering	41		43,9	15	36,6	8	19,5	-	-
2.	Mechanical Engineering	41		47,5	16	37,5	5	12,5	1	2,5
3.	Electrical Engineering:									
	1. Electrical Engineering	24		58,3	5	20,8	4	16,7	1	4,2
	2. Electronics Engineering	24		37,	10	41,	5	20,	-	-
	3. Telecommunications Engineering	26		42,3	12	46,2	1	3,8	1	3,8
4.	Chemical Engineering	47		73,3	5	11,1	3	2,2	6	13,3
5.	Computer Engineering	19		21	11	57,9	3	15,8	1	5,3
6.	Accounting	40		47,5	12	30	8	20	1	2,5
7.	Business Administration	42		47,6	17	40,5	4	9,5	1	2,4
8.	Informatics Management	23		8,7	18	78,3	3	13	-	-
9.	English	25		28	14	56	4	16	-	-
10	Personality Development	19		10,5	8	42,1	9	47,4	-	-
	Total	370		43	143	38,7	57	15	12	3,3

Source: Personnel (2018)

Lecturers of all as many as 370 people, based on the academic position, it was seen that 12 people (3.3%) were still in the status of teaching staff or did not have academic positions, 57 people (15%) served as Expert Assistants, 143 people (38.7%) served as a lecturer, and 158 people (43%) served as Chief Lecturer, and there were no Professors.

Based on the background of the problem in this study is how to design a Lecturer promotion application by using PHP and MySql programming to facilitate and accelerate in terms of processing data processing of Palembang Sriwijaya State Polytechnic Lecturers.

2. Design study and system design

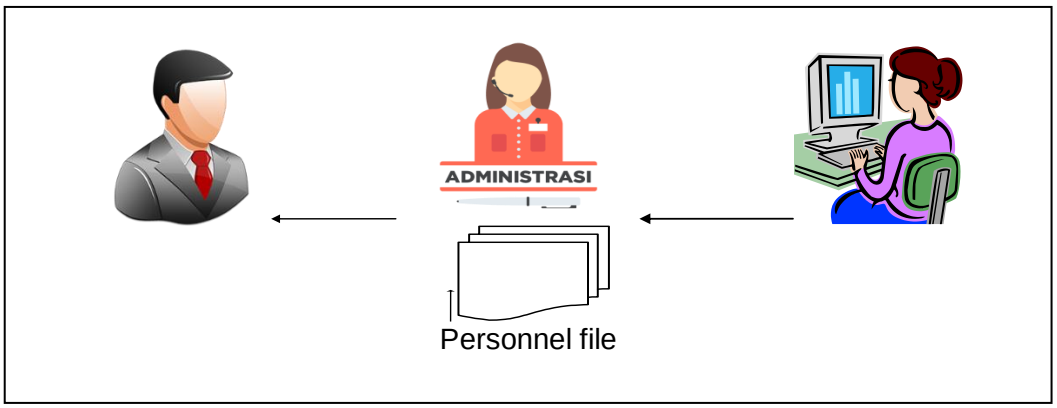

Figure 1. Process of ongoing activities

Context diagrams are used to describe the system in general from the whole existing system. Design Study has information: (1) Administrative officers look for Lecturer data that is ready to rise in rank / increase salary in the Lecturer file. (2) If the Lecturer file is found, the administration officer will warn the lecturer concerned to immediately collect the periodic increase/salary increase file either using a letter or warning orally. (3) The employee collects the requirements for promotion/salary increase to the administrative officer. (5) The administrative officer collects the file with the verification officer for later check and validation.

System Design to achieve the desired goal in designing a new system, a system design is needed with the following steps: (1) Learn and collect data needed to be compiled into a data structure in accordance with the system to be built. (2) Analyzing the obstacles that may be faced that are expected to arise in system design. (3) Determine the incoming design and output that will be produced as a whole so that it is easy to define and evaluate the aspects that exist in the problem of the work plan of the General and Financial Administration Section of Sriwijaya State Polytechnic Palembang. (4) Application implementation based on problems that arise. Inputs from the above points are very useful to achieve the objectives of preparing the research as summarized in Data Flow Diagrams (DFD), Block Charts, Flowcharts, and Entity Relationship Diagrams (ERD).

Event list: (1) Admin logs in by entering a username and password. (2) Admin input employee data to give employees access to be able to enter the application. (3) Employees log in by filling in your username and password. (4) Employees complete employee data. (5) Admin can see promotion data. (6) Admin gets a report on promotion data.

3. Data dictionary

1. **Table of Admin**
   Admin = @employee_id + password + name + place_of_birth + date_of_birth + gender + address + institution_email + email_password
2. **Table of Category**
   Categori + @Status_code + Status
3. **Table of Grade**
   Grade = @grade_id + grade + order
4. **Table of Employee**
   Employee = @employee_id + password + name + email + place_of_birth + date_of_birth + gender + address + status_code + grade_id + grade_promotion_date + next_grade_promotion_date
   Next_grade_promotion_date = *date*
5. **Table of Requirement**
   Requirement = @id + employee_id + requirement_file + grade_id + status

4. Program design

Data Flow Diagrams (DFD) are often used to describe an existing system or system that is developed logically without considering the physical environment, where the data flows or is stored.

4.1. Display login page

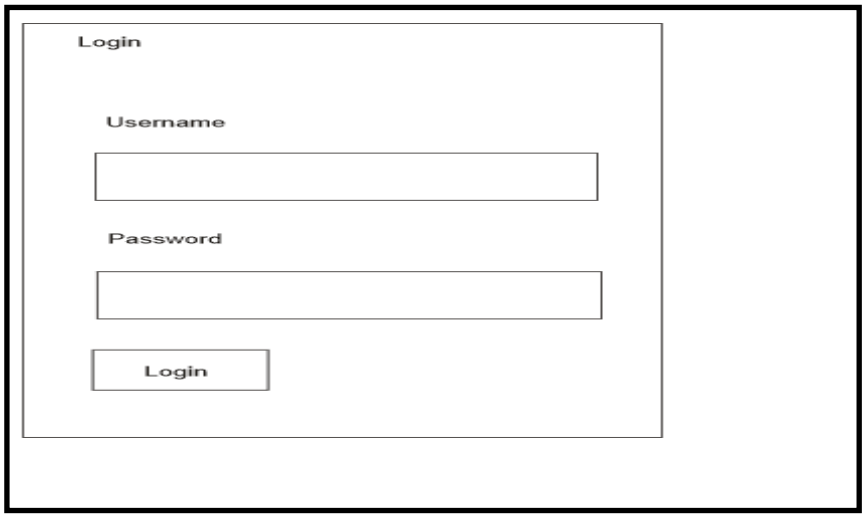

Figure 2. Design login page.

4.2. Display of Admin Homepage

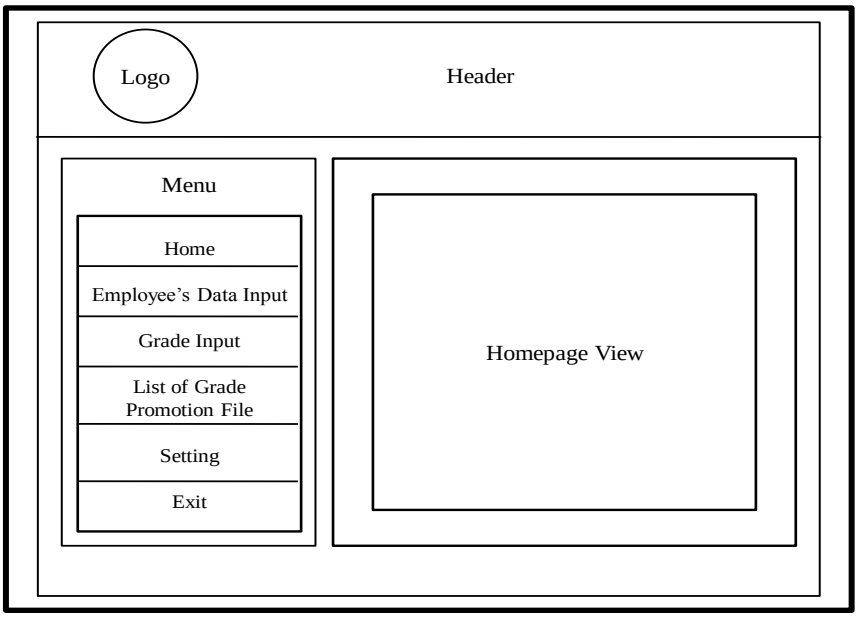

Figure 3. Design of admin homepage.

4.3. Display of grade input page

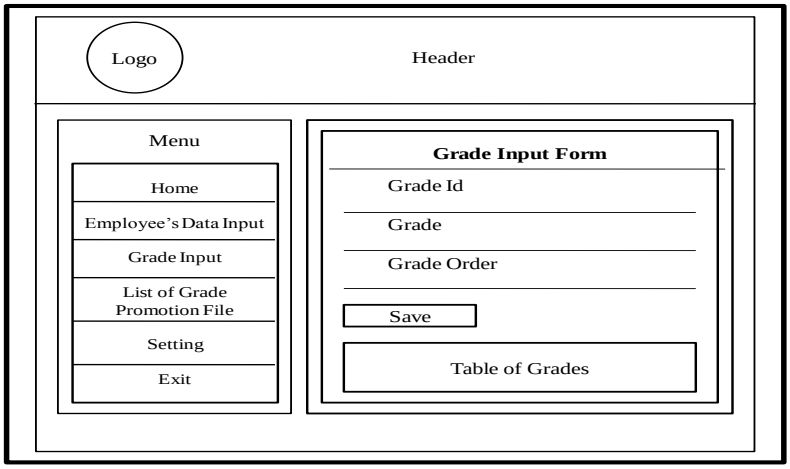

Figure 4. Design of grade input page.

4.4. Display list of grade promotion files

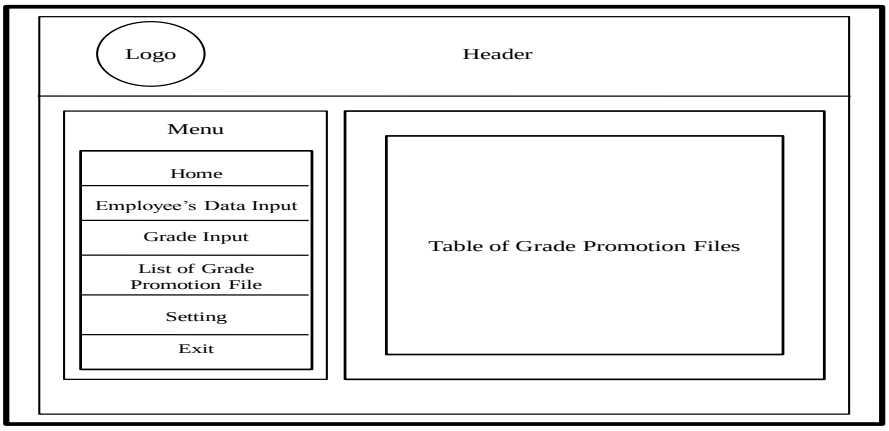

Figure 5. Design list of grade promotion files.

4.5. Display settings page

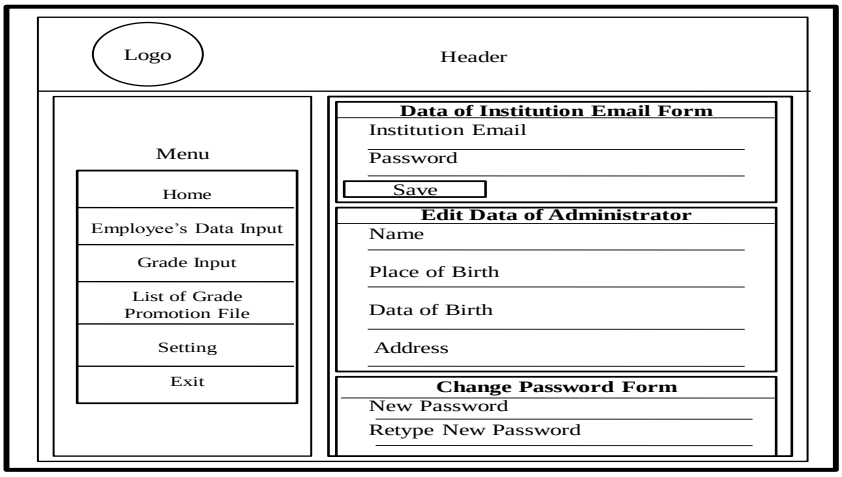

Figure 6. Design settings page display

4.6. Display of employee home page

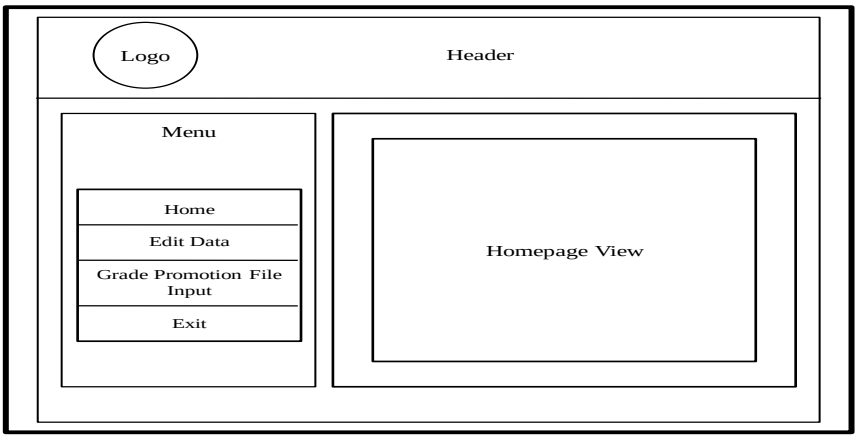

Figure 7. Design of employee home page

4.7. Edit page display

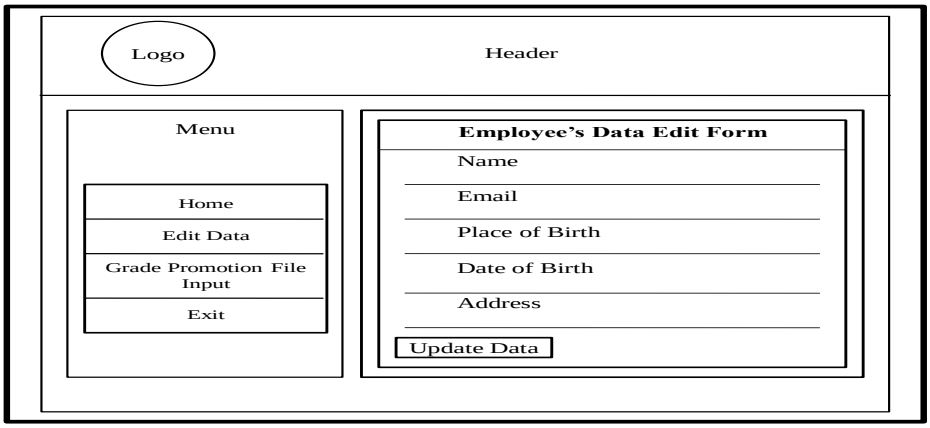

Figure 8. Edit page design

4.8. Input page display

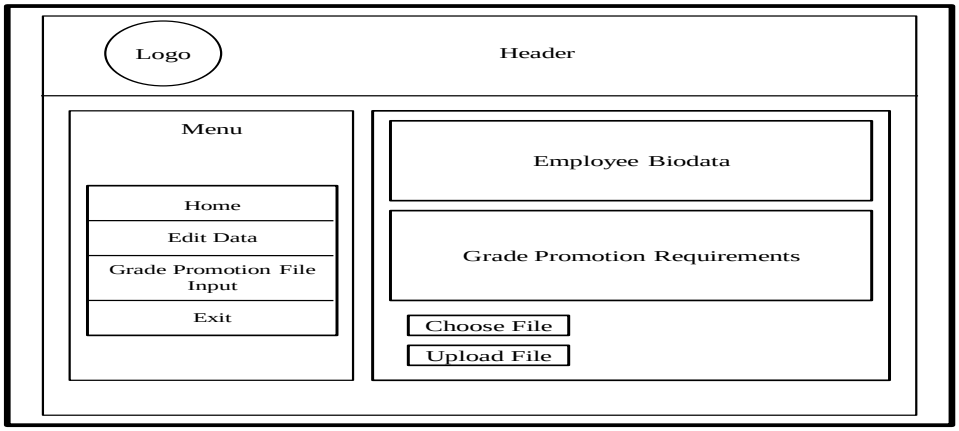

Figure 9. Design grade promotion file input

5. Conclusions

This application is designed as a step to minimize delays in collecting file promotions for employees at Sriwijaya State Polytechnic. The process of upgrading lecturers is already an online system so that it is expected to facilitate the promotion of lecturers.

References

[1] Jeanette Novakovich, Steven Shaw and Sophia Miah 2017 *Data to inform a social media component for professional development and practices: A design-based* Data in Brief 10

[2] K Khalil Mohammed and Ihsan A Elkhider 2016 Applying learning theories and instructional design models for effective instruction *Advances in Physiology Education* vol **11** APR 2016 https://doi.org/10.1152/advan.00138.2015

[3] M V Miller 2009 Integrating online multimedia into college course and classroom: With application to the social sciences *MERLOT Journal of Online Learning and Teaching*

[4] Mustafa Koc 2013 Student teachers' conceptions of technology: A metaphor analysis *Computers & Education* vol **68** October 2013 https://doi.org/10.1016/j.compedu.2013.04.024

[5] Pavan Inguva, Daniel Lee-Lane, Anastasia Teck, Benaiah Anabaraonye, Wenqian Chen and Umang V Shah 2018 Advancing experiential learning through participatory design *Education for Chemical Engineers* vol 25 October 2018 https://doi.org/10.1016/j.ece.2018.10.001

[6] T Reeves 2006 *Design research from a technology perspective* In J V D Akker, K Gravemeijer, S McKenney & N Nieveen (Eds) *Educational Design Research* (New York: Routledge)

[7] Yajima. Kuniaki, Akihiro Nitta, Yoshihiro Takeichi, Noppadol Maneerat and Jun Sato 2018 A proposal of global engineering pbl education using by developed sequence control kit *9th International Conference on Information Technology and Electrical Engineering (ICITEE)* Phuket Thailand

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