Academic Advisory Guidance Application Website-Based

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ABSTRACT

Academic Advisory Guidance at the Information Technology Department Politeknik Negeri Padang is currently carried out manually, causing several obstacles, including time and place. To help with problems that occur, a website-based academic guidance system was built using the waterfall method. The stages of implementation methodology carried out are Analysis, System Design, Program Code Generation, and Program Testing. With this system, students and academic advisors can interact anytime and anywhere without having to meet face-to-face. This can also be a solution for students who have both academic and personal problems.

1.   Introduction

The development of information technology offers a lot of convenience and speed in processing and accessing information. Currently various aspects of life are heavily influenced by information technology such as educational institutions, government, health, and private institutions. One of the information technology media that can be used for educational institutions is website technology by connecting to databases, for example using websites in educational institutions to build systems.

Academic Advisor Guidance Information. Guidance is a process of assistance provided by mentors to individuals who are guided to achieve independence through interaction and giving advice in solving problems.

Academic Advisors are permanent teaching staff who are assigned by the Study Program to provide academic direction, guidance, and consultation activities to students in order to achieve optimal study achievement, both academically, psychologically, and socially.

Guidance of academic advisors at the Padang State Polytechnic, especially the Information Technology Department, is still carried out manually, and the results of guidance still use a documentation system, causing several obstacles, including the difficulty of arranging student meeting times with academic advisor lecturers to conduct guidance. In addition, this system can make it easier for academic advisor lecturers (DPA) to document reports on student guidance activities.

In carrying out academic activities, students of the Padang State Polytechnic Information Technology Department actually have the motivation to carry out academic activities well. However, in the

process it is not uncommon for students to be faced with various obstacles. Therefore, an academic adviser is needed to guide students in carrying out academic activities.

2. Methods

The methodology used in this study is to use the Waterfall method. Waterfall is a method of developing an information system that is systematic and sequential in that each stage in this method is carried out sequentially and continuously. This waterfall method consists of a series of sequential and systematic processes from the stages of analysis, design, coding and testing. The stages in this study are shown in Figure 1.
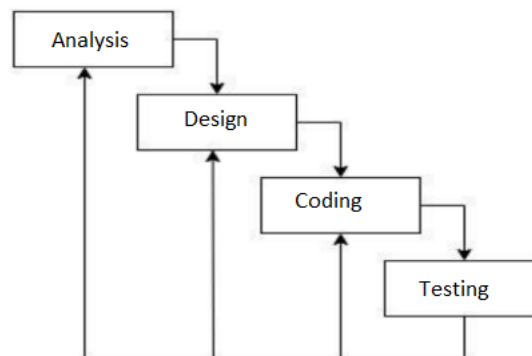

Figure 1. Research stages

a)   *Analysis*

The analysis phase is carried out by analyzing users who will use the system and digging up information about the flow of the academic guidance process between students and academic advisors and making requirements specifications about the system to be built.

b)   *Planning*

The next stage is to formulate system architecture design, database design, user interface design, and application process design. Design is an activity to create an integrated work concept between humans and machines in order to produce accurate information in decision making. The purpose of system design is to meet the needs of system users and provide a clear picture and complete design to the programmer. At this stage also design functional requirements and non-functional requirements that are tailored to the needs of users who will use the system.

c)   *Development*

This stage is the implementation of the design stage, which is technically carried out by the programmer, namely the programming process for the system to be built. Making the system is broken down into small modules which will then be combined in the next stage. At this stage an examination is also carried out on the modules whether they are in accordance with their respective functions or not.

d)   *Implementation and Testing*

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examination is also carried out on the modules whether they are in accordance with their respective functions or not.

3.   System Design and Implementation

a)   System Design

The system design implemented in the research can be seen in the several activity diagrams below.

1)   Admin Activity Diagram

In Figure 3 it can be seen that before entering and managing data on the system, the admin must first log in using a username and password. If the login is successful then the system will display the dashboard page and if the login is not successful it will return to the login page an error message will appear and the admin can log in again. On the dashboard page a menu list will appear which will be selected by the admin and the admin can manage data such as adding data, changing data, and deleting data.
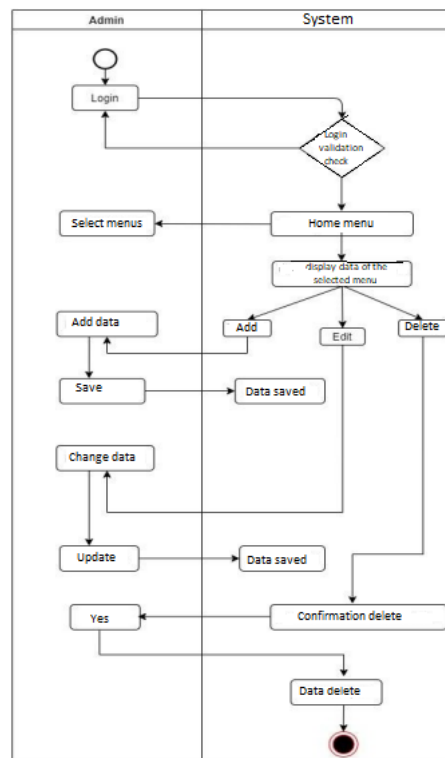

Figure 2. Admin activity diagram

2)   Student Activity Diagram

In Figure 4 it can be seen that before entering and managing data on the system, students must first log in using a username and password. If the login is successful then the system will display the dashboard page and if the login is not successful it will return to the login page an error message will appear and students can log in again. After successfully logging in students are asked to complete a personal biodata form first before continuing the guidance. If you have finished completing the data, students can carry out guidance with an academic supervisor and students can also view the details of the guidance. When finished, students can log out of the system.
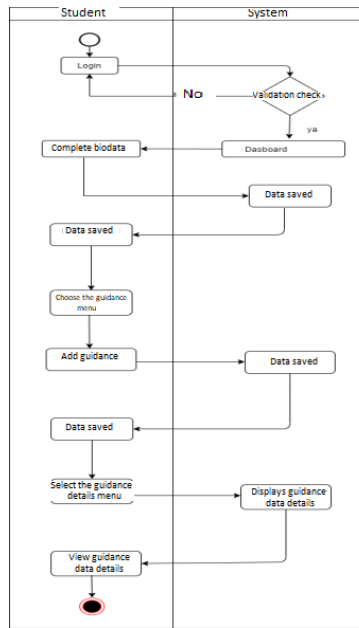
Figure 3. Student activity diagram

3)   Activity Diagram of Academic Advisor

In Figure 5 it can be seen that before entering and managing data on the system, PA lecturers must first log in using a username and password. If the login is successful, the system will display the dashboard page and if the login is not successful, an error message will return to the login page and students can log in again. On the dashboard page a menu list will appear which will be selected by the PA lecturer and the lecturer can view detailed student biodata, edit the guidance form and view the guidance history.
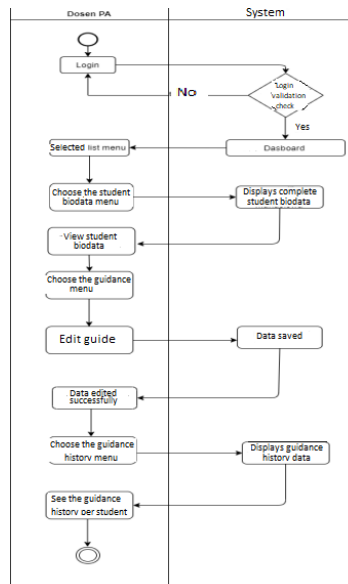

Figure 4. Activity Diagram of Academic Advisor

4)   Head of Study Program Activity Diagram

In Figure 6 is the activity diagram of the head of the Study Program. In this system the head of the Study Program will log in by entering an email and password. If the login is successful, the dashboard

page will appear. If the login fails an error will appear and the head of the study program can log in again. On the dashboard page, the head of the Study Program will see a report on student guidance data with PA lecturers that have been added by previous PA lecturers. After viewing the report, the head of the Study Program can log out of the system.
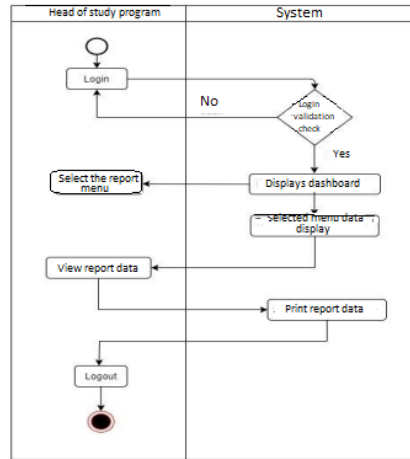

Figure 5. Head of Study Program Activity Diagram

b)   ***Implementation System***

In Figure 6 is the home screen when you enter the Information Technology Department Academic Advisory Guidance Information System website. In the picture above there is an access role to log into the system, for lecturers and heads of study programs select and click the lecturer button while students click the student button to navigate to their respective login pages.
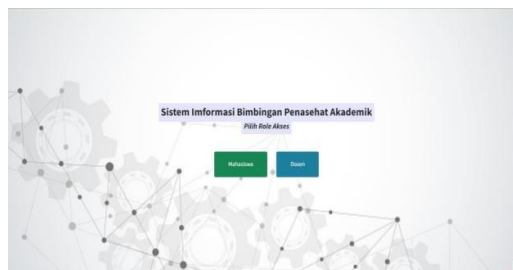

Figure 6. Main page

Figure 7 shows the page for managing class details for the Information Technology Department, in this view the admin automatically adds students to the predetermined classes.
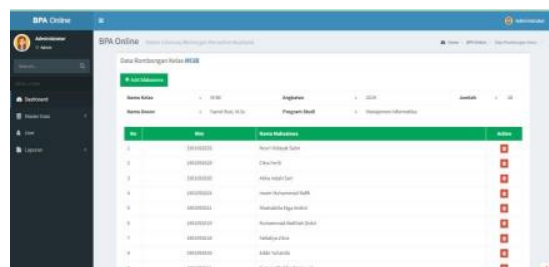

Figure 7. Class Student List Page

Figure 8 shows a list of biodata that has been supplemented by student guidance which can be used by PA lecturers as a reference for providing solutions related to problems faced by students. This page can be seen on the account of each PA Lecturer.
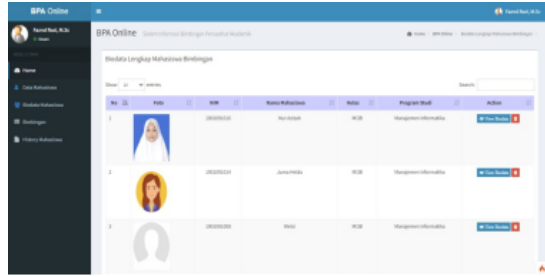
Figure 8. Complete Student Data Page

Figure 9 shows a detailed list of student guidance. There is a table containing name, name, date of guidance, guidance, student problems, lecturer solutions, and button solutions and delete.
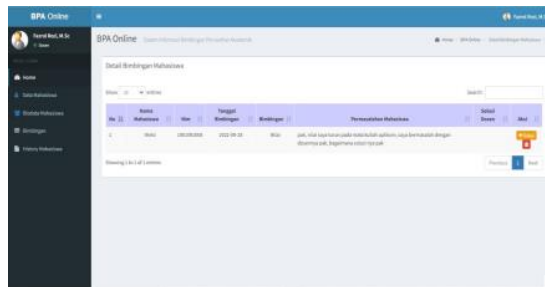

Figure 9. View Guidance List Page

When students have conducted guidance with PA lecturers, their guidance reports can be printed for other academic purposes. In Figure 10 is a printed page of a detailed report on student guidance with Academic Advisors.

Figure 20. Display Print Student Guidance Details

In Figure 11 is a page display of a list of printed student reports per class. On this page the Head of Study Program can view and print student reports per class.
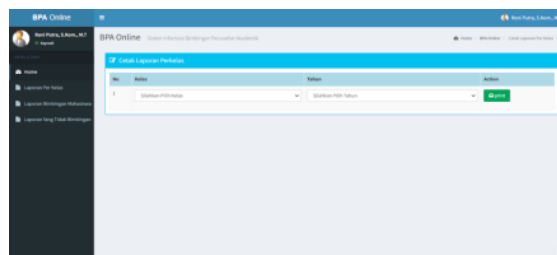

Figure 31. Display Page List Print Student Reports Per Class

4. System Testing (Website)

After designing and implementing the website, testing of the running system functions is carried out. Testing can be seen in Table 1.

Table 1. System Testing

No	Test Points	Scenario	Expected Results	Test Results
1.	Login Page	Access system	Login page admin	Matching
2.	Displays the home page	Access the system then login	Home page appears	Matching
3.	Manage user data	Admin selects the user menu on the sidebar then adds, edits and deletes data through the forms and buttons provided	Displays the user menu page and changes data in the database	Matching
4.	Manage religious data	Admin selects the religion menu on the sidebar then adds, edits and deletes data through the forms and buttons provided	Displays the religion menu page and changes data in the database	Matching
5.	Manage study program data	The admin selects the study program menu on the sidebar then adds, edits and deletes data through the forms and buttons provided	Displays the study program menu page and changes data in the database	Matching
6.	Manage class data	Admin selects the class menu on the sidebar then adds, edits and deletes data through the forms and buttons provided	Changing data in the database	Matching
7.	Manage lecturer data	The admin selects the lecturer menu on the sidebar then adds, edits and deletes data via the forms and buttons provided	Displays the lecturer menu page and changes data in the database	Matching
8.	Manage student data	The admin selects the student menu on the sidebar then adds, edits and deletes data through the forms and buttons provided	Displays the student menu page and changes data in the database	Matching
9.	Print Student Reports per class and year	Clicking the print button by class and year	Displays report data according to the desired class and year	Matching
10.	Student data menu page	The Academic Advisor clicks on the student data menu	Displays a list of student data	Matching
11.	Student biodata menu page	The Academic Advisor clicks on the student biodata menu	Displays complete student biodata	Matching
12.	Guidance menu page	Academic Advisors can click the add solution button on the guidance menu	Adding a student problem solution form	Matching
13.	Guidance history menu page	The Academic Advisor clicks on the guidance history menu	Can fill in personal data	Matching
14.	Student home menu page	Students complete the personal biodata form	The customer successfully booked a recording schedule	Matching
15.	Menu page added guidance	Students click on the added guidance menu and input their problems	Displays data notification successfully added	Matching
16.	Guidance detail menu page	Students click on the guidance details menu	Displays student guidance details	Matching

From the test results above, it can be seen that:

a) Testing is carried out on each form of each role that can be accessed.

b) Each form tested runs according to user requirements.

Testing with the Black Box method above can provide an overview of how a series of scenarios is carried out to obtain valid results or outputs, so that several documents can be documented.

5.   Conclusions

The design of the Academic Advisor Guidance Information System website was created to assist students and lecturers in conducting academic guidance both online and offline. The system can recapitulate the guidance history of each student or academic supervisor. The Head of Study Program can directly monitor the guidance process carried out by students.

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