Management Information System of Student Affair in Manado State Polytechnic

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Abstract: Student's Data in Manado State Polytechnic is currently still being processed separately and manually. So when the leadership needs real data, the data is no longer there or is not relevant anymore. This is because the data is not stored in an application. Even if it is in Excel form, the data is separated every year and even the data is different from the data in the personnel or the Dikti Database. Therefore, the head of the researcher as Deputy Director of the Student Affairs Section intends to create an integrated student information system. So, getting data about students is only through one application. This application will record all student data, both old and new students. As well as accommodate all interests, talents and potential of students so that students can be grouped according to their potential so that in a student activity we can look for student potential in accordance with these activities. So that students can develop their potential through useful activities. Through this application, data can be obtained from students who have not paid tuition, who are on leave, and who are active. The weakness of the current system is that scholarship recipient data is often duplicated and also that student data has not been integrated with scholarships and tuition payments. Where often in the data of students who have not paid tuition, there are KIP scholarship students who receive 100% full tuition assistance. This application will overcome the weakness of this system by integrating scholarship recipient data and its types with tuition payments. That way scholarship receipts will not overlap. Likewise, to search for student data through profile searches to find student track records, both to look for achievements or talents or for students with problems. This application will also be connected with the activities of student organizations. So that monitoring for activities and use of funds can be monitored directly. So, the all student activities are on target and not overlap. In the distribution and distribution of the budget will be very easy to evaluate. In the search for talent for achievement, this application can do tracking so that it can gather students into UKM according to their interests and talents. With this integrated student application, students and leaders can interact directly in all activities and reporting results can be seen by all users. For this reason, this application will improve the performance of leaders and students in carrying out activities and to support the education.

1 INTRODUCTION

Currently, there are often problems with wrong student data or duplicate data at the Manado State Polytechnic. This is because the system used today is still manual and even if there is a computerized system used, it is still separate from one application to another. For example, data on scholarship recipients, where scholarships are often awarded that are not in accordance with the actual situation. The data of scholarships or tuition deductions are not properly stored and analysed. Likewise, there are still students who receive full scholarships and are noted to have not paid tuition. Duplicate data is still often encountered, because the application used by the staff is still separate from the data in the Deputy Director for Student Affairs. Currently, data management in SMEs and Ormawa is still carried out individually for each administrator. This has resulted in the leadership, in this case the Deputy Director for Student Affairs, being unable to monitor activities and financial responsibilities and reporting. Currently, there are many interests, talents and potentials of students that cannot be developed to the

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fullest. This is because the potential and achievements of students in certain fields have not been recorded. In addition, there are still many problems with student data that have not been stored properly. This certainly greatly affects student activities, both co-curricular and extra-curricular. Therefore we need an information system that can accommodate all student data, be it student profiles, student activities, UKM, Ormawa, SPP, scholarships, collaborations, activity reports and so on. The data will be accommodated and stored in a web-based information system. Thus all information can be obtained both by students, leaders, management employees as well as SMEs and Ormawa. This information system will be integrated with the application in the student department so that information will not be duplicated or overlapping. Leaders can also monitor every activity that is being carried out. Likewise, the leader can evaluate all the activities carried out. Leaders can also track all students to get the appropriate information. Thus this information system will be very useful for institutions.ed equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

2 RESEARCH LITERATURE

2.1 Management Information Systemdecission Support System

According to Wahyono (2004:23), Management Information System in a company is a collection of management systems or systems that provide information that aims to support management operations and decision-making in an organization that tends to relate to considering what information, for whom, and when. must be served. with computer- based information processing. A computer-based Management Information System (MIS) is a SIM that places computer data processing tools in an important position (Sutabri, 2005:99). Currently, when describing a modern MIS, what is meant is a computerized MIS so that the ideas of computerization in private and public organizations are actually related to the goal of improving the information system itself.

The concept of Information Management has been defined as the ability of an organization to create, maintain, retrieve information at the right time, in the right place, and to the right people, at the lowest cost, used as the best medium and used in decision making. In short, therefore, the key content involved in information management is managing information in an organization using modern information technology. The concept of Information Systems is a system to receive data / information as raw materials and through one or more transmutation processes, produce information as a product. It consists of the following functional elements related to the organization and the environment in the form of physical recording of data, processing - transformation according to the "special" requirements of the organization, transmission - the flow that occurs in information systems, storage - presupposes some expected future use, recovery - search for recorded data, presentation - reporting, communication, and decision making - inclusion is controversial, except to the extent that the information system is involved in the decision making that concerns itself

2.2 OLTP (Online Transaction Processing)

According to Stair and Reynolds (2010), OLTP is a form of data processing where each transaction is processed immediately, without delay in collecting transactions into batches. It has the characteristics of a large amount of data but the transactions carried out are quite simple such as insert, update, and delete. The main thing that becomes the concern of the OLTP system is to perform queries quickly and easily to be repaired and accessible. Online Transaction Processing (OLTP), which is a database concept that contains data processing to record daily transactions. Such as: daily sales transactions. The characteristics of OLTP:

- Data access is read-write - insert, update, delete
- The orientation of the data in the application is the data taken from the business process
- Character data is not important
- Consistent data activity

2.3 OLAP (Online Analytical Processing)

According to Turban, Sharda, Delen, and King (2011:77) the main operational structure in OLAP is based on a concept called the cube. The cube in OLAP is a multidimensional data structure (actual or virtual) that allows fast data analysis. It can also be defined as the ability to efficiently manipulate and analyze data from multiple perspectives. The

arrangement of data into cubes aims to overcome the limitations of relational databases. Relational databases are not suitable for fast and close analysis of large amounts of data. Instead, they are better suited for manipulating records (adding, deleting, and updating data) that represent a series of transactions.

Online Analytical Processing (OLAP), which is a database concept where data processing is used to analyze data such as sales trends and age. OLAP features:

- Read-only
- Oriented on business subjects
- Data integrated
- Data is historical
- Uncertain data activity

2.4 ETL (Extract Transform Load)

Data extraction is the process by which data is retrieved or extracted from various operational systems, either using queries, or ETL applications. There are several data extraction functions, namely:

1. Automatic extraction of data from source applications.
2. Filtering or selecting the extracted data.
3. Sending data from various application platforms to data sources.
4. Changes in the data layout format from the original format.
5. Storage in temporary files for merging with extraction results from other sources

2.4.1 Data Transformation

Transformation is a process where the raw data extracted is filtered and changed according to the prevailing business rules. The steps in data transformation are as follows:

1. Mapping the input data from the original data schema to the data warehouse schema.
2. Converting data types or data formats.
3. Cleaning and removing duplication and data errors.
4. Calculation of derivative or initial values.
5. Calculation of aggregate or summary values.
6. Checking data reference integrity.
7. Filling empty values with default values.
8. Merging data. Decision Support System (DSS) is a system that interactively provides information, modeling, and data manipulation where the system is used to assist decision making in semi-structured and unstructured problems, where no one knows for sure how decisions should be made (Alter, 2002). ecision Support Systems (DSS) are generally built to find a solution to a problem with several available options (alternatives) based on knowledge, or evaluate an opportunity based on existing data. The decision support system is called the DSS can solve these problems. To find solutions to certain unstructured management problems, DSS applications use a flexible, interactive, and adaptable CBIS (Computer Based Information System) (Kusrini, 2007).

The objectives of the Decision Support System are (Turban, 2005):

1. Assist managers in making decisions on semi- structured problems.
2. Provide support for the manager's judgment and is not intended to replace the manager's function.
3. Increasing the effectiveness of decisions taken by managers more than improving their efficiency.
4. Computing speed.
5. Increased productivity.
6. Quality support.
7. Competitive.
8. Overcome cognitive limitations in processing and storage.

3 RESULT

3.1 System Model Design

We design the system model based on the data model technique to retrieve the all information based on the student data manually. At the first we define all the requirements by the Student Affair Unit:

- Student Personal Data
- Scholarship Data
- Student Talent Data
- Student Activity Unit

The second step, we ask the rules of the users:

- This system has 4 kind of users, that are the admin, the head of student affair unit and the student
- The admin has the access to give any permission to the students and give the username and password to the users besides to remove them also

- The head of unit has the access to search and find the all information about the student and also setting administration staff access
- The operator/ administration staff who has only read and retrieve some information
- The students have only read and edit personal data and few information on the system

3.2 Dashboard (Main Page)

The main page of this system display all of the available information. If you login by the account of admin or the head of student affair unit, you can edit and retrieve some information and data. If you login as a student, you only able to read and make a little update of your personal data

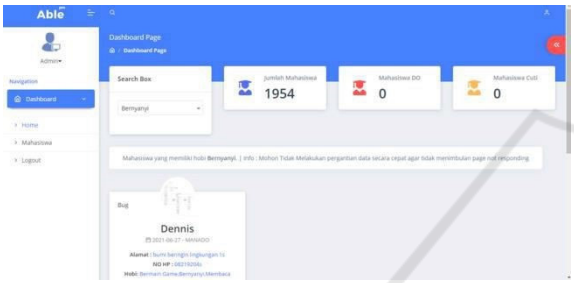

Figure 1: Main Page.

3.3 Admin Page

Admin has an access to give the user privilege to the all user in this system. Every student has an account to enter the system made by the admin. Admin can also remove all users in this system.

Figure 2: Admin Page.

3.4 Admin View for Student's Talent

All of the student's talent is saved and display in this page. We can manage the talent of the student by organized the same talent into the some group.

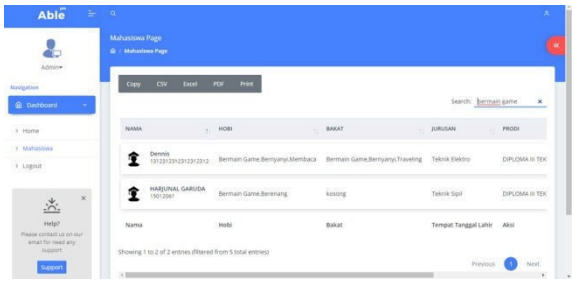

Figure 3: Admin View.

3.5 Student Dashboard

The all student enter this system by using their account. All of the data here is fill-in by the student. Not only write the blank box but also the student can update their personal information.The student can chose their activity organization based on their talent and hobby.

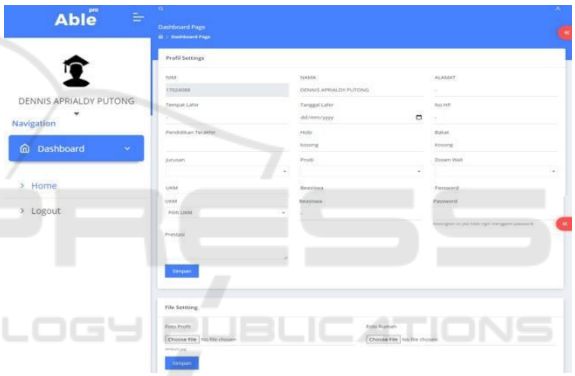

Figure 4: Student Dashboard.

3.6 Student Page Detail

Below is the display of student personal data. The data can be updated by the student.

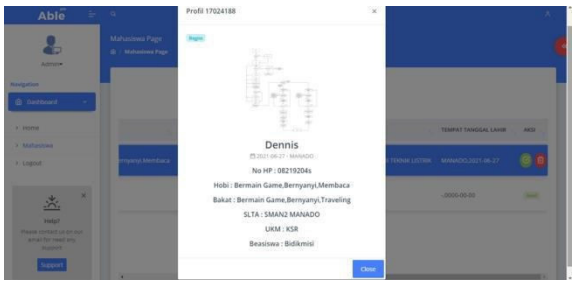

Figure 5: Student Page.

3.7 Data Input for Scholarship

The student is asked to fill the form below to show their scholarship. The scholarship can't be double.

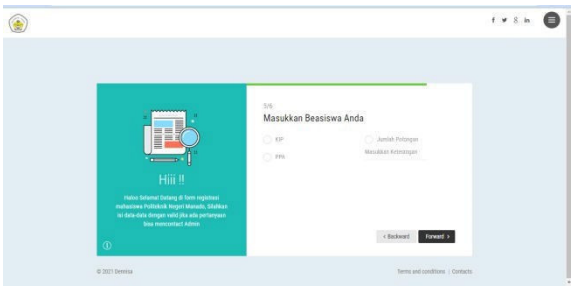

Figure.6: Data Input Scholarship.

3.8 Searching for Bidik Misi Scholarship

Below is the display of the Bidik Misi Scholarship. The same scholarship can be display together. So the admin and head of the unit can make a report about the all scholarship of Bidik Misi like the display below:

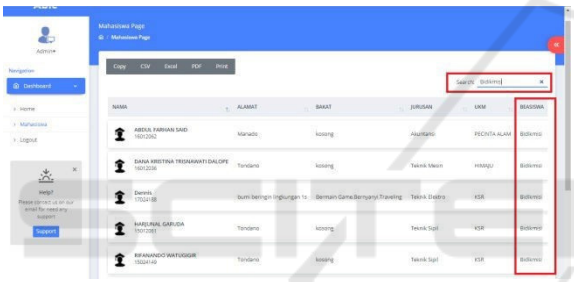

Figure 7: Bidikmisi Scholarship Data.

3.9 Searching for KIP Scholarship

KIP Scholarship is the same as the Bidik Misi Scholarship. But there are different in the period. So, the admin can retrieve the information of the scholarship in certain period.

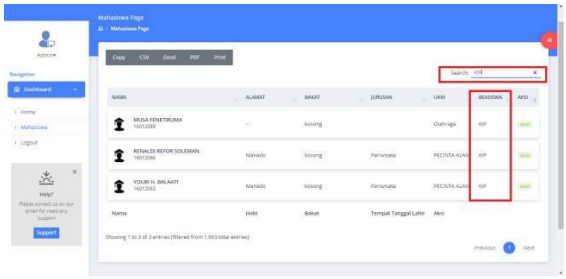

Figure 8: KIP Scholarship Data.

3.10 Searching for Student Address

We can also find the personal data of the student. For example below it is displayed the address of the student of a city.

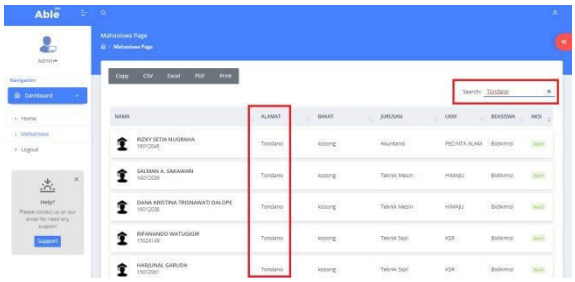

Figure 9: Data Input Student Address.

3.11 Input Data for Student Activity Unit

The student can be organized by their talent and hobby to the right student activity unit. They can choose the unit that they want to join.

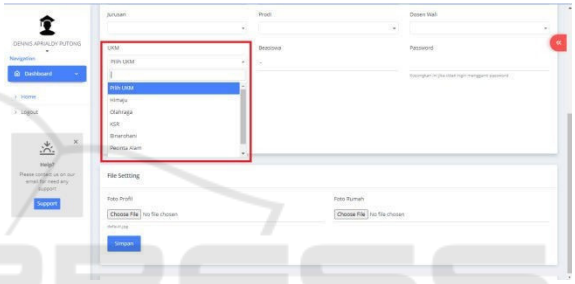

Figure 10: Data Input Student Activity Unit.

3.12 Searching Member of Each Unit

The figure below shows us that the system can find the member of each unit. All student in the same unit can be organized better than what manual system did. Every student must have at least one choice of the unit. So we can find easily the data of the certain unit. This one can help the leader to manage their own member in those unit.

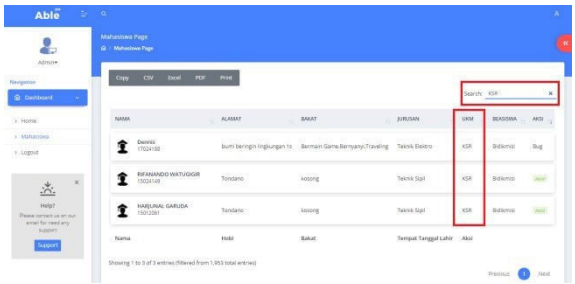

Figure 11: Data member of each unit.

4 CONCLUSIONS

This Manajemen Information System can save the student data and give the information in detail. We can get the specific data about students easily. The information about scholarship can be displayed by the kind of scholarship we need. The problem of double scholarship can be solved because we arrange the radio button that can only save one choice of the scholarship. The activity of the students in organization called UKM can monitored by this system. We can also find the address of the student and many things else by search button. The talent of the student is easy to organize by display the certain talent in search button. So overall this Management Information System can solve the problem of Student Affair Unit at Manado State Polytechnic to save student data and find the student information immediately.

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