

Promotion System Design With e-CRM at Univeristas Harapan Medan

Edy Rahman Syahputra¹, Boni Oktaviana Sembiring²

^{1,2}Department of Information System, Universitas Harapan Medan, Indonesia

ABSTRACT

The number of new students is very important in the continuity of the running of the organization, because after all a private higher education institution still relies on its income from student tuition fees. To be able to attract new student candidates, UnHar Medan has taken steps to anticipate higher education competition. In order to create, improve and maintain its competitiveness, UnHar Medan must carry out the right promotion. Promotional activities carried out by distributing brochures and visiting schools for direct promotions. This is certainly less effective in the middle of the current pandemic. To help UnHar Medan in building a system-based promotion system, the researchers designed a promotion system. The method in designing the system uses e-CRM with the process of finding problems and solutions using the PIECES method. In designing a business process system using UML. The research result is a web-based promotion application system design.

Keyword : Promotion, e-CRM, PIECES, UML



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Corresponding Author:

Edy Rahman Syahputra,
Department of Information System,
Universitas Harapan Medan,
Jalan H.M. Joni No.70C-Medan, Indonesia.
Email: ydeaja@yahoo.com

1. INTRODUCTION

Universitas Harapan Medan (UnHar Medan) is one of the private universities which comes from the change in the merged status of four high schools (Sekolah Tinggi Teknik Harapan, Sekolah Tinggi Ilmu Ekonomi Harapan, Sekolah Tinggi Bahasa Asing Harapan and D3 Manajemen Harapan). Becoming a university is a progressive transformation that is under the auspices of the Medan Harapan Education Foundation. With this change in status, it is hoped that it can increase the public's desire to study at Universitas Harapan Medan.

For UnHar Medan and also for other universities, the number of new students is very important in the continuity of the organization's wheels, because after all a private tertiary institution still relies on its income from student tuition fees. Although other sources such as grants or other income are possible, the portion is not as big as the income from student tuition fees. For this reason, UnHar Medan must build a promotion system that can increase the interest of the community to become new students.

For the promotion system, several studies have been carried out including (Chandra & Oktarina, 2019), (Emerson & Mulyono, 2019), (Riyadi et al., 2013) and (Siregar, 2018) where their research is designing a promotion system where the promotion is web-based. To build a system, of course, a method is needed, a method for designing a promotional system, including e-CRM (electronic-customer relationship management). The research that uses methods that use e-CRM, including (Purwanto et al., 2018), (Rifai et al., 2015), and (Candra et al., 2017), in their research they made a promotion system using e-CRM.

Furthermore, to find out problems in building a system using the PIECES method, the PIECES method is used to evaluate operational procedures in an organization. The use of the PIECES method is used by several researchers including (Ashari & Manikam, 2019) and (Irawan et al., 2017), they apply the PIECES method to build promotional media.

From this explanation, the researcher wants to help the Universitas Harapan Medan, by designing an e-CRM-based promotion system with problem analysis using PIECES. With the results of the design, it is hoped that it will make it easier for UnHar Medan to build an effective and efficient promotion system.

2. RESEARCH METHOD

The steps in this research are:

A. Planning

Before an information system is developed, it first starts with a policy and planning to develop the system itself. Without good planning, system development will not go as expected. The planning stage is a guideline for conducting, system development.

1. Determine the research topic
2. Plan data collection
3. Determine the required data
4. Design data collection tools

B. Data collection stage

1. Observational Study
Review and see conditions in the field directly.
2. Interview
Conducting interviews with UnHar Medan regarding the processes of promotion and new student admissions.
3. Study of literature
Collecting data by viewing and recording existing data in documents and promotional processes at UnHar Medan.

C. Analysis and design stage

Steps for system development:

1. Old system analysis
Analyze the running system to find out where the weaknesses are. Analysis of the old system that is currently running, from promotion to the entry of new student candidates into students.
2. New system analysis
The new system analysis design here will illustrate that prospective students do not need to come to the campus to register for registration wherever prospective students are, the service can be accessed 24 hours.
3. Needs analysis
Analyzing the system requirements of the company that can help institutions overcome current problems.

D. Design

At this stage, the system architecture design will be carried out. Then proceed again to create a data dictionary. At this design stage using the UML (Unified Modeling Language) visualization tool, which is a language based on graphics / images to visualize, specify, build, and document. UML offers a standard for designing a system model.

E. Conclusion and documentation stage

Make documentation of research results in the form of a final research report in accordance with the applicable drafting format.

3. RESULTS AND DISCUSSION

A. Results of Problem Analysis Using PIECES

1. Performance Analysis

Table 1. Performance

Previous System

The promotion process at the UnHar Medan still uses conventional methods, namely waiting for prospective students to come by themselves, only utilizing place facilities and information obtained by word of mouth

Slow response time to information given to prospective students who are quite far away

The existing resources have knowledge of the operating system and website, but are not supported by an effective promotion system.

2. Information Analysis

Table 2. Information

Previous System

Information about campus and study programs is quite slow due to limited information sources received by working hours

Information about UnHar Medan is quite relevant to have benefits for prospective new students

3. Economic Analysis

Table 3. Economy

Previous System

The cost required to make a catalog and promotion costs is quite large

Limited hours of information service prevent the resulting benefits from increasing or slowing down

4. Control Analysis

Table 4. Control

Previous System

Leadership control over subordinates is not optimal, because the system is only used by employees

5. Efficiency analysis

Table 5. Efficiency

Previous System

A lot of workload, such as ineffective student data collection

6. Service Analysis

Table 6. Service

Previous System

Services received are limited to campus operating hours

B. Needs Analysis

Analysis of system requirements is divided into two, namely Non-Functional needs and Functional needs.

1. Non-Functional Requirements

Table 7. Description of Non-Functional Requirements

Parameter	Needs
<i>Availability</i>	This application must be able to operate continuously for 7 days per week, 24 hours per day without stopping, because this application will be web-based and will be accessed by users who need it from various places at different times.
<i>Reliability</i>	This application must be built with the highest possible reliability, although it does not need to be as high as the reliability of a critical application. The failures that can be tolerated are approximately 10%. With high reliability, it is expected that this application can be used properly when needed. The reliability of this application will also depend heavily on several external things, such as the reliability of the telecommunications network used for internet access, the reliability of the electrical power system used, etc.

<i>Ergonomy</i>	This application must have a high ergonomic value / wear comfort for the user. Applications will be built with a user interface that is easy to understand, beautiful to look at, consistent, easy to operate and not confusing.
<i>Memory</i>	This application should be light and do not require high memory. So that this application can be run on computers with low specifications. This is very important because this application will be accessed via the internet and may be accessed through internet cafes with low hardware specifications
<i>Response time</i>	This application should be fast. Because it will run over the internet. In areas with slow internet connections, this application must also be able to be accessed quickly
<i>Communication language</i>	The language used on the web must be communicative and interesting so that it attracts many visitors.

2. Functional Requirements

Table 8. Description of Functional Requirements

Functional Requirements
The user is divided into 2 groups, namely: Admin and User
There is a login facility for admins to be able to access the system database
Admin facilities to add, modify and delete campus 3D virtual object data
The existence of user facilities to add, modify and delete news data
Admin facilities to add, change and delete download data
There are admin facilities for website configuration
There is a logout facility for admins
The existence of user facilities to view news information
The availability of information facilities for the use and installation of a 3D Viewer image plug-in on the browser for the user
There is a user facility to view 3D virtual objects on the website

C. System Business Process Design

In designing this system, researchers use the Unified Modeling Language (UML). The UML method used in designing this website application includes use case diagrams, sequence diagrams, activity diagrams and class diagrams.

1. Use Case Diagram

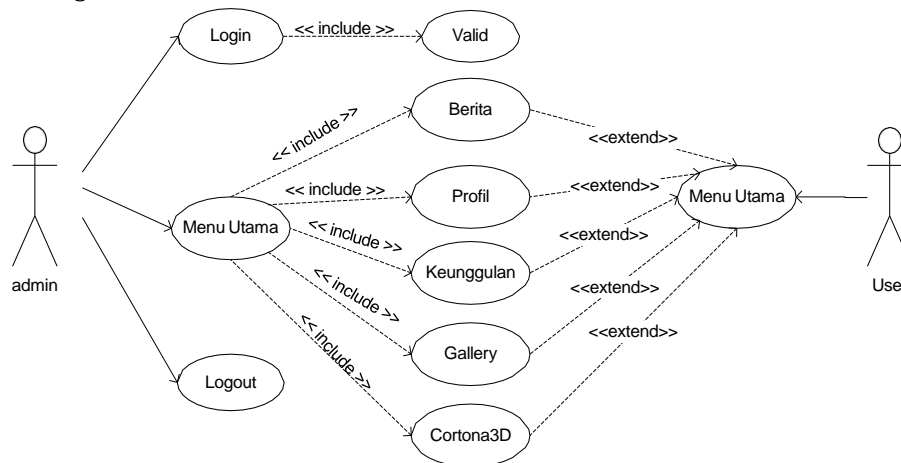


Fig 1. Use Case System Diagram

Figure 1 explains the use case system design, there are two users, namely Admin and user. The admin's job is to login, main menu, logout. The task of the user is to see the features provided.

2. Sequence Diagram

- Sequence Diagram News

Sequence The Manage News diagram explains the system flow that can manage news data which can be accessed by the admin. The following is a sequence diagram design for managing news data.

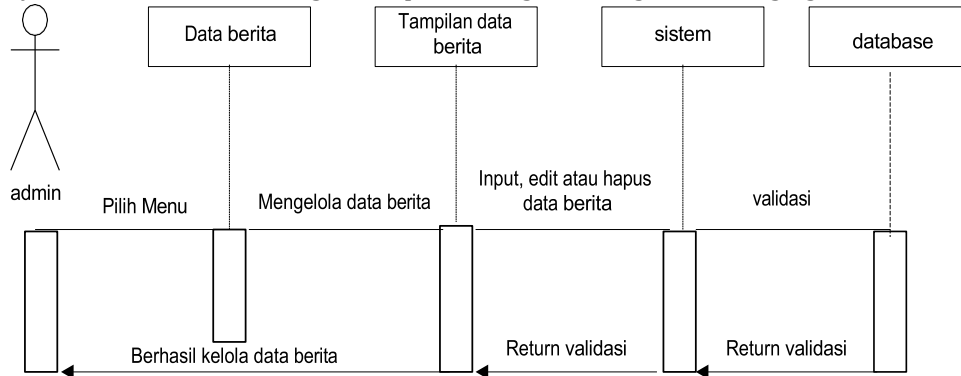


Figure 2. Sequence Diagrams Manage News data

Figure 2 describes the design of the sequence diagram system for managing news data which can be accessed by the admin. Admin can input updates or delete news data stored in the database.

- Sequence Diagram 3d file

Sequence The 3d file management diagram explains the system flow that can manage 3d file data which admin can access. The following is a sequence diagram design for the 3d Datafile management.

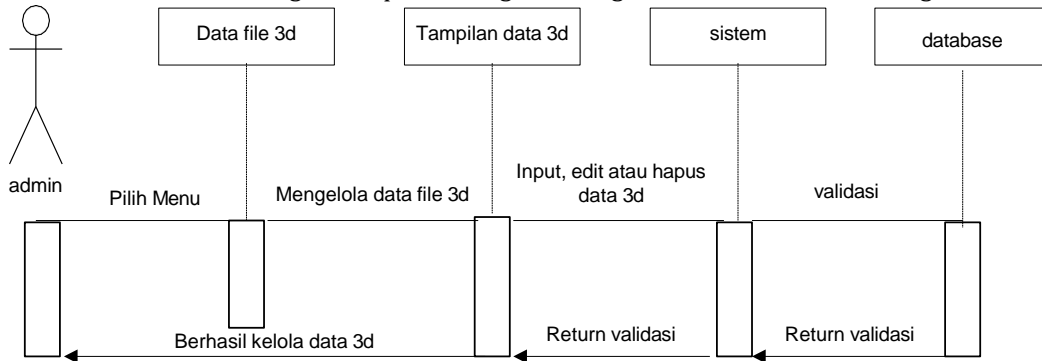


Fig 3. Sequence Diagram of Manage 3d File

Figure 3 describes the design of a 3d data management sequence diagram system which can be accessed by the admin. Admin can input, update or delete 3d data stored in the database.

3. Activity Diagram

User Activity Diagrams to explain the system flow design to the user. Below is the user activity diagram.

- Activity News diagram

Activity News diagram in Figure 4 below describes the user who can see news on the system.

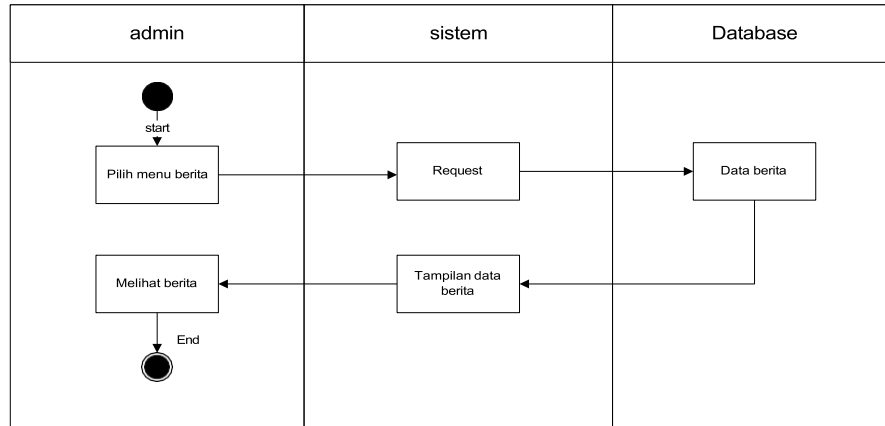


Fig 4. Activity Diagram Viewing News Data

In the picture it can be explained that prospective students (users), people open the main page of the website and choose the news menu. The system will connect to the database and display all news data. Prospective students (users), the public can see the news and choose the news to see the detailed information. The system will retrieve data according to the news chosen by prospective students (users), the community. If the data selected is correct and available in the database, the system will display a news detail page. If the selected data is not available in the database, the system will display an error message.

- Activity 3d file diagram

Activity The 3d file diagram in Figure 5 below explains the user who can see the 3D data on the system.

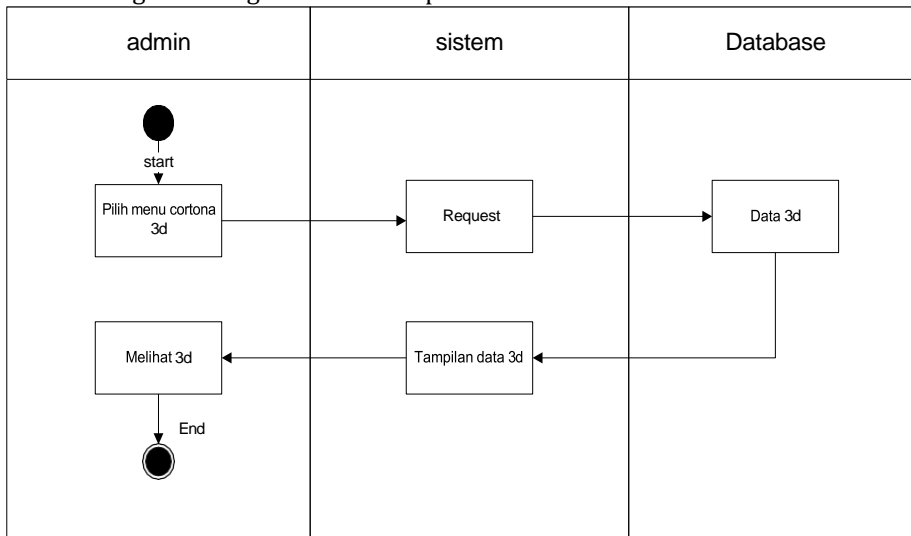


Fig 5. Activity Diagram Viewing 3d Data

In the picture it can be explained that prospective students (users), people open the main page of the website and choose the 3d menu. The system will connect to the database and display all 3d object data. Prospective students (users), the public can see 3d objects and select 3d objects that will see detailed information. The system will retrieve the data accordingly.

4. Class Diagram

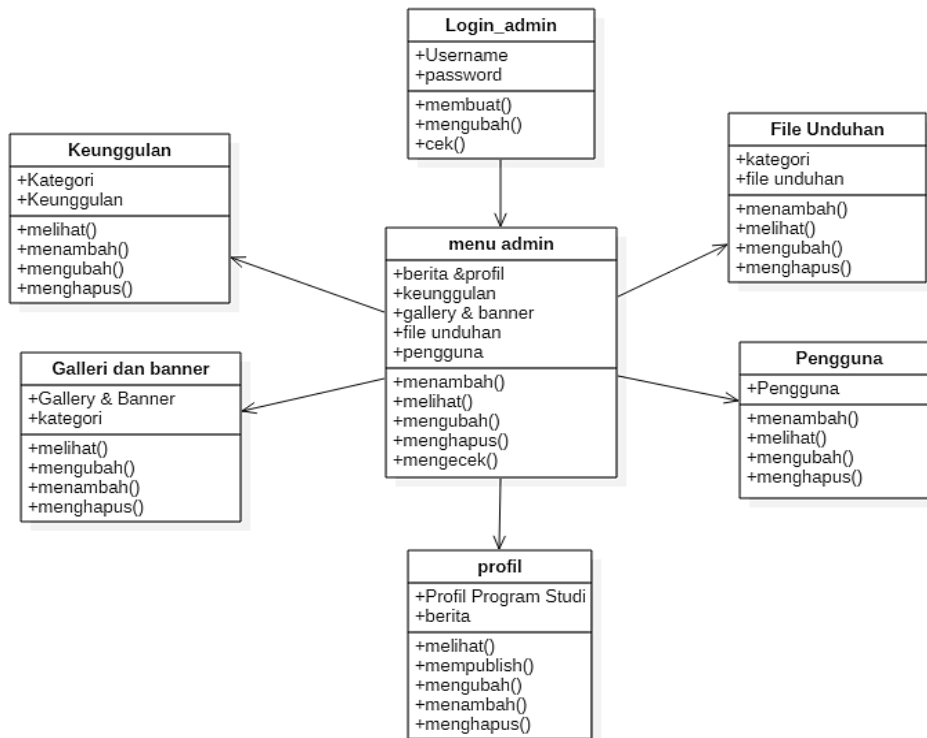
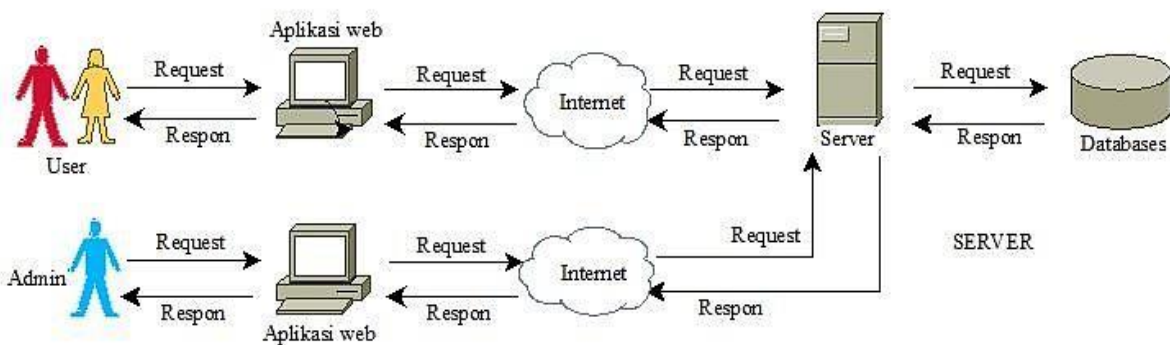


Fig 6. Class Diagram

The picture above is a class diagram image of a promotional media at the UnHar Medan. The public / prospective students can find out various information from the information system on the promotional media at UnHar Medan.

D. System Architecture Design

FLOW AND



BACK AND

Fig 7. System Architecture

Figure 7 describes a system where users can only open and view website applications and can be opened from the internet network and then get requests and responses from servers and databases. Admin uses a website application where admin can edit, view and enter news via the internet and stored on the server.

E. Interface Design

The interface design is a menu structure display that is designed to provide an overview of each function in the website to the user. The following is a display of the interface menu design structure on promotional media using virtual reality modeling that can be used by the Admin, namely.

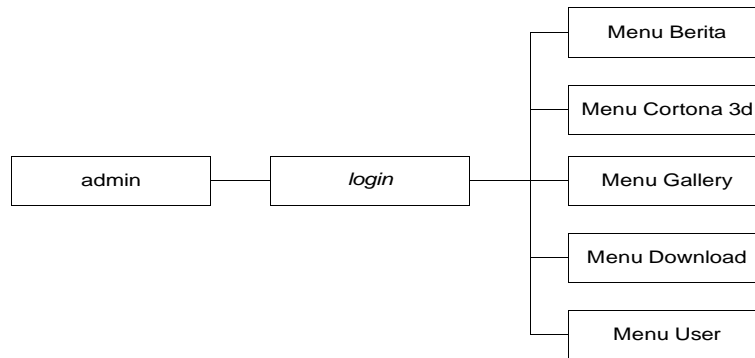


Fig 8. Admin Interface Design

Figure 8 explains the structure of the Admin menu interface design, after the Admin has successfully logged in there are four menus that can be managed by the Admin, namely: news data, building menu, gallery, Admin data.

This page is a display of the menu design structure that can be used by the user. The following is a display of the interface menu design structure that can be used by the user.

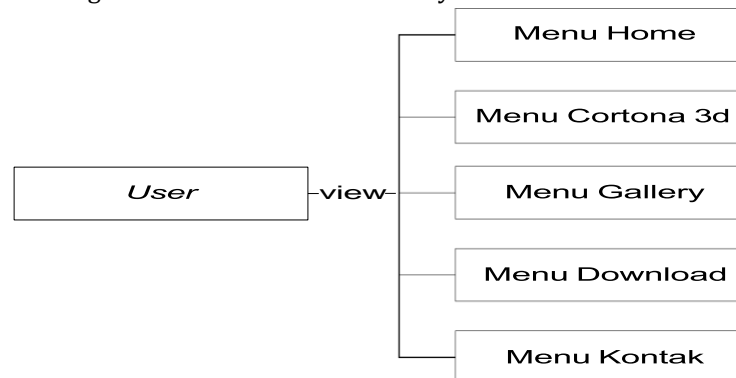


Fig 9. User Interface Design

Figure 9 describes the user interface design structure of the home menu, gallery, building and facilities menu, gallery, download and contact. In the home menu there are submenus, namely; menu profile, vision and mission.

4. CONCLUSION

From the results of the design that has been done, the conclusions in this study are as follows:

1. By using the E-CRM method, it can improve the management of relationships between Harapan University Medan and prospective new students.
2. The design is carried out to facilitate the University of Harapan Medan in developing an effective and efficient promotion system.
3. By using the PIECES method in observing existing problems, the design has completed the stages that must be met in the promotional application later

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