SERVICES IMPLEMENTATION IN BINUSMAYA VERSION 3 USING ASP.NET AND C# (2011)

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Abstract - **The main purpose of this project is to move the Services region in Binusmaya Version 2, which is almost six years since its first implementation, to the new Binusmaya which is Binusmaya Version 3. The other purpose is to fix the structure and organization of the menus in Services, make better categorization for the Services, and to make a new shortcut that will lessen the user's click numbers. In addition, for some Services menus using Lotus Notes to get data, will be changed to new database, which is SQL Server 2005.**

The main reason why this project is needed to be done is due to Binusmaya Version 2 transformation into Binusmaya Version 3, which caused by several reasons. For example, plan to close Lotus Notes, caused by unavailable Lotus Notes programmer, old fashioned design applied in Binusmaya Service 2 that never changed since its first implementation, new LMS content, new needs, include external application added and single logon concept, and many more reasons. Due to Binusmaya transformation, Services, one of main needed user facility in Binusmaya version 2, should be transformed and moved too into Binusmaya version 3, with new concept, new design, new structure and organization, and new technology fitting by new framework concept, indeed, not only just moving or convert it without any changes and improvisation.

The used methods in this project started from System/Information Engineering and Modeling, Software Requirement Analysis, Design, Coding, Testing, Maintenance. The major result of this project is New Services with new concept, new design, new structure and organization, and new technology in Binusmaya Version 3.

In conclusion, Binusmaya version 3 uses and support single logon concept and as a framework for many inside applications, including Services, clearer new structure and organization according to the user roles and function, new implemented shortcut, performed in English version, time based category of new implemented Announcement, new Module Management that support and ease testing of the new menus, there is no Services accessing the data by Lotus Notes, replaced by SQL Server 2005.

I. INTRODUCTION

Technology is something that surely can change and affect human's life. In this era, technology is undoubtly as one of main human needs and it can give a lot of information that fast to get, easy to get, accurate, and up to date. Internet and web is one of the technology that ease people in accessing information they need. There's a lot of web based application, which is e-application, that being used a lot, like in education, bussiness and industry, and entertainment.

Bina Nusantara, as a technology oriented University, has developed a web based learning system or e-learning for its student and lecturer to get information easier, such as information about lecture, course material, and so on. This system is called Binusmaya. The menu that provide information like lecture information, finance information, announcement, etc is called Binusmaya Services.

The current Binusmaya is Binusmaya Version 2 that has been used since 2005, the current condition shows Binusmaya Version 2 is very seldom to be accessed. For this reason, the Binusmaya system should be changed to increase the hit rate. Beside that, the user must login to every Binus University websites. For example, when user has logged in at Binusmaya and they want to visit the library website, they must login once again at the library.binus.ac.id.

Because of that, IT Directorate, as the developer that responsible in all the technology matter at Bina Nusantara University, including Binusmaya, is told to develop a new version of Binusmaya, which called Binusmaya Version 3 that can fix the weaknesses of Binusmaya Version 2. The Binusmaya Version 3 is using a single logon concept, so when user want to move from Binusmaya to library, they don't need not to login anymore. And a user that have more than one role, for example, student and lecturer in the same time does not need to login twice anymore because the Services is being combined into one system.

For the Services section especially, Binusmaya Version 3 improves the categorization in Services, which is being mixed with other menu at Binusmaya Version 2. And with the new Learning Management System at Binusmaya Version 3, the Services section should be moved too to Binusmaya Version 3 to make user do not move back and forth from Binusmaya Version 2 to access Services to Binusmaya Version 3 to access Learning Management System.

II. METHODS

The used methods in this project are stated below :
1. **System/Information Engineering and Modeling**
   In this step, the team members gathered and discussed about what should be done and what should be made and implemented in the Binusmaya Version 3. The Project Manager

explained what should have be done according to the user. This step also result in time line planning and scheduling of the project.

2. **Software Requirement Analysis**

In this step, Project Manager explain to the team about specific feature that the system must have according to user requirement, the services must be divided into three section by accessed user roles : student, lecturer, common.

3. **Design**

Design in this step consists of system design, User Interface (UI) design, and database design. System design includes the system workflow as a whole of system and UML. UI design is focused in making the UI requested by the Project Manager according to user requirement. Database design begin with designing the database structure in ERD for the Services that need new database. After created, the ERD is discussed with the Project Manager, fixing some if necessary, then create the real table in the database server with the fields according to the ERD. After that, stored procedure is being made.

a. **System Design**

System Design uses UML concept and includes four diagram of UML Diagrams, such as Use Case Diagram, Activity Diagram, Sequence Diagram, and Class Diagram (1).

Use Case Diagram

Figure 2.1 Use Case Diagram– Module Management System

Figure 2.2 Use Case Diagram – Home System

Figure 2.3 Use Case Diagram Common System

Figure 2.4 Use Case Diagram – Student System

Figure 2.5 Use Case Diagram – Lecturer System

Activity Diagram

Example of used Activity Diagram :
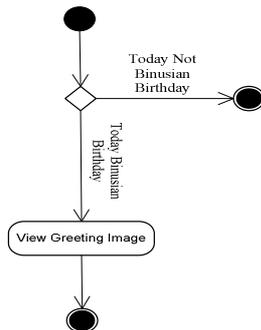
Figure 2.6 Example of Activity Diagram

Sequence Diagram

Example of used Sequence Diagram :

Class Diagram

Figure 2.7 Class Diagram
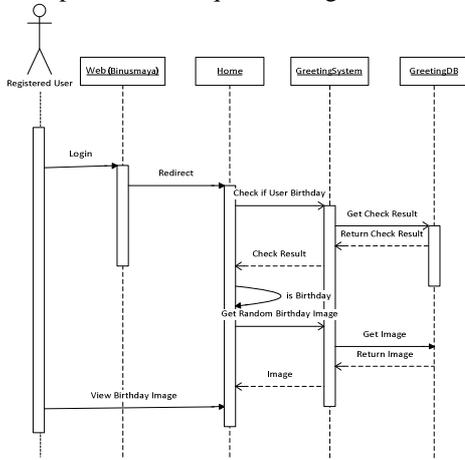
b. User Interface Design

UI Design based on user requirement and the correlation of the style of the framework with the main concern refers to Eight Golden Rules (2).
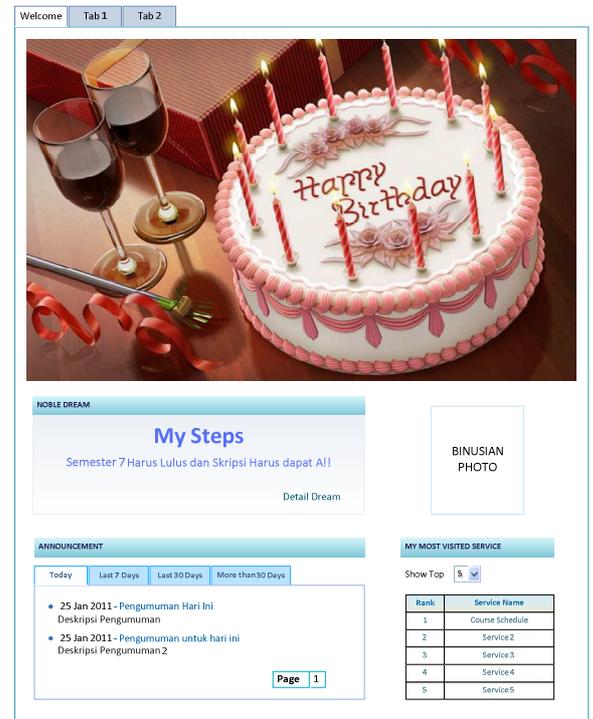
Figure 2.8 UI Design of Home Front End
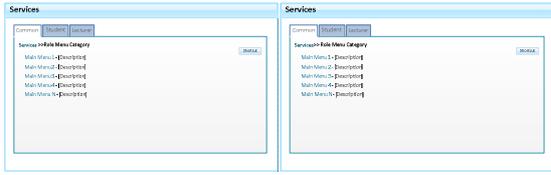
Figure 2.9 UI Design of Binusmaya Services
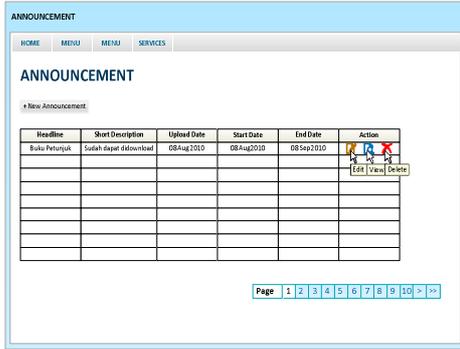
Figure 2.10 UI Design of Back End
(in this case, list Announcement)
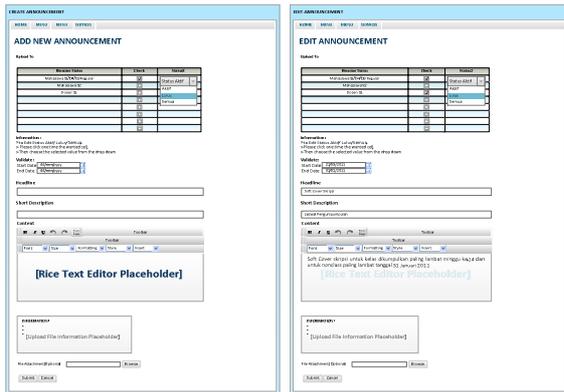
Figure 2.11 UI Design of Back End
**(in this case, Add and Edit Announcement)**
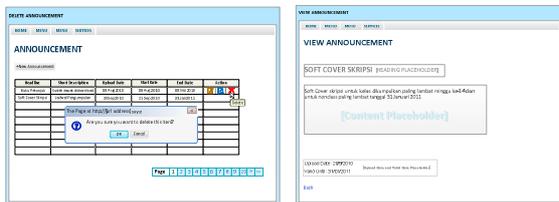
Figure 2.12 UI Design of Back End
(in this case, Delete and View Announcement)

c. Database Design

Database design refers to database concept (3).
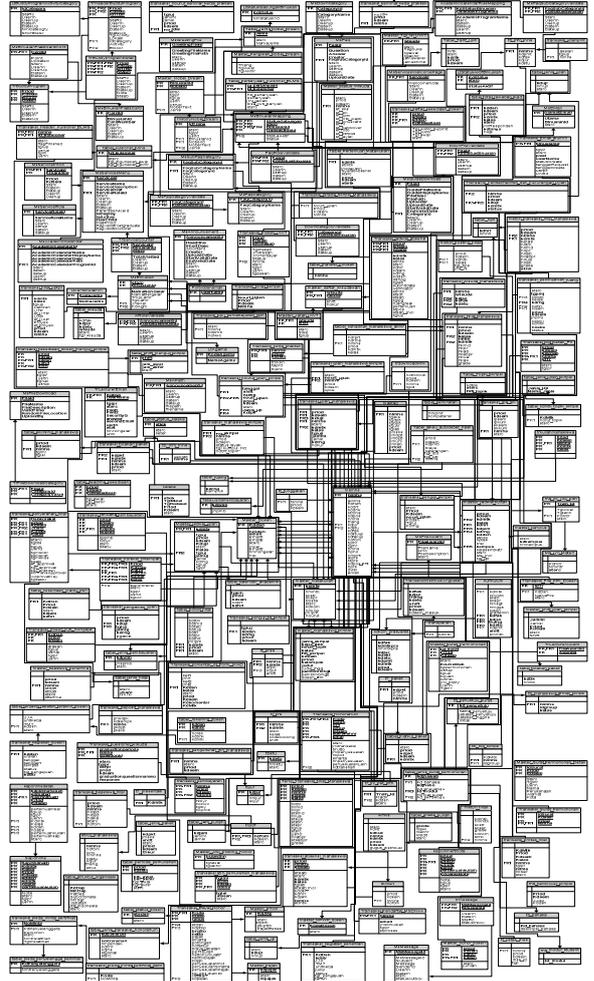
Figure 2.13 Database Design

4. Coding
   In this step, the team started to translate the design into programming language code which is C# as well as start to create the web pages in aspx format with master pages, then the database connection with MVC architecture applied in IT Directorate.

5. Testing
   The testing consists of three types testing. They are testing on each developer PC, testing on the local server before real deployment, and testing on the real server with real data.

6. Implementation to real and maintenance
   After testing and bug handling, the Services is being implemented at the real Binusmaya to be used by the student, lecturer, and staff. During implementation, testing and maintenance still being done to ensure no error occurred.
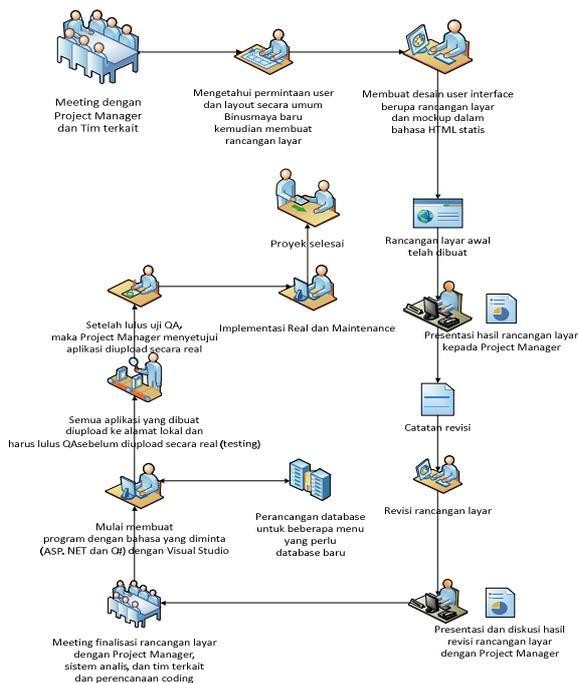
Figure 2.14 Workflow of the Used Methods Project

III. RESULT

The result of this project is New Services with new concept, new design, new structure and organization, and new technology in Binusmaya Version 3. Shown by improved shortcut, improved categorization, and the Lotus Notes access is being closed. Services region has not mixed again with other feature, it has been independent application, listed in Application List, that have one solution separated with other application solution. Besides that, the user does not need to go back and forth anymore from Binusmaya Version 2 to Binusmaya Version 3 to access Learning Management System and Services because all is being implemented at Binusmaya Version 3.Services in Binusmaya version 3 also has closed Lotus Notes using in Back End that The Writer have done.

Currently, at time this journal was published, Services in Binusmaya version 3 has been implemented and published in real server that can be used by all of Binusian and related staff, both of Front End and Back End apps, and both of Home and Services sections. The result can be accessed by all of Binusian by type the URL : http://binusmaya.binus.ac.id .

IV. CONCLUSIONS AND RECOMMENDATIONS

The conclusions that can be get from this project is :
1. In conclusion, Binusmaya version 3 uses and support single logon concept and as a framework for many inside applications, including Services,

2. Clearer new structure and organization according to the user roles and function,
3. New implemented shortcut that eases the user at the navigation in reducing the number of clicks.,
4. Performed in English version,
5. Time based category of new implemented Announcement,
6. New Module Management that can support and ease testing and maintenance for the new created menus,
7. There is no Services accessing the data by Lotus Notes, replaced by SQL Server 2005.

There is some recommendations to the next developer which is :
1. To give a wider space in showing the content of the menu.
2. To make a new tab or new window appearance still have the same frame.
3. To give more freedom rooms or space (for example, in right section in Home) for user to customize their personal homepage, for example, user can arrange what menu or information that user frequently accessed in their home freely by their own needs and preferences, like lecture schedule for Student or teaching schedule for Lecturer (one of most visited menus) can be placed in their home page.
4. Give chance to alumni to access MSDNA feature unlimited and freely.

V. ACKNOWLEDGMENT

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3. Hendi Suhardja and Irfan to guide and help the writer in the coding.

VI. REFERENCES

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