



Design Of A Web-Based Membership Data Processing System At Vizta Gym Using A Prototype Method

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ABSTRACT

Vizta Gym is a fitness center with a modern, clean, comfortable concept and complete facilities. Vizta Gym, which is present in several places in busy centers or malls in Medan City, also makes it easier for its members to carry out physical fitness sports activities wherever the Vizta Gym branch is located. However, the member verification process is still an obstacle. Someone who activates a member at one Vizta Gym branch and wants to do sports activities at another Vizta Gym branch must be verified manually. Apart from that, members often forget the sports schedule that has been prepared or planned in advance and the member's active deadline. The aim of this research is to build a Vizta Gym membership data processing system using the prototype method and unified modeling language. The system that has been designed and built has succeeded in running well, making it easy for system administrators to process fitness training data and making it easy for members to find out information on training schedules and transactions.

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1. INTRODUCTION

The existence of fitness centers through programs in people's lifestyles creates new phenomena, especially regarding the diversity of people's needs. Moreover, in urban areas, most workers are busy, so urban people prefer to exercise in fitness centers[1].

Vizta Gym is a fitness center with a modern, clean, comfortable concept and complete facilities. Apart from that, Vizta Gym also distributes fitness equipment (distributors) in Medan City. Vizta Gym, which is present in several places in busy centers or malls in Medan City[2][3], also makes it easier for its members to carry out body fitness sports activities wherever the Vizta Gym branch is located. However, the member verification process is still an obstacle. Someone who activates a member at one Vizta Gym branch and wants to do sports activities at another Vizta Gym branch must be verified manually. Apart from that, members often forget the sports schedule that has been prepared or planned in advance and the member's active deadline.

Currently, everything related to information cannot be separated from technology. Information and communication technology is currently developing increasingly rapidly so that we are required to have certain skills to be able to adapt to existing technological advances[4]. This technology can be seen from the very rapid development of computers, because currently computers are the most dominant Information Technology (IT) medium. These things make and force every human being in this era of computerization to always be ready and in prime condition considering the many problems that exist which not only require psychological but also physical demands, this also has an impact on human health factors.

With the obstacles faced, an information technology approach is needed by designing and creating a membership data processing application system at Vizta Gym. This application is expected to provide good and excellent service so that it can increase the reputation of Vizta Gym. This application design uses a prototype method approach.

2. RESEARCH METHOD

The research method used in this research is a descriptive method. The descriptive method is a technique that examines the status of a group of people, an object, a set of conditions, a system of thought, or a class of events in the present. The aim of this descriptive research is to create a systematic, factual and accurate description, picture or painting of the facts, the nature of the relationship between the phenomena being studied[5].

Data collection aims to obtain the data and information needed regarding application system design[6]. The data collection methods used include: Observation, namely observing work procedures that are running directly at the research location. Literature study is looking for references from scientific sources that support related research. Interviews are collecting information by means of questions and answers with several parties involved in competent handling either directly or using online forms.

The system development method used in this research is the prototype method (fig 1) with the work stages used in this research being as follows[7].

1. Needs Analysis

This stage is the stage of collecting data on system requirements defined in detail. In the process, the system development team will meet with the client to discuss the details of what kind of system they want.

2. Design and Build Prototype

This stage, the system development team creates a design and builds a prototype or mock-up of the system. This stage is also the stage for improving the existing system prototype.

3. Prototype Testing

This stage is the trial stage of the system prototype that has been built with system user clients. This stage can also be a needs analysis stage because the client will immediately provide feedback on the prototype being tested.

A prototype is an initial version of a stage of a software system that is used to present an overview of an idea, experiment with a design, look for as many existing problems as possible and find solutions to resolve these problems[8]. According to Malatista et al, the basis for this idea is to create a prototype as quickly as possible, then obtain feedback from users so that the prototype can be immediately improved after receiving feedback. All diagram designs or models created are not required to be perfect and final. The main purpose of preparing the design is as a tool to provide an overview of the system such as materials and menus that need to be included in the prototype to be developed[9].

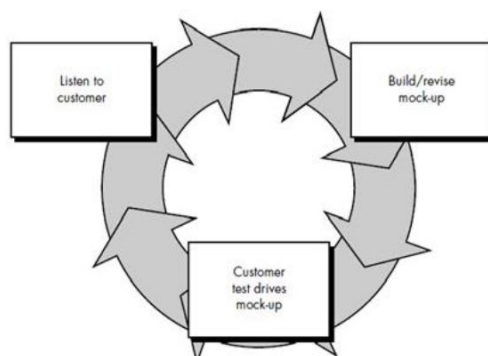


Figure 1. Prototype Method Diagram[10]

Another system design method used is Unified Modeling Language (UML). UML is a standard specification language used to document, specify and build software. UML is a methodology for developing object-oriented systems and is also a tool to support system development. Use case diagrams are modeling for the behavior of the application to be created. Use case diagrams are used to find out what functions exist in an information system and who has the right to use these functions. Activity Diagrams describe various activity flows in the system being designed, how each flow begins, the decisions that may occur, and how they end[11]. Class Diagrams or class diagrams are used to create systems by describing the system structure in terms of defining the classes being created. Classes have variables owned by the class (attributes) and functions owned by the class (methods or operations)[12].

3. RESULTS AND DISCUSSIONS

3.1. UML Design

The UML design in this research uses use case diagrams, activity diagrams, and class diagrams. The use case diagram design shows that there are 2 system users interacting with each other as shown in Figure 2.

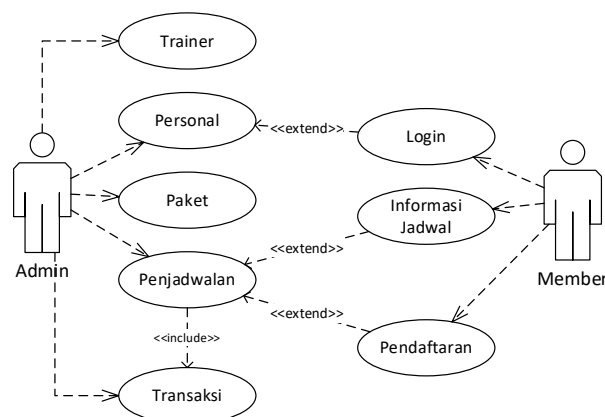


Figure 2. Use Case Diagram Design

The design of the activity diagram consists of two parts that describe user activities, namely admin and members, towards the system being built as in Figure 3 and Figure 4 and the design of the class diagram can be seen in Figure 5.

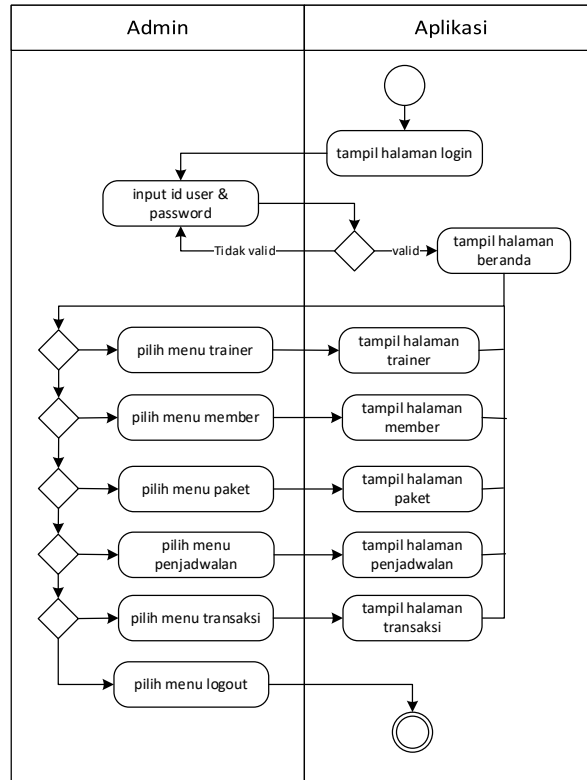


Figure 3. Admin Activity Diagram Design

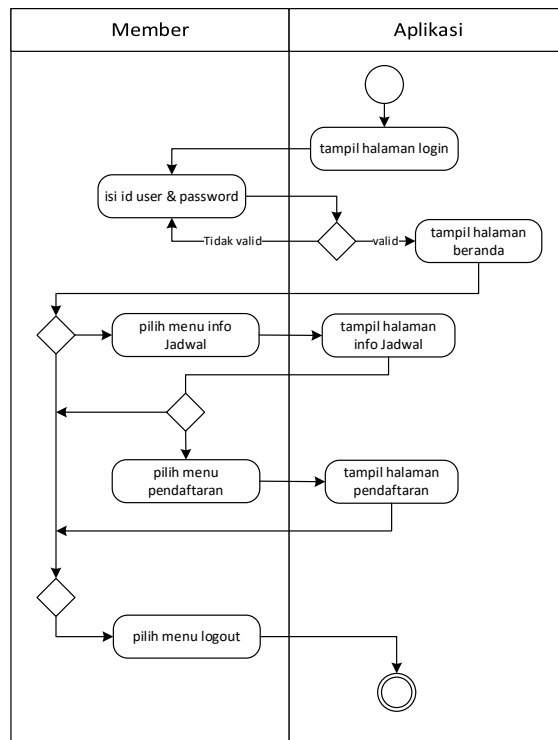


Figure 4. Member Activity Diagram Design

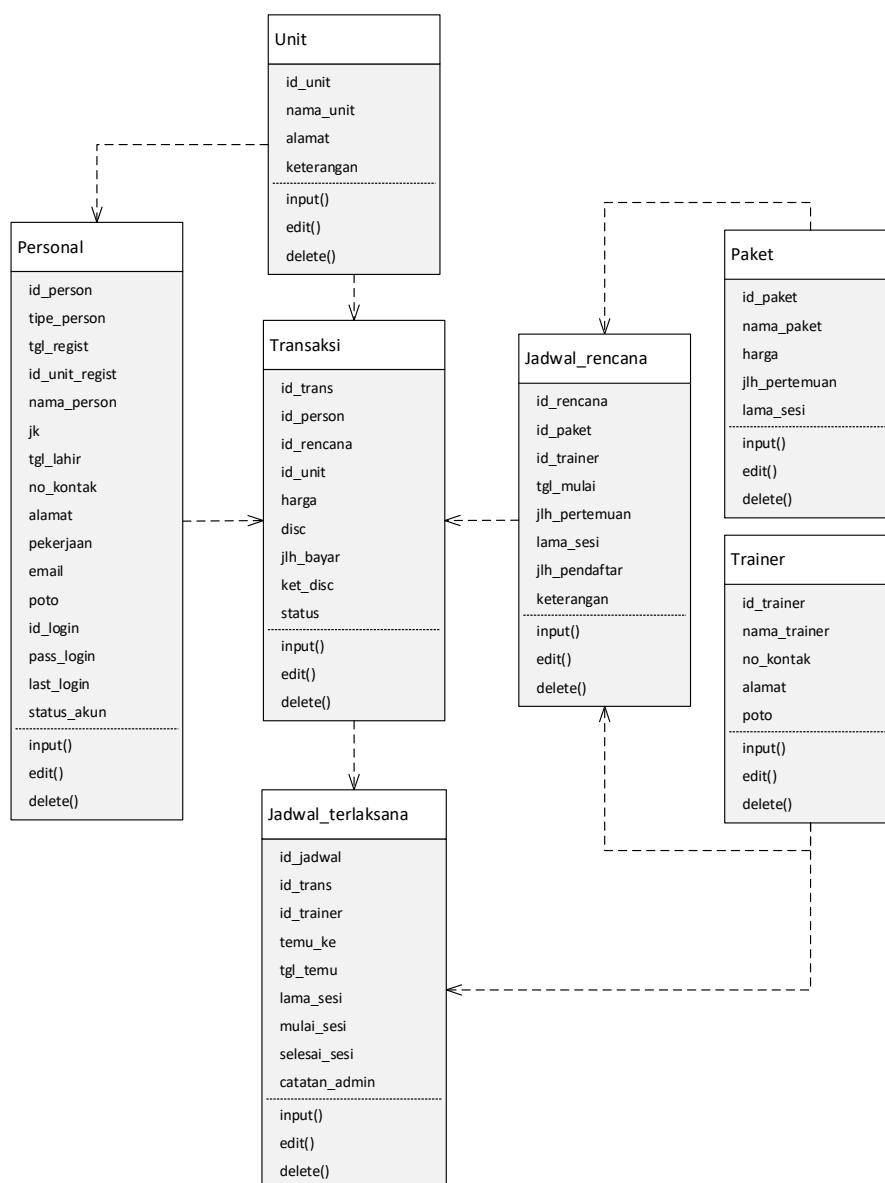
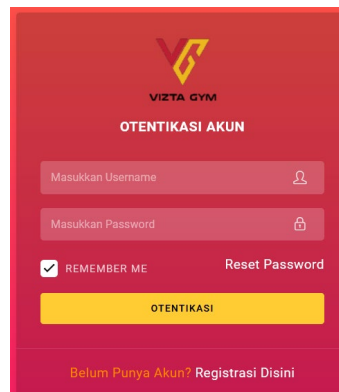


Figure 5. Class Diagram Design

3.2. Interface Design

The interface design was carried out based on the previous UML design. There are several interface page design results which will be explained as follows. The login page (figure 6) is designed to authenticate users where there are 2 types of users of this system, namely admin and member. This page is running well. The home page (figure 7) is designed as the first page that appears after the login process and this page has worked well. The user profile page (figure 8) is designed to fill in and change profile data and passwords to log in to the system for both admins and members. This page is running well. The transaction page (figure 9) is designed to process member transaction data, namely adding, changing, deleting data. Transaction data is integrated with training schedule data and member data. This page has been running well. The scheduling page (figure 10) is designed to process training schedule data that will be held by Vizta Gym. This page is integrated with training package data and trainer data. This page has been running well. The personal page (figure 11) is designed to process system user data, both admins and members. This page has been running well.

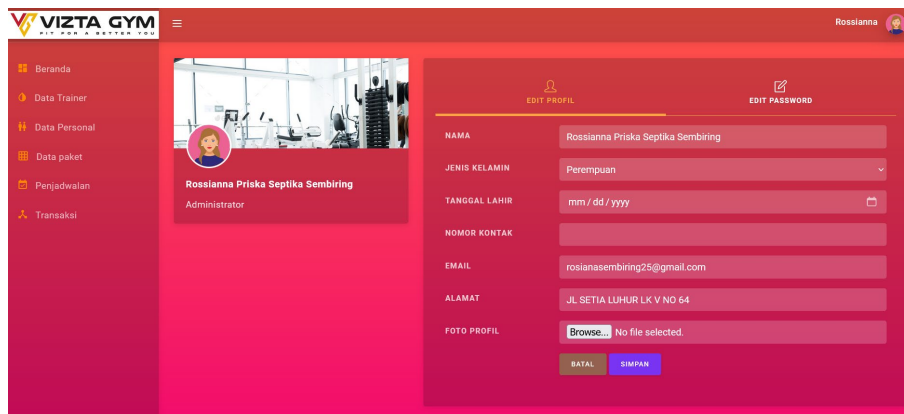


The login page features a red background with the VIZTA GYM logo at the top. Below the logo, the text "OTENTIKASI AKUN" is centered. There are two input fields: "Masukkan Username" and "Masukkan Password", each with a corresponding icon (user and lock). Below these fields are a "REMEMBER ME" checkbox and a "Reset Password" link. A prominent yellow "OTENTIKASI" button is centered below the form. At the bottom, a link "Belum Punya Akun? Registrasi Disini" is displayed.

Figure 6. Login Page Design

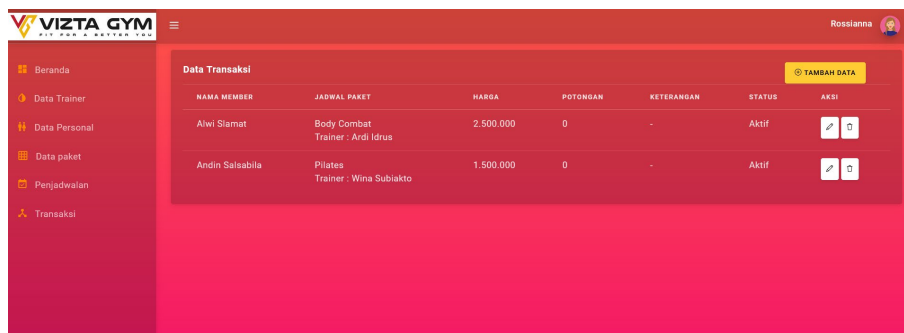


Figure 7. Home Page Design



The user profile page includes a sidebar with the same menu as the home page. The main content area is divided into two sections: "EDIT PROFIL" and "EDIT PASSWORD". The "EDIT PROFIL" section shows a profile card for "Roslianna Priska Septika Sembiring" with the role "Administrator". The "EDIT PASSWORD" section contains form fields for: NAMA (Roslianna Priska Septika Sembiring), JENIS KELAMIN (Perempuan), TANGGAL LAHIR (mm / dd / yyyy), NOMOR KONTAK, EMAIL (rosiansembiring25@gmail.com), ALAMAT (JL SETIA LUHUR LK V NO 64), and FOTO PROFIL (Browse). There are "BATAL" and "SIMPAN" buttons at the bottom.

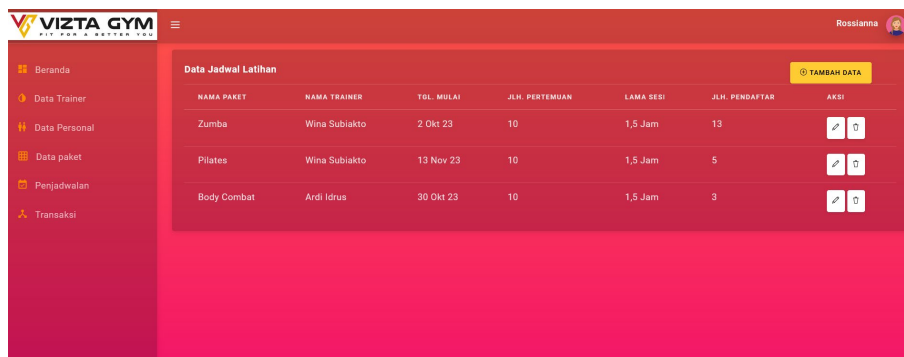
Figure 8. User Profile Page Design



The transaction page features a sidebar with the same menu. The main content area displays a table titled "Data Transaksi" with a "TAMBAH DATA" button. The table lists member information, including name, package schedule, price, discount, status, and actions.

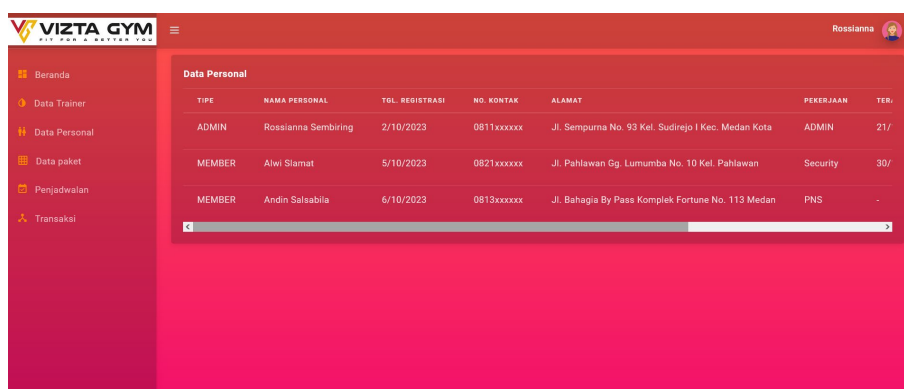
NAMA MEMBER	JADWAL PAKET	HARGA	POTONGAN	KETERANGAN	STATUS	AKSI
Alwi Siamat	Body Combat Trainer : Ardi Idrus	2.500.000	0	-	Aktif	<input type="checkbox"/> <input type="checkbox"/>
Andin Salsabila	Pilates Trainer : Wina Subiako	1.500.000	0	-	Aktif	<input type="checkbox"/> <input type="checkbox"/>

Figure 9. Transaction page design



NAMA PAKET	NAMA TRAINER	TGL. MULAI	Jlh. PERTEMUAN	LAMA SESI	Jlh. PENDAFTAR	AKSI
Zumba	Wina Subiako	2 Okt 23	10	1,5 Jam	13	[Edit] [Hapus]
Pilates	Wina Subiako	13 Nov 23	10	1,5 Jam	5	[Edit] [Hapus]
Body Combat	Ardi Idrus	30 Okt 23	10	1,5 Jam	3	[Edit] [Hapus]

Figure 10. Scheduling page design



TIPE	NAMA PERSONAL	TGL. REGISTRASI	NO. KONTAK	ALAMAT	PEKERJAAN	TER.
ADMIN	Rossianna Sembiring	2/10/2023	0811xxxxxx	Jl. Sempurna No. 93 Kel. Sudirejo I Kec. Medan Kota	ADMIN	21/
MEMBER	Alwi Slamet	5/10/2023	0821xxxxxx	Jl. Pahlawan Gg. Lumumba No. 10 Kel. Pahlawan	Security	30/
MEMBER	Andin Salsablia	6/10/2023	0813xxxxxx	Jl. Bahagia By Pass Komplek Fortune No. 113 Medan	PNS	-

Figure 11. Personal page design

4. CONCLUSION

The system that was built has succeeded in running well and makes it easy for users, namely administrators, to process trainer data, personal data, training package data, training schedule data and transaction data. Likewise, members can easily find out information about the training schedule held by Vizta Gym and find out information about transactions that have been made.

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