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Designing a Vanilla Sales Application System using Fremwork Service Oriented Architecture (SOA)

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ABSTRACT

CV. Vanilla Gemstone is one of the leading vanilla ditributor conpanies in Sukabumi. The preparation of a comprehensive business plan is based on a sales strategy. While at this time the management of sales at CV. Vanilla Gemstone is still less effective because CV. Vanilla Gemstone during the sale, the owner places order or sales via telephone or short massage so that an efficient way for the sales segment has not been found. Then the so called old fashioned way in the sales system itself, resulting in sales figures that are not increasing day by day. It can make the company will experience defeat in business comprtition by other trading rivals. Based on these problems, we need an application that can manage vanilla sales more effeciently.

1. Introduction

Information technology has a huge impact on today's world. With only one finger and a gadget that can be connected to the internet, we can see and know various world information quickly. Due totoday's human health and for time efficiency, almost everyone in different parts of the world uses the internet onadaily basis [1]. Because the internet is a very effective and efficient facility for humans to facilitate in work, business promotion, organization and others. Viewed from the positive side of the internet, many international and national entrepreneurs began to expand their sales through the internet network with the aim of growing their business. [2]

Along with the development of information technology, we can feel the business competition is increasingly complex, where all information must be conveyed attractively and quickly and can have a positive influence on prospective consumers, therefore a sales information system is needed by CV companies. VANILLA GEMSTONE to increase sales to the wider community and facilitate users. CV. VANILLA GEMSTONE, located on Jalan Sudajaya, Kp. Salatamiang, RT. 28/06, Sukajaya Village, Kec. Sukabumi, Kab. Sukabumi.CV. VANILLA GEMSTONE takes part in the provision of vanilla foodstuffs in Sukabumi City. Sales targets are aimed at specific consumers by providing various types of goods according to the area of providing groceries to attract consumers.

The results of the previous study contained an analysis of sales transaction data for one year from August 2019 to July 2020, with a total of 578 transactions successfully making communication patterns in clothingsales. [3]

To achieve the company's planned goals, of course, the company must be able to adjust to its development, especially in the development of existing technology, a system that can connect the information cycle at the point of weighting in the sales section that supports the company's progress.

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Researchers previously written in the journal by Riman Irfanto, and Johanes Fernandes Andry in 2017 with the title "Design of Corporate Architecture Using Zachman Framework (Case Study: Pt.Vivamas Adipratama)".resulted in the increasingly effective and efficient utilization of IS and IT supporting business activities, achieving one of the frameworks that address problems in the development of information systems in companies from various points of view is the Zachman Framework. The increasingly effective and efficient utilization of information systems (SI) and information technology (IT) that support business activities to achieve organizational goals and services for stakeholders. This goal is expected to be achieved optimally if there is synergy between SI and IT strategy with the company's business strategy. Vanilla Gemstone. The author's goal is to design a *Service Oriented Architecture* (SOA) framework system on a CV. Vanilla Gemstone so that in the future my research can help in business sales then the author took the title "DESIGN OF VANILLA SALES APPLICATION SYSTEM USING FREMWORK *SERVICE ORIENTED ARCHITECTURE* (SOA)"

2. Method

2.1 Service-Oriented Architecture (SOA)

Service Oriented Architecture (SOA) is a form of architectural technology that follows the principles of service orientation. [4] According to Thomas Erl (2015), SOA is a way to organize, utilize and distribute information or services under different domains/platforms. Provides a standard means of offering, discovering and providing interaction with other services so as to deliver new results in line with what is expected. SOA is a software architecture concept that defines the use of services in meeting software needs. [5] SOA is an important side of the service computing platform with new concepts, technologies, and challenges. Service Oriented Architecture can be used as an infrastructure if it meets several things. It is the encapsulation of business logic into the service, and the use of messages between services. The service layer will be the link between business logic and application logic. [6] SOA is a system development methodology that can move dynamically when developing information systems. Many things can be reduced in operating the process on soa, making it easier and faster to do the work. Something that doesn't need to be done repeatedly for example, someone checks, stores, or gets medical records when just interacting with the same validation and data. Building apps with the same source will be easier and faster for interconnected companies. SOA provides a design framework with a view to rapid realization with little system development cost to improve total system quality. [7]

2.2 Konsep *Arsitektur Berorientasi Layanan* (SOA)

SOA is a concept, architecture or approach to a system that can solve problems related to data transactions between applications represented in the form of webservices. [8]

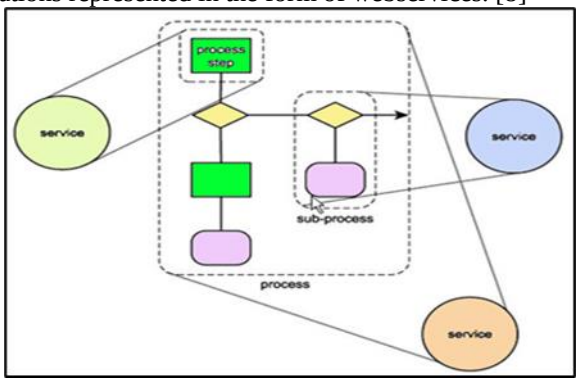

Fig 1. Service Oriented Architecture (SOA)

2.3 Web Service

A web service is an application of a data set (database), software (software) or piece of software that can be accessed remotely by various devices by a specific intermediary. The use of web services is able to address interoperabilityissues and integrate different systems.[9]

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2.4 UML

UML(unified modeling language) Is a method in visual modeling that is used visually that is used as a means of designing object-oriented systems. Keep in mind that a good system starts from a mature design and modeling. One of them is by using UML. [10]

2.5 *Hypertext Preprocessor*(PHP)

PHP is an open source server-side web programming language. PHP is a script that integrates with HTML and resides on a server*(server side of HTML embedded scripting)*. PHP is a *script* used to create dynamic *website* pages. [11]

2.6 *Basis Data MySQL*

MySQL is one of the database management systems (DBMS) of many DBMS such as Oracle, *Ms SQL, Postage SQL,*and others. MySQL works to process databases using the sql language. MySQL is *open source* so we can use it for free. PHP programming is also very *supportive* with MySQL databases.[12]

2.7 Framework

Framework It can only be interpreted as a collection of functions / procedures and classes for a specific purpose that are ready to be used so that it can further facilitate and accelerate the work of a programmer, without having to create functions or classes of various kinds.[13]

Framework can also be interpreted as a collection of scripts (especially classes and functions that can help developers / programmers in dealing with various problems in programming such as connections to databases, call variables, and files. So that developers are more focused and faster to build applications. [14]

A framework is a framework used to make it easier for software developers to create and develop applications. The framework contains basic commands and functions commonly used to build application software so that it is expected that applications can be built faster and organized and structured quite neatly. Framework can also be interpreted as a programming component that is ready to use at any time, so that application developers no longer need to create the same scrip for the same task. [15]

The steps to implement a vanilla sales information system with an SOA model with implementation on the Web Service are as follows:

a. Select and install DBMS *(Database Management System)*
b. Create a database schema
c. Create an SOA model by using *Web Service*

2.8 Testing

This is done using *Black Box Testing* with a classification that includes four tests, of all the tests all four results come out in accordance with theexpectedtest.

TABLE 1
Black Box Testing

No	Test Name	Expected Results	Test Results
1	Add order	Make the input blank and the user can fill in the number of items they want to order	OK
2	Edit order	Displays input that has been filled in by the user and can be changed according to the user's wishes	OK
3	Delete	Displays the inputs that have been filled in and the user can delete unwanted inputs	OK
4	Order data	Displays data that has been or will be ordered by the user	OK

3. Result and Analysis

Based on data and information obtained from interviews with stakeholders in the company, as well as conducting field observations by analyzing existing system documents there are several information needs for system users in this case the deputy director and director of the company so that the system can be

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accessed through vanilla sales information system with *web service technology.* . The needs of the user are divided into two categories, namely functional, non-functional needs.

Here are the functional needs of the system needed:

a. Vanilla Sales Information System is web-based with vanilla sales process needs, and sales input process needs.
b. Login, all system users must have a *username* and *password*,to be able to enter the System
c. Vanilla sales.
d. The access rights settings on each user of the system have the same access rights, this is because the data stored is the same in the form of vanilla data.
e. The system can provide information about existing goods.

3.1 Non-Functional Needs Analysis

a. Operational Aspects
   The system can be operated by enabling localhost in the browser by opening the XAMPP control panel application first (make sure you have downloaded the XAMPP application).
b. Security Aspects
   The application system must be equipped with *a password. The password* has been encrypted on the database, to detect the *link* must go through a legal login process so that if the login process is not legal then the system does not allow access to the link without going through the correct stages
c. Performance
   The system must be able to hold large amounts of data when the system is accessed by many users simultaneously. The system should also be quickly accessed.
d. Portability
   System portability can be run on all *platforms* of both *windows* operating systems.

4. Conclusion

From the research conducted on the CV sales system. Vanilla Gemstone was concluded as follows:

a. It is hoped that this system can make it easier for users to order products on a CV. Vanilla Gemstone.
b. Application of *Service Oriented Architecture* (SAO) method on CV sales processing. Vanilla Gemstone can help companies and make it easier for companies to be better and more efficient.
c. Testing is done using *black box testing* to get the expected results.

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