

Web-Based Water Distribution Information System at PDAM Tirtanadi Medan


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ABSTRACT (10 PT, Bolt)

PDAM Tirtandi Medan Web-based that can help employees who can easily perform air distribution services in villages far from the city, provide information to villagers and provide services for air distribution problems widely, quickly and update. The conclusion from the overall result is a clean water distribution information system which is expected to be a reference source that is easily accessible by non-technical users to explore statistical results, and make it easier for employees to collect data

Keyword : information system, waterfalls, websites, water

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1. INTRODUCTION (10 PT)

In today's fast-paced business world, distribution is one of the factors that play an important role in the progress of a company. If the goods have been produced, the company distributes goods to customers according to a predetermined strategy. For this reason, a policy that is carried out can provide direct benefits for companies in implementing an effective and efficient marketing system to achieve high customer satisfaction. Every company must pay attention and consider customer satisfaction. The problem that is often faced by companies is that companies are not necessarily able to provide the maximum satisfaction that is really expected by consumers or customers. "Satisfaction is a person's feelings of pleasure or disappointment that arise from comparing a product's perceived performance (or results) against their expectations." (Kotler and Keller, 2008, p.138). "Service is an activity carried out by a person or group of people on the basis of material factors through a system of procedures and with certain methods in an effort to fulfill the interests of other people according to their rights." (Moenir, 2008 p.27). Companies that use quality as a strategic tool will have a competitive advantage over their competitors in dominating the market, because not all companies are able to achieve superiority. Companies that implement optimal marketing strategies will be able to dominate the market. This means that consumers will be willing to buy a product at a relatively affordable price and with the best service. PDAM Tirtanadi Medan is a company engaged in drinking water services, the quality of service to customers is the company's main motivation. New and section subscription information report subscriptions. These three sections are the place for the customer to deal directly with the company regarding payment of water bills, installation of new clean water and complaints. The phenomenon that occurs in PDAM Tirtanadi is that water often flows small, information on repair services is not fast and responsive, payment methods are less efficient, and water distribution has not reached all regions. Some of these things cause customers to be dissatisfied with the service by PDAM Tirtanadi Medan. PDAM Tirtanadi has many branches in North Sumatra. Each branch has a different water supply from every river in North Sumatra. By promoting the concept of "clean drinking water" PDAM Tirtanadi always strives to provide the best satisfaction to its customers. Related research entitled "Timed "Web-based clean water distribution information system at the Regional Disaster Management Agency (BPBD) of Central Java Province." conducted by (F.N.Santika1,N.D.Saputro2.2019). In this study, the Waterfall method was used to produce a clean water distribution information system which is expected to be a reference source that is easily accessible to non-technical users to explore statistical results, and to make it easier for employees to collect data on water distribution to village communities in a fast and updated manner. . Another study entitled "Web-Based Water Management Information System in Tanjung Sari Village" (Ahmad Asrori, 2019). This research focuses on producing an information system that is able to provide facilities to customers in updating information for the purposes of new registration and payment of water bills. The system is created with its development method, namely using the Waterfall method, which is described in a structured

oriented modeling language or UML (Unified Modeling Language). From the problems above, a Water Management Information System in Tajung Sari Village can be produced.

2. RESEARCH METHOD/MATERIAL AND METHOD/LETERATURE REVIEW (10 PT)

2.1 Materials and Research Tools

Materials and Research Tools are necessities in the process of carrying out research so that it requires tools to support the design and implementation of systems, among others

2.2 Perangkat Keras

Hardware is a component or element of equipment used to support the making of PDA applications. The hardware that is used optimally requires minimum computer specifications as follows:

Table 1. Hardware

No	Jenis Perangkat Keras	Spesifikasi
1	<i>Processor</i>	<i>Intel Core I3</i>
2	<i>Memory</i>	2 GB
3	<i>Hardisk</i>	500 GB

2.3 Software

Perangkat lunak adalah suatu perangkat yang berfungsi sebagai pengatur aktivitas kerja komputer dan seluruh intruksi yang mengarah pada sistem komputer untuk menunjang pembuatan aplikasi pdam. Adapun perangkat lunak yang digunakan adalah sebagai berikut:

Table 2. Software

No	Jenis Perangkat Keras	Spesifikasi
1	Sistem Operasi	<i>Windows 7</i>
2	<i>Web Browser</i>	<i>Mouzila Firefox/Opera/Chrome</i>
3	<i>Text Editor</i>	<i>Notepad++</i>
4	<i>Software Pendukung</i>	<i>Xampp</i>
5	Desain system	<i>Visio</i>

2.4 System Design Design

1. Use Case Diagram

The system design stage has the purpose and purpose of meeting the needs of system users and to provide a clear picture and complete design of the decision support system to be built. And here the author uses UML as a system design, including the following:

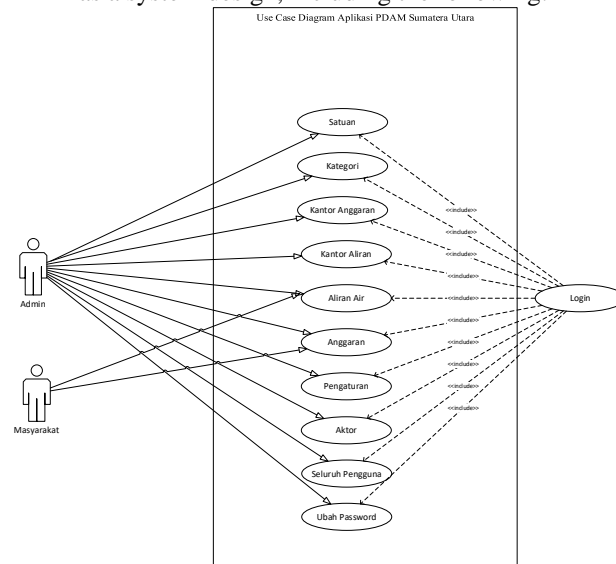


Fig 1. Use Case Diagram

2. Activity Diagram

Activities performed to add and view categories within the system. The design is as follows:

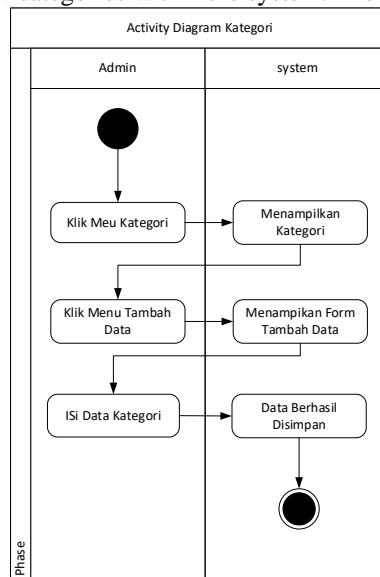


Fig 2. Activity Diagram

3. Database Design

Database design is used to determine the value or data type of an attribute, in the files contained in the database. Database design is also used to facilitate the storage of data that corresponds to groups of data or information. The developed database structure is as follows:

1. Water Flow Table

This table is used to store water flow data within the system. The table is as follows:

Table 2. Water Flow Table

Nama Field	Type Data	Keterangan
Id_aliran	Int	Primary Key
Nama_material	Varchar	Foregein Key
Ukuran	Varchar	-
Jumlah	Float	-
Kategori_id	Int	-
Satuan_id	Int	-
Pengisian_id	Int	-

2. Budget Table

This table is used to store budget data inside the system. The table is as follows

Table 3. Budget

Nama Field	Tipe Data	Keterangan
Id_	Int	Primary Key
Nama_anggaran	Varchar	-
Ukuran	Int	-
Jumlah	Float	-
Satuan_id	Int	Foregein Key
Analisa	Varchar	-
Jumlah_harga	Float	-
Kategori_id	Int	-
Kantor_id	Int	-

Data_created	Date	-
User_id	Int	Foregein Key
Status_konfirmasi	Tinyint	-

3. Tabel Group

This table is used to store group data in the system. The table is as follows:

Table 4 Group Tablep

Nama Field	Tipe Data	Keterangan
Id	Mediumint	Primary Key
Nama	Varchar	-
Description	Varchar	-

4. Queue Table

This table is used to store the flow office data inside the system. The table is as follows:

Table 5 Queue Table

Nama Field	Type Data	Keterangan
Id_kantor_aliran	Int	Primary Key
Nama_pemilik	Varchar	-
Alamat	Varchar	-
No_register	Varchar	-
User_id	Int	-

3. RESULTS AND DISCUSSION (10 PT)

3.1 Result

Login Page

This page displays the initial display which is for users to enter the system. The appearance is as follows:

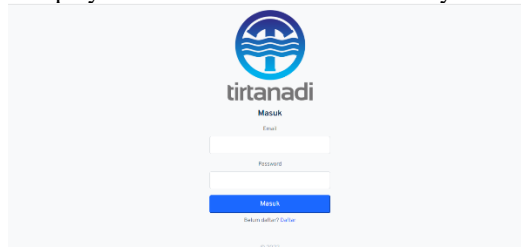


Fig 3. Login Page

Register Page

This page displays the registration menu when the user wants to use the application. The appearance is as follows:

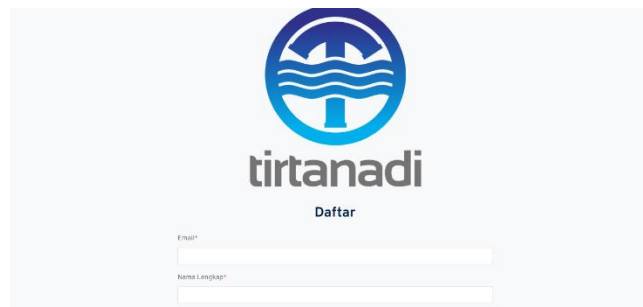


Fig 4. Register Page

Halaman Dashboard

This page is a display where the user has logged in to the system, while the appearance is as follows:

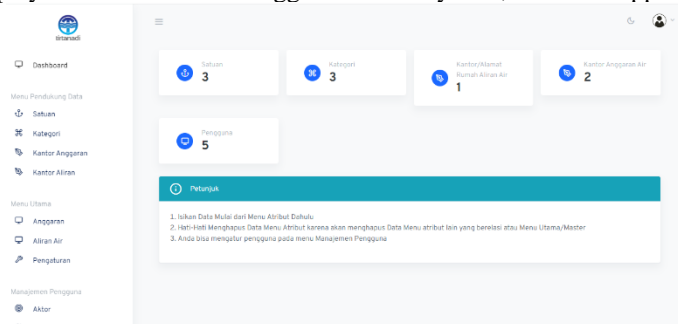


Fig 5. Dashboard Page

Budget Office Input Page

This page is used by users to add office budgets. The appearance is as follows:

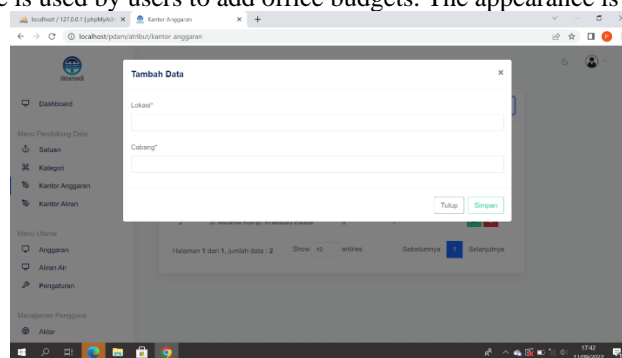


Fig 6. Budget Office Input Page

Budget Page

This page serves to store budget data in the system. The appearance is as follows:

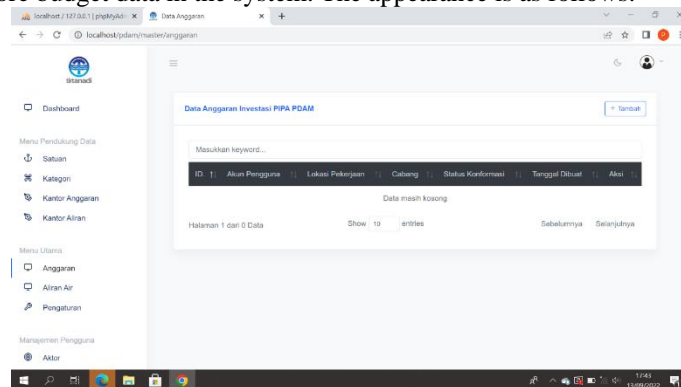


Fig 7. Budget Page

3.2 Discussion

The application is designed using php programming language and a web-based MySQL database, later this application can run online using hosting and domains. This application can make it easier for people to apply for water in their homes and this application can also help the performance of PDAM North Sumatra employees to be able to immediately process the data entered in the previously designed application.

4. Conclusion

Based on the results of the research and discussion that the writer has done, it can be concluded the design of the Web-Based Water Distribution Information System application at PDAM Tirtanadi Medan has been successfully designed and the application can run normally. With the design of the Web-Based Water Distribution Information System application in PDAM Tirtanadi Medan, the community can get water distribution service facilities online and in real time. With this application, employees in charge of providing data information are efficient, easy and accurate.

Title of manuscript is short and clear, implies research results (First Author)

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