Application of The Production Unit Method to Calculate Accumulated Depreciation of Factory Machinery using The Django Model

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ABSTRACT
The research was carried out with the aim of making it easier for companies to record and make depreciation reports on factory machines by utilizing existing information systems, to apply the service hours and production unit method in determining depreciation reports on factory machines in companies, to carry out analysis of depreciation data on factory machines in companies, to design and build a system for calculating depreciation of factory machines using the service hour method and the production unit method and to implement a comparison of the service hour method and the production unit method in the factory machine depreciation system. The problem faced by the company is that there is no application program for calculating depreciation on factory machines every month, so it takes quite a long time to determine the amount of depreciation on factory machines and the accumulated depreciation of factory machines every month and the reports obtained are less effective and less efficient. And in determining depreciation of processing factory machines, a special method has not been used to calculate depreciation of factory machines. The company still has many weaknesses, including recording errors, calculation errors, and also the process of making reports which takes a relatively long time.

Keywords:
Depreciation; Django Models; Production Units; PHP; MySQL

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INTRODUCTION
As time goes by, the current world of technology can become an important part of human life. Especially in the fields of information technology and telecommunications in determining accumulation shrinkage machine factories, the development of information and communication technology continues to increase from year to year. Telecommunication technology is a technology in data transmission that is developing very rapidly in almost all
parts of the world. As a fixed asset is used over time, at the same time its ability will begin to decrease or it will begin to experience obsolescence to create goods and services. This reduction in the capacity of fixed assets is referred to as depreciation.

According to research by Feri (2019) that to find out how depreciation of fixed assets can minimize the tax burden on the Jasa Tirta Farmers Cooperative (KOPTAN) in 2016. Cooperatives can choose a more effective and efficient depreciation method that is permitted by the Financial Accounting Standards for Entities Without Public Accountability (SAK-ETAP) as well as tax regulations and according to research (Ajeng, 2019) that useful life is defined in PSAK 16 as a period in which an asset expected to be used by the company, or as the amount of production or similar units expected to be obtained from the asset by the company. The useful life is the estimated period of time for using fixed assets in production activities. According to research (Sihombing, 2019), it is to find out the method of depreciation of fixed assets used by the company and the implications for company profits if other alternative methods are used.

Fixed assets are company assets, both tangible and intangible. The company's fixed assets are in the form of vehicles, factory machines, office equipment in the form of photocopy machines, computers, printers and other assets. PT. Tropical Channing And Frozen Industries namely companies operating in the field production and sales product Seafood on a large scale. Problems faced by the company namely, there is no application program for calculations shrinkage machine factory every the month So it takes quite a long time to determine the amount of machine depreciation factory as well as accumulation shrinkage machine factory every month and the reports obtained are less effective and less efficient. The company Still have lots of weaknesses including errors recording, error declaration formula calculations in Excel which are still manual, and also the manufacturing process reports that take a relatively long time.

The overcome this problem, a computer application is needed. The author created this application by applying the production unit method in determining depreciation of factory machines. The units of production method allocates the depreciable amount of an asset in equal amounts over its estimated useful life. Annual depreciation expense can be calculated by multiplying the depreciation rate by the depreciation basis. The basis for depreciation used is the cost of the asset minus its residual value, the economic life of a fixed asset is estimated in the number of working hours and the depreciation expense is calculated on the basis of actual working hours each period.

METHODS

Django is a web framework based on the Python programming language. Django is a Python web framework designed for creating dynamic, feature-rich and secure web applications. Django, which was developed by the Django Software Foundation, continues to be improved, making this web framework the main choice for many web application developers. (Saputra, 2018)

1. Data Type
   a. Primary data
      Primary data is data collected individually or through the research location, by conducting interviews or observations. In this research the author conducted observations and interviews with the inventory section at PT. Topical Channing & Frozen Industries. The interview process was carried out to find out the permanent active depreciation process, namely factory machines.
b. Secondary Data
Secondary data is data collected through previous research or books related to the research theme. The data obtained can be used as a basis for the writer in making several questions during interviews or what objects will be observed when making observations. The secondary data needed is the number of machines to be analyzed, machine rates and the usage period of the factory machines.

2. System Development Methods
development method used in this writing can be seen in Figure 1.

![Figure 1. System Development Method](https://example.com/image.png)

Description of the system development method is as follows:
1. Analysis Required: At this stage the researcher collects theoretical data related to the research, namely factory machine data and factory machine depreciation data.
2. System Design: In general, the tools used in applying the production unit method in calculating depreciation of factory machines at PT. Tropical Channing And Frozen Industries is PHP, MySql and UML designing using Visio 2013.
3. Coding Testing: The coding and testing phase involves the creation of an application, which is based on the proposed system plan using PHP and MySQL databases. This phase is the actual implementation part of the system. The system that has been developed is then tested using the black box method.
4. Program Testing: at this stage, comprehensive application testing is carried out, including functional testing and system resilience testing. Black box (interface) testing is software testing that tests the functionality of the application as opposed to the internal structure or work. Special knowledge of the application code/internal structure and programming knowledge is generally not required, the testing is for each designed block of equipment.
5. Program Maintenance: at this stage the researcher creates a program for practical completion of the research. The application was created using PHP and MySql programming. at this stage the entire system is running well, and if an error occurs the system will be revised again until the entire system is running very well.

RESULTS AND DISCUSSION
As discussed in previous chapters, in this research the author conducted research at PT. Tropical Channing and Frozen Industries and several fields to obtain the data needed to create systems or applications. In making observations the author obtained the following information:
1. Running System Analysis

Flow of Document is a modeling tool that allows systems professionals to describe the system as a network of functional processes that are connected to each other by data flow either manually or computerized. The FOD images from the Application of the Production Unit Method to Calculate Accumulated Depreciation of Factory Machines Using Django Mode include:

![Diagram](https://example.com/diagram.png)

**Figure 2.** FOD Application of the Production Unit Method to Calculate Accumulated Depreciation of Factory Machines Using the Django Model

2. Problem analysis

PT. Tropical Channing And Frozen Industries is a company that operates in the large-scale production and sale of seafood products. The company faces a problem where there is no application program for calculating the monthly depreciation of factory machinery. This results in a significant amount of time being spent to determine the monthly depreciation and accumulated depreciation of factory machinery, leading to less effective and efficient reports. The process of determining the depreciation of factory machinery has not yet utilized a specific method for calculating factory machinery depreciation. Many activities in the depreciation information system of factory machinery data processing are still semi-computerized, using Microsoft Excel 2007, which can lead to errors in recording factory machinery depreciation and frequent loss of monthly factory machinery depreciation data. This complicates the inventory section in determining the depreciation of factory machinery and there is no specific application program to record the depreciation data of factory machinery and the monthly purchase price of factory machinery. The company still has many weaknesses, including recording errors, errors in declaring formula calculations in Excel which are still manual, and the report generation process that takes a relatively long time.
3. Implementation

a. Appearance Depreciation Data Form

This form displays depreciation data options. When you select depreciation data, the program will display depreciation data. An image of the depreciation data form display can be seen in Figure 3:

![Figure 3. Depreciation Form Display](image)

b. Appearance Machine Data Form

This form displays machine data options, when selecting machine data the program will display machine data. An image of the machine data form display can be seen in Figure 4:

![Figure 4. Machine Form Display](image)

c. Appearance Machine Input Data Form

This form displays machine data options, when selecting machine data the program will display machine data. An image of the machine data form display can be seen in Figure 5:
d. Appearance Production Data Form
This form displays production data options. When selecting production data the program will display production data. An image of the production data form display can be seen in Figure 6:

![Figure 6. Production Form Display](image)

e. Appearance User Data Form
This form displays user data options, when selecting user data the program will display user data. An image of the user data form display can be seen in Figure 7:
CONCLUSION

Based on the research that has been carried out while making this application, several conclusions can be drawn that the factory machine depreciation process application uses the production unit method at PT. Tropical Channing and Frozen Industries by using the django model can make it easier for the inventory department to determine the depreciation price of factory machines. This research can make it easier for the inventory department to determine factory machines that are suitable for use at PT. Tropical Channing And Frozen Industries. The factory machine depreciation application system was created using the Django and Python models. Suggestions for developing applications in the future are to develop a depreciation system for factory machines using an Android-based application so that it can be used anytime and anywhere. It is best to develop a system for access rights for the warehouse, administration and leadership in using the system being designed.

REFERENCES


