

FORECASTING ANALYSIS OF HONDA MOTORCYCLE SALES INVENTORY

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ABSTRACT

Forecasting is an important tool in planning effective and efficient. Forecasting is an attempt to predict the situation in the future by testing the situation in the past. In forecasting there are many methods, the method used in this study is the exponential smoothing method. The exponential smoothing method is a procedure of continuous improvement in forecasting the latest observed objects. This forecasting method focuses on exponentially decreasing priorities in previous observational objects with the support of a computerized system, it is expected that the forecasting will be more effective and efficient in its use. And can facilitate the workings of companies in predicting and doing prevention, so that a more accurate system of implementation of prevention can be realized properly and correctly.

INTRODUCTION

Competition in the business world has created intense competition between agencies with one another. Similarly, the motorcycle inventory in the CV. Panca Prima Abadi which uses a manual method for the process and has not been computerized properly [1]. The number of motorcycle sales that must be provided refers to the number of motorcycle purchases per month. To find out the number of motorcycle sales that will be provided when the warehouse provides a report stock inventory of motorcycle sales that will run out [2]. However, the stock inventory of motorcycle sales that will be exhausted cannot be reported immediately because the warehouse section has difficulty in monitoring the availability of motorcycle sales in the warehouse due to the absence of a system that can monitor the inventory of motorcycle sales in the warehouse, so planning to purchase bicycle sales motorcycle is sometimes done when the stock of motorcycle sales is up. The stock of motorcycle sales is exhausted when the warehouse section checks the motorcycle stock data one by one [3]. This often results in a shortage of motorcycle sales so that the company loses the opportunity to make a profit.

Based on the above problem, a forecasting technique is designed in the supply of motorcycle sales in the CV. Panca Prima Abadi. Forecasting is an attempt to predict the situation in the future by testing the situation in the past. In forecasting there are many methods, the method used in this study is the exponential smoothing method. The exponential smoothing method is a procedure of continuous improvement in forecasting the latest observed objects.

With the support of a computerized system, forecasting is expected to be done more effectively and efficiently in its use. And can facilitate the workings of companies in predicting and doing prevention, so that a more accurate system of implementation of prevention can be realized properly and correctly. So the authors conducted research "Forecasting Analysis of Honda Motorcycle Sales Inventory in the CV. Panca Prima Abadi".

METHOD

Exponential smoothing method is a method of forecasting moving averages with sophisticated weighting, but still easy to use, this method has a very little recording of past data [4]. This method records very little of past data. The exponential refining formula is as follows :

$$F_{t+1} = \alpha X_t + (1-\alpha) F_{t-1} \quad (1)$$

Information:

F_{t+1} = forecast for period $t+1$ X_t = real value of period t

α = weight which indicates the smoothing constant ($0 < \alpha < 1$) F_{t+1} = forecast for period $t-1$

The following are data on the number of Honda motorcycle sales inventories from January 2017 to June 2018.

Table 1. Forecasting Results Inventory sales of Honda motorcycles

Year	of Actual Data (Xt)	Ft
Jan18	243	-
Feb18	264	243
Mar18	214	261,9
Apr18	199	218,79
Mei18	320	200,979
Jun18	273	308,098
Jul18	216	276,51
Agt18	250	222,051
Sept18	243	247,2051
Okt18	222	243,42
Nov18	290	224,142
Des18	287	283,4142
Jan19		286,641

At the sample test stage it was found that forecasting the number of sales of Honda motorcycles in January 2019 amounted to 286

RESULT AND DISCUSSION

System Implementation

Implementation is the stage of the application and at the same time testing for the system based on the results of the analysis and design that has been done in chapter 4. In chapter 5 this is the implementation of the design results into an application system of forecasting sales of Honda motorcycles in the CV. Panca Prima Abadi. The steps in implementing the system are[5]:

1. Create and test a database.
2. Creating and testing programs.
3. Install and test a new system.
4. Send a new system into the operating system.

System Testing

Tests conducted are white-box testing, black-box testing, and UML testing. White-box testing is used to test the system. White-box testing is used to ensure all commands and conditions are executed at a minimum. Black Box Testing Used to test the special functions of software designed[6].

Testing with Black box

The black box testing plan will be carried out by testing the system. Testing employee decision support systems on the CV. Panca Prima Abadi. The complete black box testing plan can be seen in the table below[7].

Table 2. Testing Plan

Detailed Testing	of Descriptive Testing	Descriptive
<i>Admin login</i>	<i>Verify username and password</i>	<i>Input username and password to login</i>
Detailed Testing	of Descriptive Testing	Descriptive
Testing the forecasting process	Process forecasting data as well as a material for consideration of forecasting as well as save, delete, search and exit	Add forecasting data to the process of report results.
Test Reports forecasting results.	Displays the results of the data specified	Print report

This testing plan is continued with the case and test results. then the test can be carried out as follows:

Testing Forecasting Process

This test is a test by entering family data and then processed into the system with the provisions of the type of forecasting that have been entered, For more details can be seen in the following table[8].

Table 3. Forecasting Testing

Cases and Test Results Forecasting Process (Normal Data)						
Data Input		Results	Expected		Conclusion	
Click the Forecasting Menu	the	Can go to the forecasting page	The plus button is as expected.	as	<input checked="" type="checkbox"/> Received <input type="checkbox"/> Rejected	
Click the button Save	the	Forecast data that has been added to the form column is stored in the database	Save button as expected.	as	<input checked="" type="checkbox"/> Received <input type="checkbox"/> Rejected	
Click the button Cancel	the	forecasting that has been canceled in the form column has been successfully stored in the database.	Process button as expected.	as	<input checked="" type="checkbox"/> Received <input type="checkbox"/> Rejected	
Click the button Delete	the	Forecasting data that has been added to the form column successfully deleted.	Delete button as expected..	as	<input checked="" type="checkbox"/> Received <input type="checkbox"/> Rejected	

Testing Forecasting Data Reports

This test is a test by displaying employee data reports. For more details can be seen in the following table:

Table 4. Testing Forecasting Reports

Data Input		Results	Expected		Conclusion	
Click the forecast report button	the data report button	Can enter the forecast data report form page and ready to print.	Report button on forecasting data as expected	as	<input checked="" type="checkbox"/> Received <input type="checkbox"/> Rejected	

Test Results

The results of this test are the results of the display program that has been completed. The following are the results of the forecasting program for the sale of Honda motorcycle inventory at CV. Panca Prima Abadi[9]:

Display Data Forecasting

Forecasting data input functions as one of the forecasting for the following week such as save, cancel, delete, search, and cancel. The following is the forecast input data display[10]:



Figure 1. Display Data Forecasting

CONCLUSION

Using the exponential smoothing method can forecast sales of Honda motorcycle inventories the following week. Can design a forecast motorcycle sales forecast application using the exponential smoothing method. Can implement a forecasting system for selling motorcycle inventory at CV. Panca Prima Abadi.

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