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Application Of The Triple Exponential Smoothing Method In Predicting Electronic Equipment Inventory Based On Customer Demand

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ABSTRACT

PT. Wira Dwika is a company engaged in the production of electronic equipment and product distribution is carried out after the production process takes place. The obstacle that is often faced by companies is the difficulty in determining the number of products that will be provided by the company so that errors often occur in fulfilling customer requests and in predicting supplies for the next period. The system that runs at the company still uses a manual system so that errors often occur in determining the number of products to be distributed, and the Inventory section also often has difficulty determining the stock to be provided in future periods and the demand is more than the number of products already available in production. So it greatly affects profit and loss as well as inventory data processing. So the researchers used the Triple Exponential Smoothing Method to overcome the obstacles faced by the company because the Triple Exponential Smoothing method is an effective method in terms of forecasting. Electronic equipment still uses workbook paper and is less efficient in making product inventory reports. The electronic equipment inventory report input system still uses Microsoft Excel 2007 so that the data obtained is inaccurate and does not yet use electronic equipment inventory storage with a database system, by implementing PHP applications and MySQL databases it can help companies calculate predictions of electronic equipment distribution in the next period. So that it greatly affects profit and loss as well as processing inventory data for electronic equipment still using paper workbooks and is less efficient in making product inventory reports.

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1. INTRODUCTION

Prediction is a conjecture or estimate regarding the occurrence of an event or event in the future. This prediction is very useful in various fields of life, especially in planning to anticipate various conditions that will occur in the future[1]. The development of technology in this era is growing very fast in line with the magnitude of the need for information. Technological developments are very useful in solving problems in a company[2]. Over time, the development of the world of technology is increasingly advanced, with the discovery of computers, human work is felt to be easier. Today's computers are often referred to as work partners, so they are no stranger to computers[3].

PT. Wira Dwika is a company engaged in the production of electronic equipment and product distribution is carried out after the production process has taken place. The obstacle that is often faced by companies is difficulty in determining the number of products that will be provided by the company so that errors often occur in fulfilling requests from customers and in predicting inventory for the next period. The system that runs at the company still uses a manual system so that errors often occur in determining the number of products to be distributed, and the Inventory section also often has difficulty determining the stock to be provided in the coming period and the demand is more than the number of products that have been produced. in production. So that it greatly affects profit or loss as well as data processing of electronic equipment inventory still uses work paper books and is less efficient in preparing product inventory reports. The method used as the basis for this system is the triple exponential smoothing method with a time series data pattern. The accuracy in designing the maximum system can determine predictions for the distribution of electronic equipment reaching 98.15% so there is very little error in determining predictions for the next period. The Exponential Smoothing method is used when there are elements of trend and seasonal behavior shown in the data. The Exponential Smoothing method can be used for almost any type of stationary or non-stationary data as long as the data does not

contain seasonal factors. But if there is seasonal data, the triple method can be used as a way to predict data that contains seasonal factors[4]. The Triple Exponential Smoothing method can overcome the obstacles faced by companies because the Triple Exponential Smoothing method is a linear model proposed by Brown. The application of the triple Exponential Smoothing method is implemented with a web-based application, namely using the PHP programming language and MySQL database. PHP is an Open Source software[5] and MySQL is an implementation of a relational database management system (RDBMS) which is distributed free under the GPL (General Public License)[6].

According to Ratih Yulia Hayuningtyas [7] with the title "Implementation of the Triple Exponential Smoothing Method for Predicting Medical Device Sales" that the research was conducted to predict medical device sales while the research was conducted by the author to predict electronic equipment inventory. According to Nanda Saputra [8] with the title "Application of the Triple Exponential Smoothing Method in the Sales Forecasting Application of Furniture Types at UD. Karya Jati" that is, they often experience problems when forecasting sales, so this study uses the Exponential Smoothing algorithm to forecast the following month. Based on the background above, the title "Application of the Triple Exponential Smoothing Method in Predicting Electronic Equipment Inventory Based on Customer Demand" can be taken.

2. RESEARCH METHOD

The system development method used in making this system is Waterfall. The Waterfall model is a software life process that has a linear and sequential process[9]. The picture below is the process stages of the waterfall method.

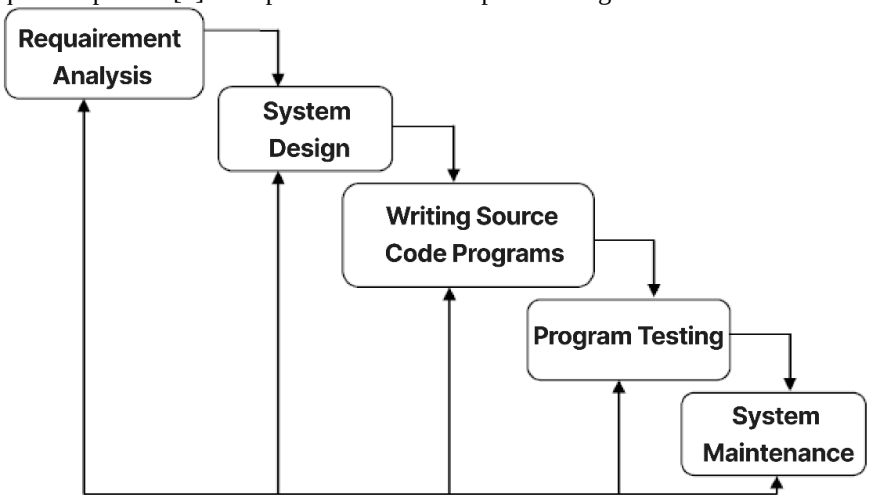

Figure 1 Stages Process Waterfall

The following is an explanation of the process stages in the image above as follows:

A. Requirements Analysis

Contains things that must exist in the results of the design in order to be able to solve existing problems according to the purpose. The data needed in designing the system are product data, sales data, consumer data, distribution data, author data, user data and the programming language used to create applications is PHP.

B. System Design

At the system design stage, researchers designed the Triple Exponential Smoothing Method in determining the distribution of electronic devices at PT. Wira Dwika Medan using the Unified Modeling Language design model which consists of use case diagrams, class diagrams, activity diagrams and sequence diagrams.

C. Writing Source Code Programs

After the coding is complete, testing will be carried out on the system that was created earlier. The purpose of testing is to find errors in the system and then fix them.

D. Program Testing

At this stage, a thorough application test is carried out by applying black box (interface) testing, namely software testing that tests the functionality of the application that conflicts with the internal structure or work. After doing analysis, design and coding, the system that has been made is used by the user. Black box (interface) testing is software testing that tests the functionality of applications that conflict with the internal structure or work.

E. System Maintenance

Software that is difficult to deliver to customers will definitely experience changes. These changes can be due to errors because the software must adapt to the new environment.

3. RESULTS AND DISCUSSION

3.1. System Planning

A. System Analysis

1) The Flowmap system is running

This flowmap explains how the flow of the system runs towards the delivery of goods at PT. Wira Dwika is done conventionally, while the plot is explained in the following flowmap diagram:

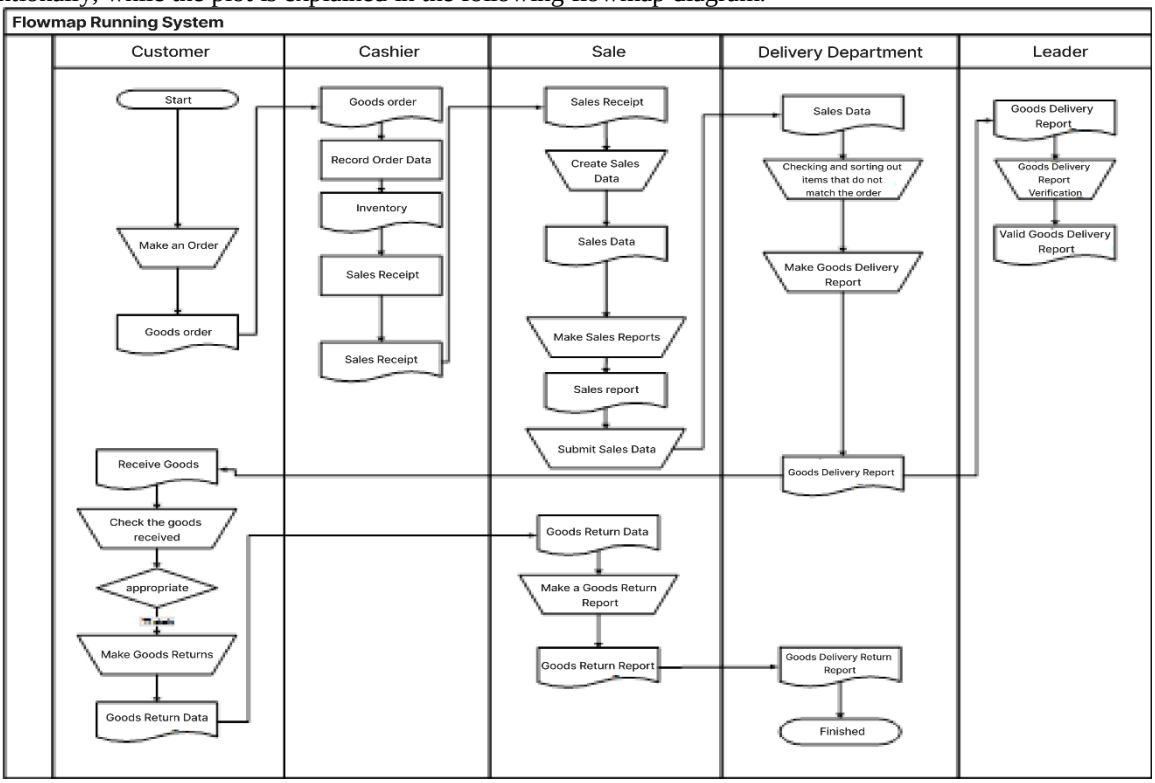

Figure 2 The Flowmap system is running

2) Flowmap Proposed System

The proposed system of the system that runs in this research is to develop an application that can run on the Application of the Triple Exponential Smoothing Method in Predicting Electronic Equipment Inventory Based on Customer Demand. In this system, two applications will be made, namely for admins and customers. The following is a flowmap and illustration of the proposed system architecture :

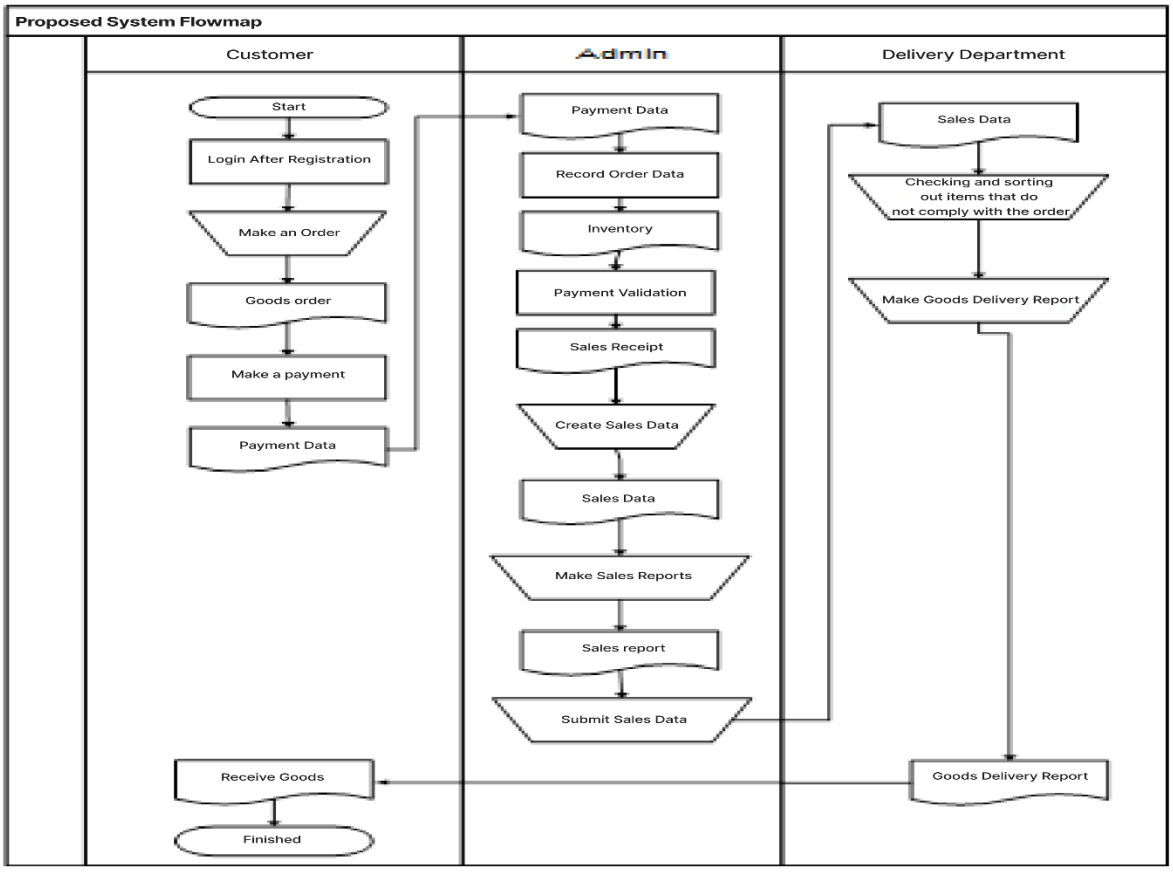

Figure 3 Flowmap Proposed System

B. System Design

The design that will be used in building this system is using UML modeling. The Unified Modeling Language (UML) is a collection of modeling conventions used to define or describe a software system associated with objects. UML is one of the most reliable tools in the field of object-oriented system development because UML provides a visual modeling language that allows system developers to create a blueprint for their vision in standard form[10]. The following are the diagrams used, among others :

1) Use Case Diagram

Use cases are used to create a visualization of the development design of a software or information system that describes the functional requirements of the system in question[11].

2) Activity Diagram

Activity diagram is to describe the workflow or activity of a system or business process or menu in the software[12].

3) Sequence Diagram

Sequence diagrams are used to describe interactions between objects in and around the system in the form of messages that are described over time. Sequence diagrams consist of a vertical dimension (time) and a horizontal dimension (related objects)[13].

4) Class Diagram

Class diagram is a depiction of the system and its structure in the form of classes involved in system performance where class diagrams describe groups of objects along with operating properties and relationships needed in the system[14].

3.2. Implementation

1. Implementation of the Triple Exponential Smoothing Method in the Case Study of PT. Wira Dwika

Using the Triple Exponential Smoothing method is as follows. The provisions for the value of α used are :

Table 1. The Case of the Triple Exponential Smoothing Method

No	α	β
1	0.1	0.1
2	0.2	0.2
3	0.3	0.3
4	0.4	0.4
5	0.5	0.5

6	0.6	0.6
7	0.7	0.7
8	0.8	0.8
9	0.9	0.9

PT. Wira Dwika recapitulated goods data based on requests for Magic Com goods under the Maspion brand for 1 (one) year in the period January 2021 - December 2021 with the following data:

Table 2. Distribution data for Magic Com under the Maspion brand for 2021

Month	Year	Distribution Amount	Unit
Januari	2021	135	Unit
Februari	2021	125	Unit
Maret	2021	75	Unit
April	2021	151	Unit
Mei	2021	122	Unit
Juni	2021	155	Unit
Juli	2021	170	Unit
Agustus	2021	160	Unit
September	2021	151	Unit
Oktober	2021	161	Unit
November	2021	178	Unit
Desember	2021	156	Unit

A. The first stage *Single Exponential Smoothing*: $S'_t = aX_t + (1 - a)\ S't\text{-}1$ (X1)

1. Exponential smoothing in January
   $S'_1 = (0,3)135 + (1\text{-}0,3)\ 135$
   $S'_1 = 40.5 + 94.5 = 135$
2. Exponential smoothing in February
   $S'_2 = (0,3)\ 125 + (1 - 0,3)\ 135$
   $S'_2 = 37.5 + 94,5 = 132$
3. Exponential smoothing in Maret
   $S'_3 = (0,3)\ 75 + (1 - 0,3)\ 132$
   $S'_3 = 22,5 + 92,4 = 114,9$
4. Exponential smoothing in April
   $S'_4 = (0,3)\ 151 + (1 - 0,3)\ 114,9$
   $S'_4 = 45,3 + 80,43 = 125,73$
5. Exponential smoothing in May
   $S'_5 = (0,3)\ 122 + (1 - 0,3)\ 125,73$
   $S'_5 = 36,6 + 88,011 = 124,611$
6. Exponential smoothing in June
   $S'_6 = (0,3)\ 155 + (1 - 0,3)\ 124,611$
   $S'_6 = 46,5 + 87,228 = 133,728$
7. Exponential smoothing in July
   $S'_7 = (0,3)\ 170 + (1 - 0,3)\ 133,728$
   $S'_7 = 51 + 93,61 = 144,61$
8. Exponential smoothing in August
   $S'_8 = (0,3)\ 160 + (1 - 0,3)\ 144,61$
   $S'_8 = 48 + 101,227 = 149,227$
9. Exponential smoothing in September
   $S'_9 = (0,3)\ 151 + (1 - 0,3)\ 149,227$
   $S'_9 = 45,3 + 104,459 = 149,759$
10. Exponential smoothing in October
    $S'_{10} = (0,3)\ 161 + (1 - 0,3)\ 149,759$
    $S'_{10} = 48,3 + 104,831 = 153,131$
11. Exponential smoothing in November
    $S'_{11} = (0,3)\ 178 + (1 - 0,3)\ 153,131$
    $S'_{11} = 53,4 + 107,192 = 160,592$
12. Exponential smoothing in December
    $S'_{12} = (0,3)\ 156 + (1 - 0,3)\ 160,592$
    $S'_{12} = 46,8 + 112,414 = 159,214$

B. Second Stage *Double Exponentia Smoothing*: $S''_t = aS'_t + (1 - a)\ S''_t\text{-}1$ (X2)

1. January Double Exponential Smoothing
   S"1= (0,3 x135) + (1,0,3) 135
   S"1= 40.5 + 94.5=135
2. February Double Exponential Smoothing
   S"2= (0,3) 132 + (1 − 0,3) 135
   S"2= 39,6 + 94,5 = 134,1
3. Maret Double Exponential Smoothing
   S"3= (0,3) 114,9 + (1 − 0,3) 134,1
   S"3= 34,47 + 93,87 = 128,34
4. April Double Exponential Smoothing
   S"4= (0,3) 125,73 + (1 − 0,3) 128,34
   S"4= 37,719+ 89.838 = 127,557
5. May Double Exponential Smoothing
   S"5= (0,3) 124,611+ (1 − 0,3) 127,557
   S"5= 37,383 + 89,29 = 126,673
6. June Double Exponential Smoothing
   S"6= (0,3) 133,728 + (1 − 0,3) 126,673
   S"6= 40,118 + 88,671 = 128.789
7. July Double Exponential Smoothing
   S"7= (0,3) 144,61 + (1 − 0,3) 128,789
   S"7= 43,383 + 90,152 = 133,535
8. August Double Exponential Smoothing
   S"8 = (0,3) 149,227 + (1 − 0,3) 133,535
   S"8 = 44,768 + 93,474 = 138,242
9. September Double Exponential Smoothing
   S"9= (0,3) 149,759 + (1 − 0,3) 138,242
   S"9= 44,928 + 96,769 = 141,697

10. October Double Exponential Smoothing
    S”10 = (0,3) 153,131 + (1 − 0,3) 141,697
    S”10 = 45,939 + 99,188 = 145,127
11. November Double Exponential Smoothing
    S”11 = (0,3) 160,592 + (1 − 0,3) 145,127
    S”11 = 48,178 + 101,589 = 149,767
12. December Double Exponential Smoothing
    S”12 = (0,3) 159,214 + (1 − 0,3) 149,767
    S”12 = 47,764 + 104,837 = 152,601

C. Third Phase *Triple Exponential Smoothing* : $S'''_t = a\,S''_t + (1-a)\,S''_{t-1}$ (X3)

1. Smoothing of trend values in January
   S'''_t= (0,3 x135) + (1,0,3)135 = 135
   S'''_t = 40.5 + 94.5 = 135
2. Smoothing of trend values in February
   S'''_t = 0.3 (134,1) + 0.7(135)
   S'''_t = 40.23+94,5 = 134,73
3. Smoothing of trend values in Maret
   S'''_t = 0.3 (128,34) + 0.7(134,73)
   S'''_t = 38,502+94,311 = 132,813
4. Smoothing of trend values in April
   S'''_t = 0.3 (127,557) + 0.7(132.813)
   S'''_t = 38,267+92,969 = 131,236
5. Smoothing of trend values in May
   S'''_t = 0.3 (126,673) + 0.7(131.236)
   S'''_t = 38,001+91,865 = 129,544
6. Smoothing of trend values in June
   S'''_t = 0.3 (128,789) + 0.7(129,544)
   S'''_t = 38,637+90,907 = 129,544
7. Smoothing of trend values in July
   S'''_t = 0.3 (133,535) + 0.7(129,544)
   S'''_t = 40,06+90,681 = 130,741
8. Smoothing of trend values in August
   S'''_t = 0.3 (138,242) + 0.7(130,741)
   S'''_t = 41,473+91,529 = 132,991
9. Smoothing of trend values in September
   S'''_t = 0.3 (141,697) + 0.7(132,991)
   S'''_t = 42,509+93,094 = 135,603
10. Smoothing of trend values in October
    S'''_t = 0.3 (145,127) + 0.7(135,603)
    S'''_t = 43,538+94,922 = 138,46
11. Smoothing of trend values in November
    S'''_t = 0.3 (149,767) + 0.7(138,46)
    S'''_t = 44,93+96,922 = 141,85
12. Smoothing of trend values in December
    S'''_t = 0.3 (152,601) + 0.7(141,85)
    S'''_t = 45,78+99,296 = 145,077

D. Value Calculation a_t : $a_t = 3S'_t - 3S''_t + S'''_t$ (X4)

1. Calculation of the value of a in January
   a_1 = 3(140)-3(140)+140
   = 140
2. Calculation of the value of a in February
   a_2 = 3(132)-3(134,1)+134,73
   = 396 – 402,3+134,73 = 128,43
3. Calculation of the value of a in Maret
   a_3 = 3(114,9)-3(128,34)+132,813
   = 344,7 – 385,02+132,813 = 92,493
4. Calculation of the value of a in April
   a_4 = 3(125,73)-3(127,557)+131,236
   = 377,19 – 382,671 + 131,236
   a_4 = 125,755
5. Calculation of the value of a in May
   a_5 = 3(124,611)-3(126,673)+129,867
   = 373,833 – 380,019 + 129,867
   a_5 = 123,681
6. Calculation of the value of a in June
   a_6 = 3(133,728)-3(128,789)+129,544
   = 401,184 – 386,367 + 129,544
   a_6 = 144,361
7. Calculation of the value of a in July
   a_7 = 3(144,61)-3(133,535)+130,741
   = 433,83 – 400,605 + 130,741
   a_7 = 163,966
8. Calculation of the value of a in August
   a_8 = 3(149,227)-3(138,242)+132,991
   = 447,681 – 414,726 + 132,991
   a_8 = 165,946
9. Calculation of the value of a in September
   a_9 = 3(149,759)-3(141,697)+135,603
   = 449,277– 425,091 + 135,603
   a_9 = 159,789
10. Calculation of the value of a in October
    a_{10} = 3(153,131)-3(145,127)+138,46
    = 459,393-435,381+138,46
    a_{10} = 162,472
11. Calculation of the value of a in November
    a_{11} = 3(160,592)-3(149,767)+141,852
    = 481,776-449,301+141,852
    a_{11} = 174,327
12. Calculation of the value of a in December
    a_{12} = 3(159,214)-3(152,601)+145,077
    = 477,642 – 457,803 + 145,077
    a_{12} = 164,916

E. Value Calculation b_t : $b_t = a / 2(1-a)(6 -5.a)S' -(10 8.a)S'' +(4 -3.a)\,S'''t$ (X5)

$b_t = a / 2(1-a)(6 -5.a)S' -(10-8.a)S'' -(4 -3.a)\,S'''_t$

1. Calculation of the value of b1 in January
   b_1 = (0.3/(2x0.7)x((6-(5*0.3)135)-(10-(8x0,3)135)+(4-(3x0.3)135))
   b_1 = 0.214x((-204)-(-326)+(-122)) = 0
2. Calculation of the value of b2 in February
   b_2 = (0.3/(2x0.7)x((6-(5*0.3)132)-(10-(8x0,3)134,1)+(4-(3x0.3)134,73))
   b_2 = 0.214x((-192)-(-311,84)+(-117,257))
   = 0,553
3. Calculation of the value of b3 in Maret
   b_3 = (0.3/(2x0.7)x((6-(5*0.3)114,9)-(10-(8x0,3)128,34)+(4-(3x0.3)132,813))
   b_3 = 0.214x((-166,35)-(-298,016)+(-115,532))
   = 3,453

4. Calculation of the value of b4 in April
   b_4 = (0.3/(2x0.7)x((6-(5*0.3)125,73)-(10-(8x0,3)127,557)+(4-(3x0.3)131,236))
   b_4 = 0.214x((-182,595)-(-296,137)+(-114,113)) = -0.122
5. Calculation of the value of b5 in May
   b_5 = (0.3/(2x0.7)x((6-(5*0.3)124.611)-(10-(8x0,3)126.673)+(4- (3x0.3)129,867))
   b_5 = 0.214x((-180,917)-(-294,015)+(-112,881)) = 0,047
6. Calculation of the value of b6 in June
   b_6 = (0.3/(2x0.7)x((6-(5*0.3)133.728)-(10-(8x0,3)128.789)+(4-(3x0.3)129,544))
   b_6 = 0.214x((-194,592)-(-299,094)+(-112.589)) = -1,731
7. Calculation of the value of b7 in July
   b_7 = (0.3/(2x0.7)x((6-(5*0.3)144,61)-(10-(8x0,3)133,535)+(43x0.3)130,741))
   b_7 = 0.214x((-210,915)-(-310,484)+(-113.667)) = -3,017
8. Calculation of the value of b8 in August
   b_8 = (0.3/(2x0.7)x((6-(5*0.3)149,227)-(10-(8x0,3)138,242)+(4-(3x0.3)132,991))
   b_8 = 0.214x((-217,841)-(-321,781)+(-115,692)) = -2,515
9. Calculation of the value of b9 in September
   b_9 = (0.3/(2x0.7)x((6-(5*0.3)149,759)-(10-(8x0,3)141,697)+(4-(3x0.3)135,603))
   b_9 = 0.214x((-218,639)-(-330,073)+(-118,043)) = -1,414
10. Calculation of the value of b10 in October
    b_{10} = (0.3/(2x0.7)x((6-(5*0.3)153,131)-(10-(8x0,3)145,127)+(4-(3x0.3)138,46))
    b_{10} = 0.214x((-223,697)-(-338,305)+(-120,614)) = -1,285
11. Calculation of the value of b11 in November
    b_{11} = (0.3/(2x0.7)x((6-(5*0.3)160,592)-(10-(8x0,3)149,767)+(4-(3x0.3)141,852))
    b_{11} = 0.214x((-234,888)-(-349,411)+(-123,667)) = -1,95
12. Calculation of the value of b12 in December
    b_{12} = (0.3/(2x0.7)x((6-(5*0.3)159,214)-(10-(8x0,3)152,601)+(4-(3x0.3)145,077))
    b_{12} = 0.214x((-232,821)-(-356,242)+(-126,569)) = -0,673

F. Perhitungan nilai c_t : $c_t = a2(1 - a)2 (S''t - 2S''t + S'''t)$ **(X6)**

$c_t = a^2(1-a)^2 (S''_t - 2S''_t + S'''_t)$

1. Calculation of the value of C1 in January
   C_1 = 0.3²/(1-0.3)² *((135- (2*135)+135))
   C_1 = 0
2. Calculation of the value of C2 in February
   C_2 = 0.3²/(1-0.3)² *((132- (2*134,1)+134,73))
   C_2 = -0.27
3. Calculation of the value of C3 in Maret
   C_3 = 0.3²/(1-0.3)² *((114,9-(2*128,34)+134,73))
   C_3 = -1,647
4. Calculation of the value of C4 in April
   C_4 = 0.3²/(1-0.3)² *((125,73-(2*127,557)+131,236))
   C_4 = 0.3402
5. Calculation of the value of C5 in May
   C_5 = 0.3²/(1-0.3)² *((124,611-(2*126,673)+129,867))
   C_5 = 0.208
6. Calculation of the value of C6 in June
   C_6 = 0.3²/(1-0.3)² *((133,728-(2*128,789)+129,5438))
   C_6 = 1,046
7. Calculation of the value of C7 in July
   C_7 = 0.3²/(1-0.3)² *((144,61-(2*133,535)+130,741)) = 1,521
8. Calculation of the value of C8 in August
   C_8 = 0.3²/(1-0.3)² *((149,227-(2*138,242)+132,991)) = 1,053
9. Calculation of the value of C9 in September
   C_9 = 0.3²/(1-0.3)² *((149,759-(2*141,697)+135,603)) = 0,361
10. Calculation of the value of C10 in October
    C_{10} = 0.3²/(1-0.3)² *((153,131-(2*145,127)+138,46)) = 0.246
11. Calculation of the value of C11 in November
    C_{11} = 0.3²/(1-0.3)² *((160,592-(2*149,767)+141,852)) = 0.534
12. Calculation of the value of C12 in December
    C_{12} = 0.3²/(1-0.3)² *((159,214-(2*152,601)+145,077)) = -0,167

Forecasting results for January 2022 are :

$F_t + m = a_t + b_t(1) + ½ c_t(1)$

= 164,916+ -0,673 (1) + (1/2 *-0,167(1)) = 164,916+ -0,673 + (-0,0835)

= 164,16

Thus the number of Magic Com products under the Maspion brand in January 2022 is 164 units. And the number of forecasts in January was declared to have decreased compared to December 2021 data.

2. System Implementation

A. Customer

After logging in using an existing account, then you will be directed to enter the main menu input form display page which functions to display the main view of the User interface. The image below is the main menu input form display.

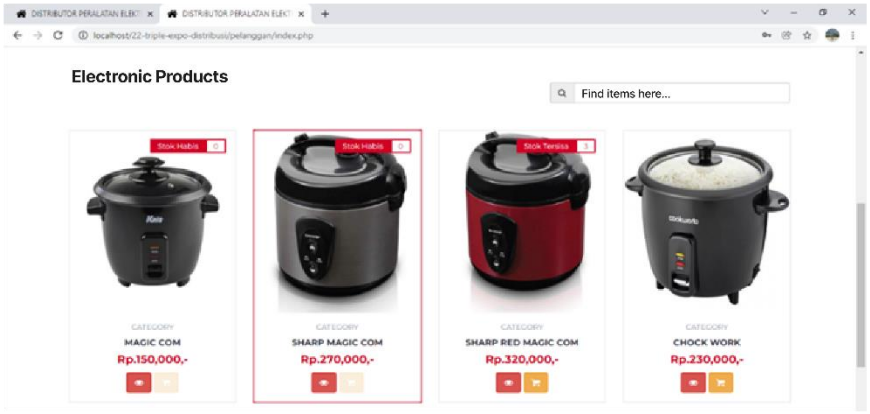

Figure 4 Main Menu Form Input Display

The image below is a display of the product shopping data selection form, when selecting product data the program will display product shopping data. and a form for storing product shopping data.

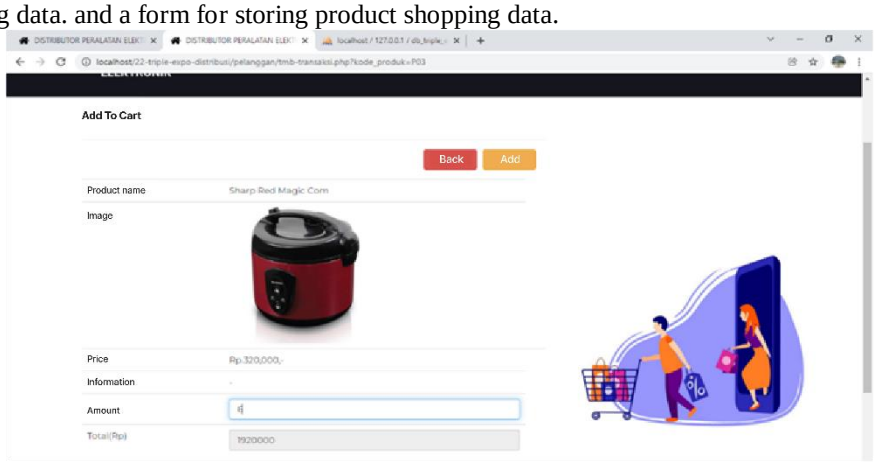

Figure 5 Display Product Shopping Form

The image below is a display of the payment form for storing payment data.

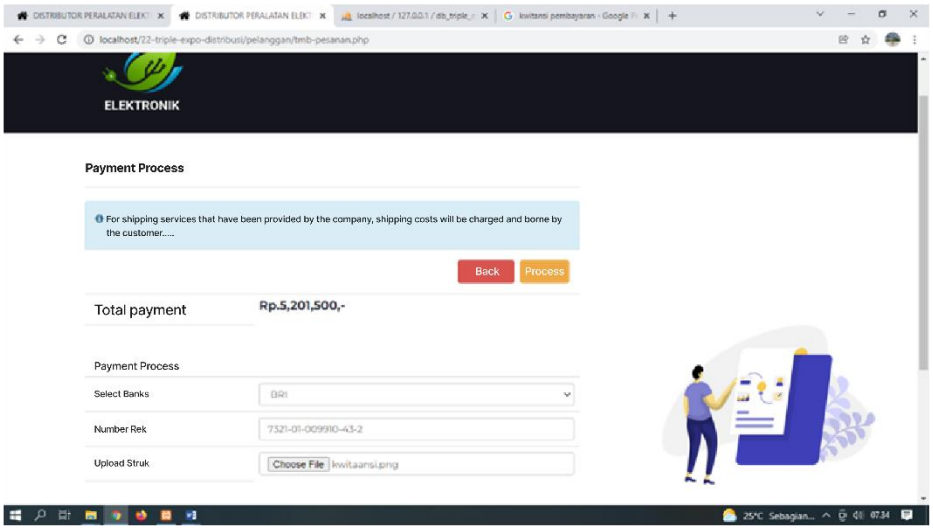

Figure 6 Display Payment Form

The image below is a display of the order detail form for storing order detail data.

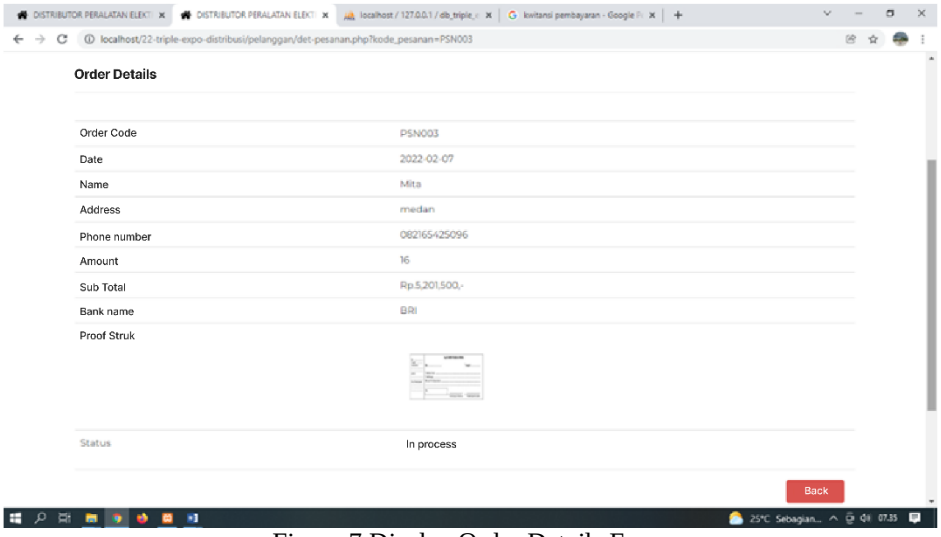

Figure 7 Display Order Details Form

B. Admin

After logging in using an existing account, then enter the order form display page to save the order data.

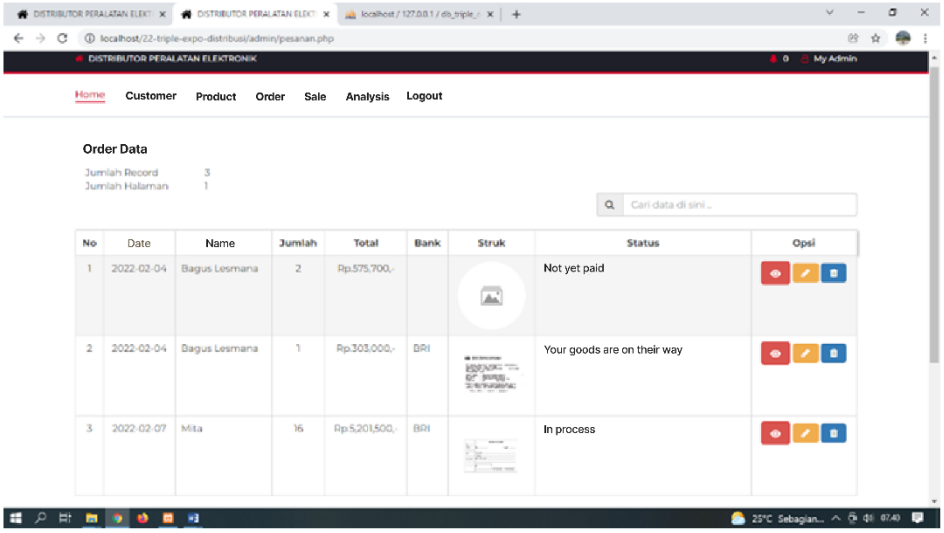

Figure 8 Display Order Form

The image below is a display of the order verification form for adding transactions and storing order verification data.

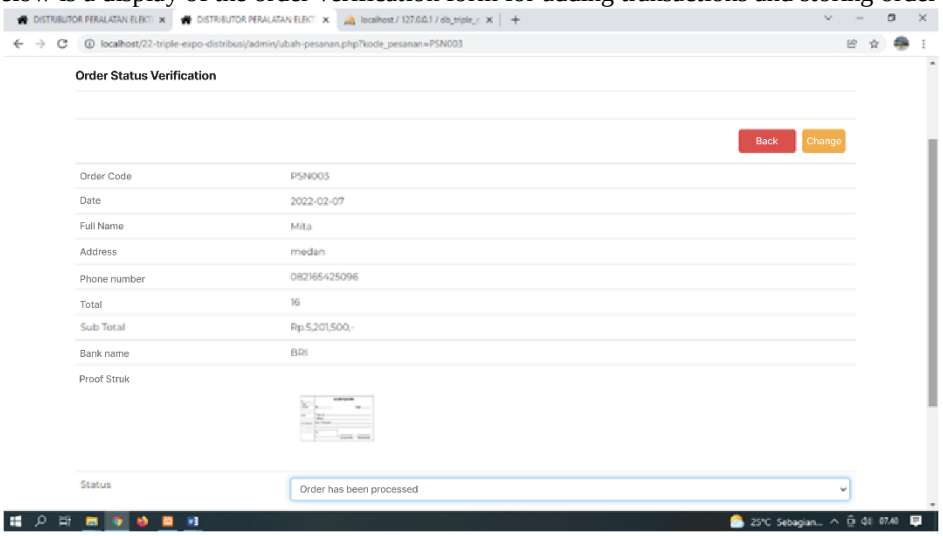

Figure 9 Display Order Verification Form

The image below is the display of the sales form for storing sales data.

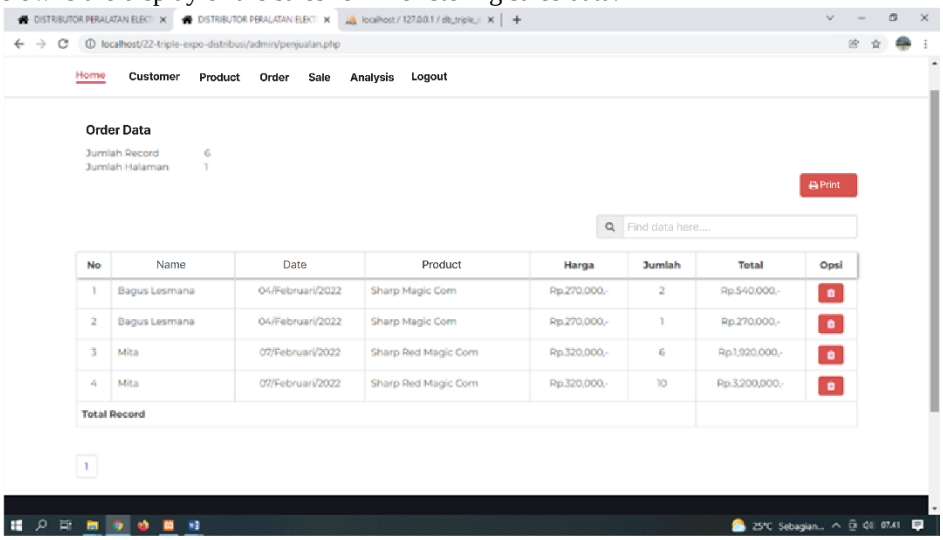

Figure 10 Display Sales Form

The figure below is a display of the output design form. The overall sales report functions to display overall sales data.

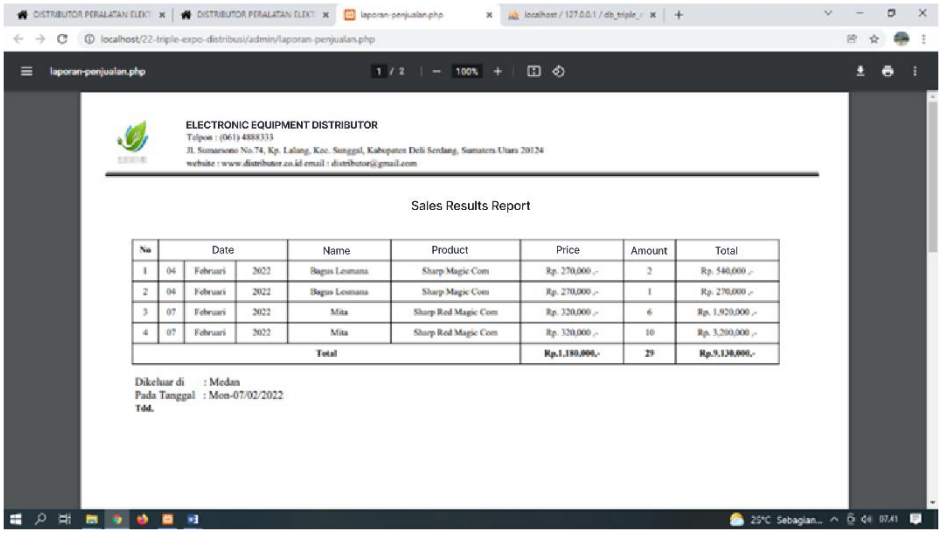

Figure 11 View of the Overall Sales Report Form

The image below shows the form for selecting forecasting data, when selecting forecasting data, the program will display forecasting data and a form for storing forecasting data.

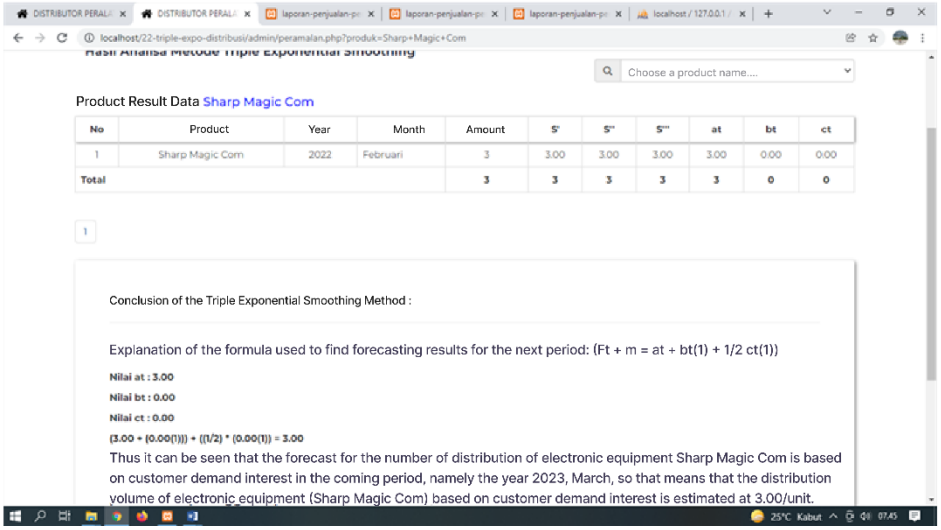

Figure 12 Display Forecasting Form

The image below shows the form for selecting forecasting data, when selecting forecasting data, the program will display forecasting data and a form for storing forecasting data.

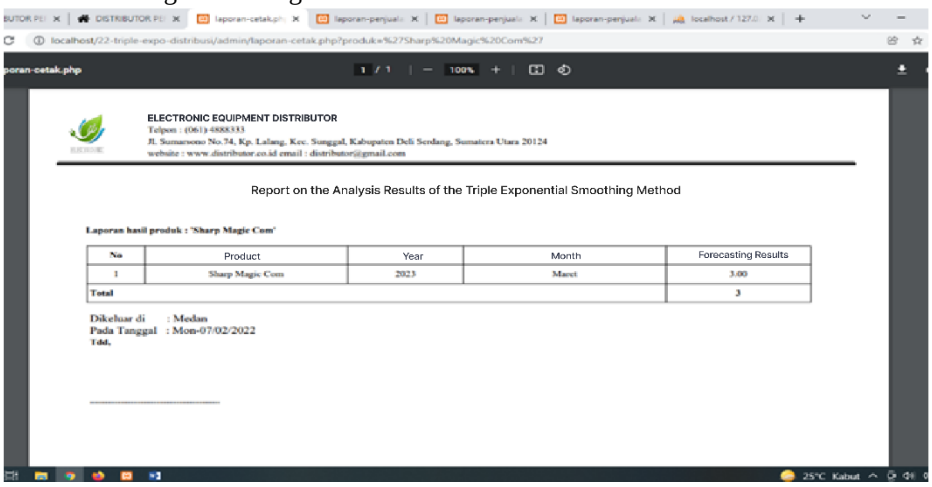

Figure 13 Display of Forecasting Result Form

The image below is a display of the forecasting chart selection form, when selecting forecasting data the program will display a forecasting graph. and a form for storing forecasting graphs.

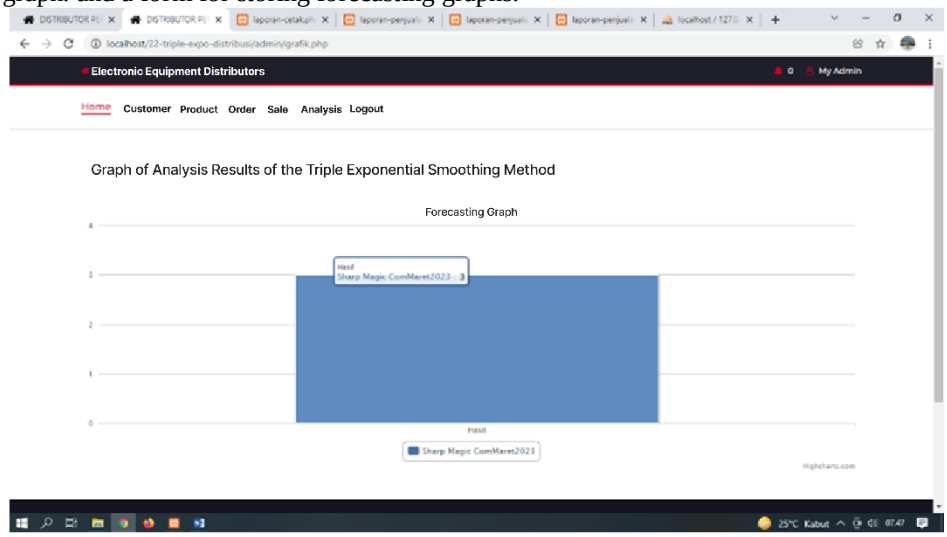

Figure 14 Display of Forecasting Graphic Form

3.3. System Testing

In testing the electronic equipment inventory prediction system based on requests from customers using the Triple Exponential Smoothing method at PT. Wira Dwika uses the Black-box Testing method for testing. The Blackbox Testing method is a method used to test a software without having to pay attention to the details of the software. The Black Box Testing process is by trying the program that has been made by trying to enter data in each form. This test is needed to find out the program is running according to what is required by the company or customer[15]. The following are the results of tests conducted by the author:

Table 3. Test Result

No	Test Scenario	Test Result	Conclusion
1	Main Menu Form Input Display (Customer)	Succeed	Appropriate
2	Display Product Shopping Form (Customer)	Succeed	Appropriate
3	Display Payment Form (Customer)	Succeed	Appropriate
4	Display Order Details Form (Customer)	Succeed	Appropriate
5	Display Order Form (Admin)	Succeed	Appropriate
6	Display Order Verification Form (Admin)	Succeed	Appropriate
7	Display Sales Form (Admin)	Succeed	Appropriate
8	View of the Overall Sales Report Form (Admin)	Succeed	Appropriate
9	Display Forecasting Form (Admin)	Succeed	Appropriate
10	Display of Forecasting Result Form (Admin)	Succeed	Appropriate
11	Display of Forecasting Graphic Form (Admin)	Succeed	Appropriate

4. CONCLUSION

Based on the research that has been conducted by the author, several conclusions are drawn including the following. (1)PT. Wira Dwika can reduce the error rate in determining electronic equipment inventory predictions based on requests from customers and making electronic equipment inventory reports can simplify and speed up users in collecting electronic equipment inventory data. (2)The designed system can assist companies in overcoming obstacles in forecasting inventory based on requests from customers in future periods. (3)The application system for stock forecasting based on requests from customers uses the PHP and Mysql programming languages.

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