

# **DEVELOPMENT OF PRODUCTION MANAGEMENT INFORMATION SYSTEM IN CV RAMKAR FARM HASMILK**

Muhamad Irpan<sup>1</sup>, Riani Lubis<sup>2</sup>

<sup>1,2</sup>Teknik Informatika – Universitas Komputer Indonesia  
JL.Dipatiukur 112-114 Bandung

E-mail : [irvan.cadabra@gmail.com](mailto:irvan.cadabra@gmail.com)<sup>1</sup>, [rianilubis@email.unikom.ac.id](mailto:rianilubis@email.unikom.ac.id)<sup>2</sup>

## **ABSTRACT**

*CV. Ramkar Farm Has milk is a company specializing in the field of food especially processed cow's milk products, CV Ramkar Farm Has milk the production process the company currently does not have clear rules in the determination of the amount of production per product. This makes the production process which is underway at the moment only in the established with the determination of the raw materials exist. The production process such as this makes the stock a product that is in excess of the company always demand that exists. It really makes the loss the company as many products not sold. production manager in this difficulty in determining the number of proroduk would do the production process in karenakan absence of clear rules in the determination of the amount of production per product so that production is being done currently only based on raw materials that exist. Because of the views of the average of the remaining stock of the end of the month which is always excess, the impact of the remainder of the excess products cause a buildup of product. Then based on the problems that exist today in CV Ramkar Farm Has milk that needed a system of informasu production management focusing to foresee the amount of production using a Single Exponential Smoothing to be able to control the amount of production so that is not the case the product buildup.*

**Keywords:** management, production, Single Exponential Smoothing

## **1. INTRODUCTION**

*CV Ramkar Farm Has milk is a company specializing in the field of food processed cow's milk products in particular. In the year 2006 CV Ramkar Farm Has milk began to introduce processed milk products to consumers under the brand name "HASMILK". Based on the results of the interviews in CV Ramkar Farm Has milk with mother Neneng Siti Rahma as the leadership of the company. In the process of production is currently the company does not have clear rules in the determination of the amount of production per product. This makes the production process which is underway at the moment only in the*

*established with the determination of the existence of the raw materials exist.*

*The production process such as this makes the stock a product that was in excess of the company always demand that exists. This is proved by the data the rest of the year 2017 period products from January to December 2017 in May that always happens the existence of residual products in each month. The rest of most product sales occur in Yogurt Flavored Strawberry Bottles, flat Sales as much as the rest of the Flat – 325.1667 (see Appendix A) this very loss making company because there are many products that are not sold. This indicates that production manager still a difficulty in determining the amount of production because of the views of the average of the remaining stock of the end of the month which is always. The impact of the remainder of the excess products cause product buildup.*

*Then based on problems that have been previously mentioned above, the researchers concluded that the management information system of production-focused production amount foreseen for using single exponential smoothing method to be able to control the number of production in order to supply the product buildup does not occur, therefore researchers conducting research initiative under the title "DEVELOPMENT of MANAGEMENT INFORMATION SYSTEM of PRODUCTION in CV RAMKAR FARM HASMILK".*

## **2. The CONTENT of PAPERS**

### **2.1 Company Profile**

*CV. Ramkar Farm Has milk is a company specializing in the field of food especially processed cow's milk products, which was founded in 1970 's which started small-scale dairy farm of approximately 35 people. Later in the year 2000 neneng started following a wide range of training from sukabumi district. The year 2005, he tried to make various preparations of milk open lapanagan new work so can menguarangi unemployment and improve social welfare terutama in the vicinity of the company.*

*In 2006 the event day cooperatives in jampang kulon, Sukabumi CV. Ramkar Farm Has milk are*

starting to introduce processed milk products to consumers with consumption ready brand "HASMILK ' Halal Safe healthy. Yogurt is Has milk food products have a wide range of flavors. CV. Rankar Farm has milk has had a variety of the legality of the various agencies, including the associated SIUP, TDP, NPWP, industry entrepreneur registered mark taxable, Veterinary, security number, BPOM RI, training certificate, certificate of GMP (Good manufacturing practice), P-IRT, permission path BPOM RI, halal assurance system from MUI.

## 2.2 Foundation of Theory

The cornerstone of the theory aims to explain about the theory which is used to build the system as the giver of answers while against the problem formulation are examined. The cornerstone of the theory will be discussed regarding the theory of information system, production management, entity relationship diagrams, data Flow diagrams, single exponential smoothing, databases, HTML, CSS, JavaScript, XAMPP, testing.

### 2.2.1 Basic Concepts of Management

The word management according to Dr. IR. Eddy Soeryanto Soegoto in entrepreneurship become eminent businessman can be interpreted as "the process of planning, organizing, direction, and oversight of the Organization's resources to achieve the objectives of the Organization [1].

The functions of the Management Function in this case is one of the activities that include various types of work that can be digolong in one group so formed the administrative unity. [3]

POAC stands for Management Planning (Planning), Organizing (Organizing), the Actuating (Implementation) and Controlling (Controlling) which is 4 basic management functions are continuously according to Geogre r. Terry form of management as one of the following processes.

#### a. Planning

the decisive activities. as a destination and a subsequent cause of action

#### b. Organizing

Activities that split the job between the members in the Group and make the necessary provisions in the relationship.

c. Actuating an activity that moves a group members to perform the work in accordance with their respective tasks.

#### d. Controlling

An action to be able to adjust between the implementation and planning of set

### 2.2.2 Production management information system

In an enterprise that produces goods, going on an activity process relating to each other, i.e.: [4]

1. the raw material procurement Activities should always be available with enough.

2. implementation of the Activities of the production that includes preparation of machines to process raw materials, preparation of energy production that will do ketja (operator machine), the preparation of all the other production facilities such as electricity, water, and other facilities.

3. the preparation of the results of the Activities of production, semi-finished products, as well as the flow of materials (material handling) within a company can beljalan smoothly.

To ensure the smooth running of the process required should always be the availability of input factors of production, namely in the form of raw material, labor, machinery, electric power, water and so on. The lack of one factor of production that could interfere with the production process. This means that the production process can be terganggu kelancaranannya when one of the factors of production are experiencing a lack or hindrance. Then how to prevent the occurrence of the deficiency is one of the factors of production.

### 2.2.3 Forecasting

Forecasting is so diverse in the time horizon of forecasting, factors that can determine the actual result, type pattern and a variety of other aspects. To the use of such widespread, several techniques have been developed. One of the techniques in forecasting that is a method of Smoothing (Pemulusan). [5]

A noteworthy forecasting stages that must exist in the process of forecasting. There are six phases in the forecasting process, namely: [5]

#### 1. Determine the purpose of prophecy

How perramalan will be used and when forecasting will be needed? This step will give an indication of the level of detail required in the forecasting, the amount of resources (employees, time, cost, and computers) that can be corrected, as well as the degree of accuracy required.

#### 2. Setting a time span

Forecast must indicate the span of time, remember that an accuracy down when a span rises.

#### 3. Select the forecasting technique

#### 4. Acquire, cleanse, and analyze the right data

Received data can be melingkup significant efforts. After acquiring the data may need to be "cleaned up" in order to remove foreign objects and data that are clearly not true before analysis.

#### 5. make a prediction

#### 6. Monitor your Forecast

The forecast should be reviewed to determine if forecasting is done in a way that is satisfactory. If not satisfied, check the method of forecasting, assumptions, data validity, and others. Then, change it according to your needs and prepare a revised forecast.

This type of forecasting can be distinguished based on the scope of the period, and the methods used. [5]

1. Based on the time period, forecasting short term so distinguished as well long term.
2. Based on the spaces in scope forecasting forecasting differentiated into micro and macro.
3. Based on forecasting methods to be used, forecasting differentiated into qualitative and quantitative methods.

Qualitative methods are based against intuition and judgment against the person doing the forecasting than pemanipulasian (processing and penganalisan) historical data is available. Techniques in qualitative methods consists of the Delphi technique, growth curve, Screenwriting, market research, focus groups, etc. [5]

Quantitative methods are based on the manipulation of historical data available to adequately and subjective assessments to intuition or tapa from people doing the forecasting, this method generally is based on an analysis of the statistics.

Quantitative forecasting can be implemented when three conditions are met, the following kondisiknya:

1. information about the circumstances at the time of the then available.
2. The information that can be dikuantitatifkan in the form of numeric data (numbers).
3. It can be assumed that some aspects of the pattern at the time ago will continue to the time will come (called the assumption of continuity).

The most important step is to choose a method of periodic sequence (time series) for proper forecasting is by comparing the type of pattern data, so that the most appropriate method with the pattern can be tested. Data pattern can be differentiated so four types of cyclical and trend, namely: [3]

1. The pattern of Horizontal (H) occurs when data values fluctuate around the average nilai constant. Series such as this is the average value against a stationer, a data pattern can be seen in Figure 21.

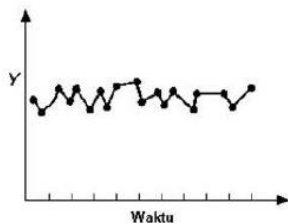


Figure 2.1 Horizontal Pattern

2. The seasonal Pattern (S) occurs when a series is affected by seasonal factors, a certain padatahun quarter semimisal, monthly, or a specific day of the week.

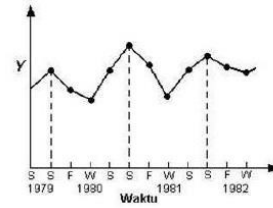


Figure 2.2 Seasonal Pattern

3. the cyclical Pattern (C) which occurs if the data dipengaruhi by long-term economic fluctuations such as related to the business cycle

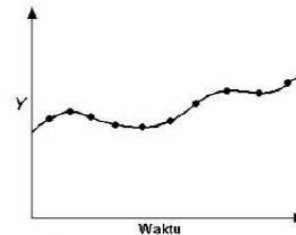


Figure 2.3 Cyclical Pattern

4. Patterns of Trend (T) occurs when there is an increase or decrease in long-term secular in the data.

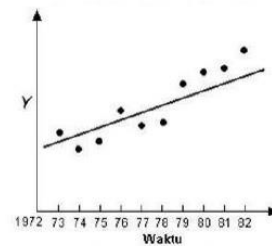


Figure 2.4 Pattern Trend

Forecasting much variety within the time horizon of forecasting, the factors that determine the actual result, type pattern and a variety of other aspects. To deal with such vast users, some techniques have been developed. One of the techniques in forecasting that is a method of Smoothing (Pemulusan). [5]

A method of Smoothing (Pemulusan) in the pemulusan this historical values, random errors in Align-Align to produce forecasting "smooth" that seemed to function well under certain circumstances. A simple case of a Single Exponential Smoothing can be developed from equation (2.1) or more specifically from a variation on the equation that is as follows: [5]

$$F_{t+1} = F_t + \left( \frac{X_t}{N} - \frac{X_{t-N}}{N} \right) \quad (2.1)$$

For example, the observation that old  $X_{t-N}$  none so should be replaced with a value approach (approximations). Be one of the replacements that allows is the value forecast period previously  $F_t$ . By performing this substitution the equation (2.1) into equation (2.2) so that it can be written as (2.6). [5]

$$F_{t+1} = F_t + \left(\frac{X_t - F_t}{N}\right) \quad (2.2)$$

$$F_{t+1} = \left(\frac{1}{N}\right)X_t + \left(1 - \frac{1}{N}\right) F_t \quad (2.3)$$

So the value of forecasting at the time  $t + 1$  Depending on the weighting value of  $t$ , i.e. when the observations and forecast value weighting on the time  $t$  i.e.  $1 - \frac{1}{N}$  a value between 0 and 1. By replacing the  $\frac{1}{N} = a$ . Then it can be calculated with the equation (2.4). [5]

$$F_{t+1} = aX_t + (1 - a) F_t \quad (2.4)$$

Description:

$F_{t+1}$  = The results forecast for period  $t + 1$

$a$  = Smoothing constants

$X_t$  = Actual demand data for the period  $t$

$F_t$  = forecasting in the period  $t$

set freely, which means there is not a sure way to get the optimal value  $a$ . Then  $a$  value selection done by trial and error. The magnitude of  $a$  is between 0 to 1.

### 2.3 Analysis System

System analysis is activities to see a system that is already running or not a good system, then documenting needs that will be met in the new system with the aim to identify and evaluate problems, opportunities, obstacles that occur and the expected needs so that the proposed improvements.

#### 2.3.1 Analysis Problem

Production manager the difficulty determines the number of proroduk the production process will be undertaken in accordance with the needs of companies from the availability of raw materials. Therefore, a proper planning is required to determine the amount of production.

#### 2.3.2 analysis of System running

System analysis of walking is one of the stages to study and evaluate the current system and what the system currently ongoing in CV Ramkar Farm Hasmilk.

##### 2.3.2.1 The Production Procedure Runs

As for the procedure of production activities in CV Ramkar Fram Hasmilk is as follows:

1. Production Manager submit a list of planning production amounts to head production
2. The head of the production report production
3. Head of production laopran production activities provide to employees
4. Employees received a report from the head of production production

5. Employees of the production activities

6. Employees make production

7. Officers provide reports to the head of production production

8. The head of the production received reports of production employees

9. Head checking production production

10. The head of the production give the report manufacturing to the production manager

11. Production Manager production received a report from the head of production

12. Production Manager check the performance of production activities

13. If not match then the production manager to evaluate production

14. If appropriate and are met then the product will be on the submit to the head of marketing

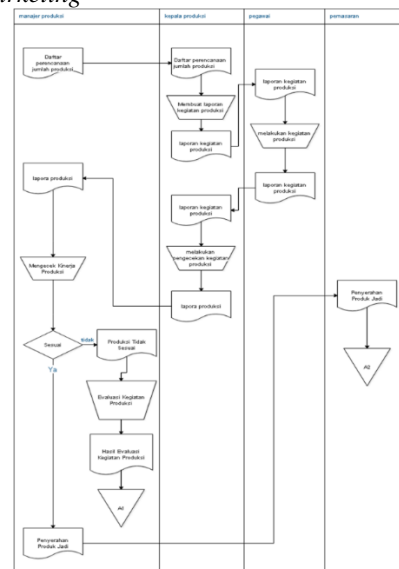


Figure 2.5 Flowmap production procedures

#### 2.3.3 Analysis business rules

##### 1. The Business Activities of production Rules in progress

Business rules for existing production activities in CV Ramkar Farm Hasmilk are as follows:

1. The number of working days in a month is 20 days, the scheme that in doing in one week there are 5 working days, so that in one month which consists of 4 weeks working days to produce as much as 20 times.
2. Production planning every day can change-change
3. The placement of employees on any production work process may change-change according to your needs.
4. the maximum capacity of production to the type of unit the Pack that is as much as 600 with types and variants of different flavors.

5. the maximum capacity of production to the type of Bottle that is as much as 600 units with different types and variants of different flavors.
6. Durability of products with a unit Pack can last up to 5 months in the frozen state.
7. product thickness, with units of the bottle can last up to 7 days in the refrigerator
8. To know the production capacity which can produce company that is by dividing the smallest engine capacity divided by weight or unit of a product.
9. the following is the calculation of the maximum capacity of production per day:

Overall capacity can be calculated based on the capacity of most small engines then divided units of product. The following calculations:

Note:

- 1 Pack = 500 ml
- 1 bottle = 300 ml
- 1 working day = 8 hours or 480 minutes

**Table 2.1 calculation of the maximum capacity of the engine production Unit Pack**

No	Mesin	Jumlah	Kapasitas maksimum produksi
1	Boiled water	4	500ml per menit x4 = 2000ml per menit
2	Tangki pendingin	2	750ml per menit x2 = 1500ml per menit
3	Tangki inkubator	1	650ml per menit x 1 = 650ml per menit
4	Mixer stainless	2	250ml per menit x 2 = 500ml per menit

From table 3.1 above are known for machines with the smallest capacity i.e. inkubator tank engine with a capacity of 1.3 per minute. Then to find out the capacity which can produce company that is by dividing the smallest machines with a weight capacity of 1 packet. The following is the calculation:

$$\begin{aligned}
 \text{Production capacity} &= (\text{the smallest Engine Capacity})/(\text{weight 1 Pack}) \\
 &= (650 \text{ ml/min})/(500 \text{ ml/pak}) \\
 &= 1.3 \text{ Pack per minute} \\
 &\times 480 \text{ minutes} \\
 &= 624 \text{ pak}
 \end{aligned}$$

**Table 2.2 calculation of the maximum capacity of the engine production unit bottle**

No	Mesin	Jumlah	Kapasitas maksimum produksi
1	Boiled water	4	500ml per menit x4 = 2000ml per menit
2	Tangki pendingin	2	750ml per menit x2 = 1500ml per menit
3	Tangki inkubator	1	376ml per menit x 1 = 376ml per menit
4	Mixer stainless	2	250ml per menit x 2 = 500ml per menit

From table 2.2 above are known for machines with the smallest capacity i.e. inkubator tank engine with a capacity of 13 bottles per minute | 650ml permenit. Then to

find out the capacity which can produce company that is by dividing the smallest machines with a weight capacity of 1 bottle. The following is the calculation:

$$\begin{aligned}
 \text{Production capacity} &= (\text{the smallest Engine Capacity})/(\text{weight 1 bottle}) \\
 &= (376 \text{ ml/min})/(300 \text{ ml/botol}) \\
 &= 1.25 \text{ bottles per minute} \\
 &\times 480 \text{ minutes} \\
 &= 600 \text{ bottles}
 \end{aligned}$$

**2. a proposed Business Rules business rules in airline production CV Ramkar Farm Hasmilk are as follows:**

1. production planning calculations use Held method of single exponential smoothing prior to production stages, in order to memenuhui needs.
2. Schedule the production per day according to your needs.
3. daily production scheduling Conditions are not met in the production scheduling is caused, there is a shortage of human resources as well as the delay of raw materials. in the presence of the scheduling delay for each product, it will be in the doing rescheduling the next day where there are a number of productions that have not been met on that day.
4. number of scheduling production Assumptions determined based on business rules that are already underway at this time i.e. as many as 20 working days in a month or 5 working days in a week.

### 2.3.4 Analysis of Management

Analysis of production management In CV Ramkar Hasmik Farm will be described by using the model of the POAC (Planning, Organizing, Actuating, Controlling). Stages of evaluation and assessment model POAC on SIM Production can be explained as follows:

**Table 2.3 POAC Activities**

Production Activities		Result
Number of production planning	Planned number of production based on sales data for 12 months with a Single Exponential Smoothing method of calculation	The number of production for each product in a period of 12 months.
Organizing the processing time (organizing)	Organizing production processing time per day based on the results of the calculation of the amount of production per month.	production schedule per day based on the results of the monthly forecasting.
Production run (Actuating)	Perform a execution of production according to the schedule per day.	The number of finished products in accordance with the scheduling in the specify per day based on the results of the monthly peramplan.
Checking the amount of control the production (Controlling)	Checking the amount of production is already in compliance with the existing planning.	Fulfilled or whether the amount of the product that corresponds to the number of produksi that has been specified.

1. Planning (planning) planning activities the amount of production at this stage involved at the stage of determination of the amount of forecasting production



based on actual data product sales before. Forecasting aims to meet the needs of the market of dairy products, Yogurt, ice milk Ice Yoghurt as sample data are used. Forecasting techniques used are forecasting technique quantitatively. Forecasting amount of production using a Single Exponential Smoothing method in the method are either karenakan sales data as a reference to be used so as to make the production data which dihasilkan correspond to the number of requests that are in the the company is due to availability of data past the quite fulfilled.

**Table 2.4 Sales Recap January 2017 – December 2017**

No	Produk	Periode											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Es Susu Coklat	780	830	841	591	422	106	547	1130	1152	826	578	601
2	Es Susu Strawberry	860	823	834	717	609	81	431	813	745	1420	927	357
3	Es Susu Vanilla	780	495	656	495	248	79	446	656	744	723	719	352
4	Es yoghurt Anggur	2791	1698	2281	1957	2767	1760	2200	3004	2360	2828	1196	1786
5	Es Yoghurt melon	2661	2230	2575	2400	3034	1840	3738	2769	3864	2460	2451	1791
6	Es Yoghurt Strawberry	4074	2961	2496	2786	2962	2085	2961	2943	2731	3036	3101	2144
7	Susu Botol 330 Coklat	218	151	147	107	286	64	72	99	100	116	21	149
8	Susu Botol 330 Plain	211	186	146	234	182	175	183	155	158	86	108	149
9	Susu Botol 330 Strawberry	178	152	164	109	161	111	82	95	54	78	68	194
10	Yoghurt botol 250 coklat	211	186	146	234	182	175	183	155	158	86	108	149
11	Yoghurt botol 250 Plain	901	608	673	277	1024	369	576	499	402	1196	415	331
12	Yoghurt botol 250 Strawberry	211	186	146	234	182	175	183	155	158	86	108	149

Based on the pattern of the data from the sales chart above, then the next stage is to do forecasting by using methods of SES (single exponential smooting). As a sample, here's the calculation of permalan for Yoghurt Strawberry Bottles products as follows:

**Table 2.5 calculation of Forecasting Using the value Alpha 0.1**

Bulan	Penjualan	Nilai Alpha 0.1	MSE
Januari 2017	463		
Februari 2017	560	463	9409
Maret 2017	859	472.2	149227.69
April 2017	898	511.33	149513.68
Mei 2017	910	549.997	129602.16
Juni 2017	686	585.9973	10000.54
Juli 2017	853	595.99757	66050.24
Agustus 2017	688	621.697813	4395.98
September 2017	495	628.32	17776.36
Oktober 2017	146	614.99	219956.52
November 2017	485	568.09	6904.89
Desember 2017	515	559.78	2005.79
Hasil Peramalan Januari 2018		555.30	63756.90

$$F_t = (\alpha * F_{t-1}) + (1 - \alpha) * (X(t))$$

$$F_{Januari} = (\alpha * F_{Desember}) + (1 - 0.1) * X(t)$$

$$= (0.1 * 515) + (0.9 * 559.78)$$

$$= (51.5) + (503.80)$$

$$= 555.30$$

$$= 556 \text{ Botol (Hasil Pembulatan)}$$

After the sales data calculated on the whole from January until December 2017 2017 using the same calculation by the method of single exponential smooting, can be generated permalan for January 2018 the entire product can be seen in table 2.6 are as follows:

**Table 2. 6 Results Forecasting January 2018**

produk	Hasil Peramalan
Es Susu Cokelat	619.77
Es Susu strawberry	628.28
Es Susu vanilla	507.36
Es Yoghurt Anggur	1617.18
Es Yoghurt Melon	1960.04
Es Yoghurt Strawberry	2023.59
Susu Botol 330 Cokelat	222.16
Susu Botol 330 Plain	249.59
Susu Botol 330 Strawberry	222.08
Yoghurt Botol 250 Cokelat	249.59
Yoghurt Botol 250 Plain	547.09
Yoghurt Botol 250 Strawberry	555.30

## 2. Organizing (Organizing)

This step is organizing the time to schedule Production activities in CV Ramkar farm Hasmilk for eligibility and the amount of which will be in production in accordance with the amount of production planning. And here is the result of planning the production of each product per day for the month of January 2018

## 3. Actuating (Implementation)

At this stage of Actuating after doing planning and organizing, then the next stage, namely the stage of Actuating to apply and implement the planned including running the process, produce, and perform data collection and will be used in the Controlling Department. Following are the results of the implementation of the production at the Actuating.

## 4. Controlling (controlling)

Controlling phases i.e. phase for inspection monitoring and re-pemeriksaan as well as studying the results of the application at the stage of implementation. controlling stage performed i.e. compare between the actual results that have been in the can with the goal already specified or planned and also the accuracy of the timetable that has been determined. The following is the process of checking the implementation of production on the first day of the month of January 2018 at Ramkar Farm Hasmilk.

## 2.3.5 Analysis Database

The analysis of the obtained data Base is the data that will be used in the construction of Production management information system in CV Ramkar Farm Hasmilk, then the data obtained good data design built with either using Entity Relationship

Diagrams ( ERD). ERD is a data model that uses some notation to describe the data in the context of the entities and relationships in the data that have been described.

### 2.3.6 Context Diagram

Context diagram is a model that describes in general how the data is used and transformed to a process as well as describe the flow of data into and out of the system. The following diagram context on the production management information system in CV Ramkar Farm

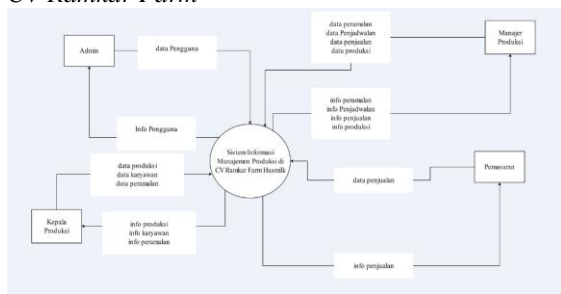


Figure 2.6 Context Diagram of Production management information system

### 2.3.7 Data Flow diagrams

Data Flow diagrams (DFD) explains how a data flow outlines the processes that terjadi in a system until the process in more detail. Following DFD level 1 management information systems on production in the CV ramkar Farm there are image 2.7

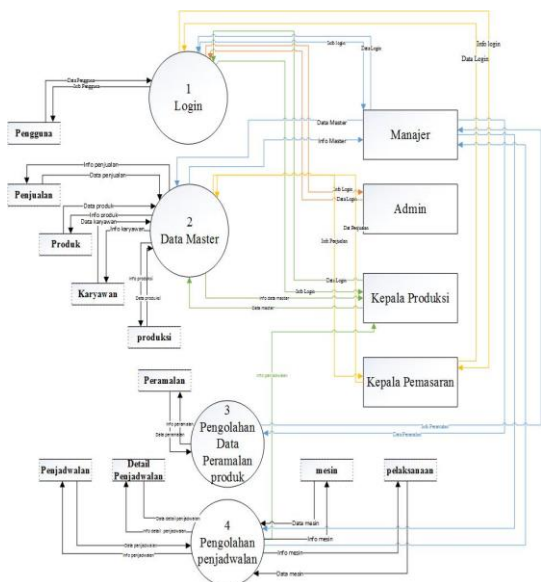
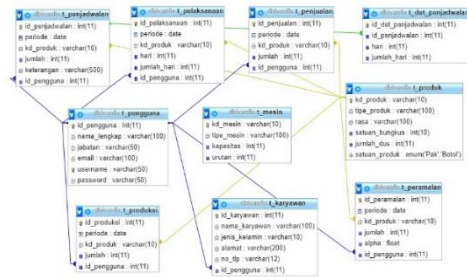


Figure 2.7 DFD Level 1 management information systems on Production CV Ramkar Farm Hasmilk

### 2.3.8 Relation Scheme

Diagram of Relation Scheme for production management information system In CV Ramkar Farm Hasmilk. Here is a sample image of the relation scheme existed at the company Ramkar Farm Hasmilk:

Figure 2.8 the scheme of management information System of production Relations in CV Ramkar Farm Hasmilk



### 2.3.9 Designing Interfaces

The design of the interface was created to make it easier to make a picture display program that will be used by the user for interaction with the system to be built. The design is based on the look of the interface to be generated at the time of program management information systems implemented in Production. Here is the design of the interface in a production management information system in CV Ramkar Farm Hasmilk

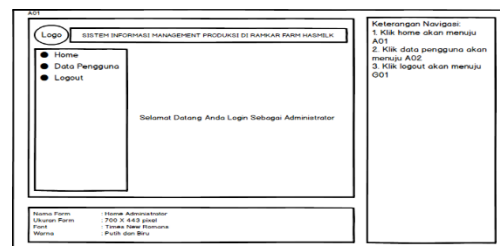


Figure 2.9 Designing Interfaces In Ramkar Farm Hasmilk

### 2.3.10 Testing System

System testing is the most important thing in software development. The purpose of testing the system to find the mistakes and deficiencies in the software tested and to know whether data input in accordance with what is required to fulfill the purpose of software development such.

#### 1. Testing Balck Box

Testing with Black Box testing, by means of the software in terms of functional specification on without testing the design and source code of the program. Black box testing to find out if the function, input, and output of software fits with the needs of the user

#### 2. Beta testing

He did beta test aims to find out how far the quality of software that is built, is it according to your needs or does not comply with the requirement. Therefore, for beta testing done by giving researchers a question on candidates software users.

### 3. CLOSING

### **3.1 Conclusions**

*Based on the results obtained from the construction of this system, then have been able to draw the conclusion that this production management information systems can run according to the purpose, namely as follows:*

*Simplify production manager in determining the amount of the product to be manufactured with either single exponential smoothing method to suit the needs of the company as well as with a number of existing demand.*

### **3.2 Advice**

*As for the advice obtained after conducting interviews with users of the system. The following suggestions for the management information system of production on Ramkar farm hasmilk:*

*Use of methods developed need to be better and accurate determination of the amount of planning in the production in accordance with the request.*

## **BIBLIOGRAPHY**

- [1] D. I. E. S. Soegoto, *Entrepreneurship Menjadi Pebisnis Ulung*, Jakarta: PT. Elex Media Komputindo, 2009
- [2] Tata Sutari, S.Kom.,MMSI, *Sistem Informasi Manajemen*. Yogyakarta : CV ANDI OFFSET
- [3] Drs, H.Melayu S.P. Hasibuan, *Manajemen Dasar, Pengertian, dan Masalah*, Jakarta : PT TOKO AGUNG
- [4] Drs.Suyadi Prawirosentono, MBA, *Manajemen Operasi Analisis dan Studi Kasus*, Jakarta : Bumi Aksara,2000
- [5] Markidakis, S, Wheelright, S.C,Mcgee,V.E, 1999, *Metoda dan Aplikasi Peramalan*. Jakarta : Erlangga
- [6] Simarmata. Janner, *Perancangan Basis Data*, Yogyakarta: Andi, 2007
- [7] Rosa A. S & M. Shalahuddin, *Rekayasa Perangkat Lunak Terstruktur dan Berorientasi Objek*, Bandung: Informatika, 2016
- [8] Frederick Constantantianus & Bernard Renaldy Suteja *Analisis dan Desain Sistem Bimbingan Tugas Akhir Berbasis Web dengan Studi Kasus Fakultas Teknologi Informasi*.
- [9] Solichin Achmad, *Pemograman Web dengan PHP dan MySQL*, Jakarta: Universitas Indonesia, 2010.
- [10] Kristanto, Andri. 2008, *Perancangan Sistem Informasi dan Aplikasinya, edisi revisi*. Yogyakarta: Gava Media.
- [11] Simarmata, Janner. 2010, *Rekayasa Perangkat Lunak*. Yogyakarta : Andi