

MARA UNIVERSITY OF TECHNOLOGY

Web-Based Salary System for Palm Oil Estate Farmer



Thesis submitted in fulfillment of the requirements for
Bachelor of Science (Hons) Information Technology
Faculty of Information Technology And
Quantitative Science

2005

APPROVAL

Name of Candidate: Azahari bin Abdul Aziz

Title of Thesis: Web-Based Salary System for Palm Oil Estate Farmer

Approved by:

Puan Natrah binti Abdullah
(Supervisor)

Date:

DECLARATION

I certify that this thesis and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

NOVEMBER 21, 2005

AZAHARI BIN ABDUL AZIZ

20002610039

ABSTRACT

This Salary System is basically the system that is built to manage the salary at a Felda. This system allows user to view, add, delete and update information about their salary. The target users for this system are palm oil estate farmers, staff and manager. Every user has different roles in this system. Palm oil estate farmers only can view their salary system. Meanwhile, staffs only use it to key in data and view farmers' statistical salary analysis. Manager or administrator has the power to change anything about the data in the system. This system is focusing on the salary system for Felda Kemasul. This system is built as a web-based system that can be access online. This system is developed based on human computer interaction. "PHP: Hypertext Preprocessor" as the programming language, MySQL is selected as the database and Apache as the web server. This system provides updating of information and retrieving of data and in an efficient manner and less time consuming. This system is hopefully can manage the flow of salary smoothly.

ACKNOWLEDMENT

In the name of Allah, Most Gracious, Most Merciful. Praise to Allah, the one and only, for giving strength to complete this project.

First of all, I would like to take this golden opportunity to express my deeply gratitude to my supervisor, Puan Natrah binti Abdullah for her guidance, advice, valuable suggestion, encouragement and moral supports throughout the completion of this project. Special thanks also to my project coordinator, Puan Zaidah binti Ibrahim, for her teaching and guidance. I also want to thank my all respondent who had been answered all questionnaires that I gave them. Their cooperation is very important to my survey and data analysis.

I like to extend my sincere thanks to my family, for their support and encouragement throughout my project. There is also a very special thanks to all my friends for their support and those who were involved directly or indirectly in helping me to complete this project.

Thank you very much.

TABLE CONTENTS

CONTENTS	PAGE
APPROVAL	ii
DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xiii
LIST OF ABBREVIATIONS	xiv
LIST OF APPENDIXES	xv
CHAPTER I	
INTRODUCTION	1
1.1. Introduction	1
1.2. Project Background	1
1.3. Background of problem	2
1.4. Problem Description	3
1.4.1. Farmers Perspective	3
1.4.2. Organization Perspective	3
1.5. Problem Scope	10
1.6. Project Objective	10
1.7. Project Significance	10
1.8. Project Benefits	11
CHAPTER II	
LITERATURE REVIEW	12
2.1 Introduction	12
2.2 Description of Current Salary System Management Problems	12
2.3 Definitions of Pertinent Technical Terminologies	13

2.3.1	Online System	13
2.3.2	PHP	14
2.3.3	MySQL	15
2.3.4	Apache	16
2.4	Approach Used to Solve Online Salary System Problem	17
2.4.1	Human Computer Interaction	17
2.5	Different Approach Used to Solve the Similar Problem	22
2.5.1	Salary and Wage (SAW) System	22
2.5.1.1	VM operating system	23
2.5.1.2	COBOL	23
2.5.2	E-salary	24
2.5.2.1	Secure Sockets Layer (SSL)	24
2.6	Brief Description of All Known Similar and Relevant On-Going Projects	25
2.6.1	Electronic Pay Advise System	25
2.6.2	Ohio State's Paperless Pay System	25
2.6.3	Salary Analysis Management System (SAMS) and the Payroll System	26
2.6.4	e-Payroll Project	27
CHAPTER III		
METHODOLOGY		
3.1	Introduction	28
3.2	Waterfall Model Methodology	28
3.3	Waterfall Model Phase	29
3.3.1	Requirement Analysis and Definition	29
3.3.1.1	Requirement Definition	29
3.3.1.2	Requirement Analysis	30
3.3.1.2.1	Data Collection	31
3.3.1.2.1.1	Interviews	31
3.3.1.2.1.2	Questionnaires	31
3.3.1.2.1.3	Observation	33
3.3.1.2.2	Data Analysis	33

3.3.1.2.2.1 User Perspective	34
3.3.1.2.2.2 System Perspective	37
3.3.2 System Design	37
3.3.2.1 User Interface Design Principle	38
3.3.3 Implementation	39
3.3.4 System Testing	40
3.3.5 Operation and Maintenance	40
3.4 The Advantages of Using Waterfall Model	40
3.5 Solution for Problem	41
CHAPTER IV	
SYSTEM DESIGN	43
4.1 Introduction	43
4.2 Design Structure of Online Salary System	43
4.2.1 Structure of Farmer	43
4.2.2 Structure of Staff	44
4.2.3 Structure of Manager	45
4.3 Unified Modeling Language (UML) Approach	45
4.4 Database Design	49
4.4.1 The Brief Description for each table on Online Salary System	49
4.4.2 Table Structure of Online Salary System Database	50
4.5 Interface Design	58
4.5.1 Screen Structure Hierarchy	59
4.6 Hardware and Software Requirement	60
CHAPTER V	
IMPLEMENTATION	61
5.1 Introduction	61
5.2 Interface Design	61
5.2.1 Main Menu Screen	61
5.2.2 Screen menu for farmer	63

5.2.3	Screen menu for staff	70
5.2.4	Screen menu for manager (Administrator)	78
5.3	Result	95
5.4	Constrains and Discussion	95
5.4.1	Constrains	96
5.4.2	System Strengths	96
5.4.3	System Weaknesses	96
CHAPTER VI		
CONCLUSION AND RECOMMENDATION		97
6.1	Introduction	97
6.2	Conclusion	97
6.3	Recommendation	98
REFERENCES		100
APPENDIX A		105
APPENDIX B		110
APPENDIX C		112

LIST OF TABLES

Table Number	Page
Table 3.2: Summary of the demographic questionnaires	34
Table 3.3: Demographic distribution based on gender and required for system changing	34
Table 3.4: Demographic distribution based on age and required for system changing	34
Table 3.5: Demographic distribution based on status and required for system changing	35
Table 3.6: Demographic distribution based on time stayed in FELDA and required for system changing	35
Table 3.7: Demographic distribution based on education level and required for system changing	35
Table 3.8: Demographic distribution based on knowledge about computer and required for system changing	36
Table 3.9: Demographic distribution based on subject and factor	36
Table 3.10: Demographic distribution based on test and effect	36
Table 4.1: Salary system table	50
Table 5.1: Descriptions of identification screen	62
Table 5.2: Descriptions of news or announcement screen	64
Table 5.3: Descriptions of submit problem screen	65
Table 5.4: Descriptions of view salary screen	67
Table 5.5: Descriptions of statistical analysis screen	68
Table 5.6: Descriptions of statistical analysis screen	69
Table 5.7: Descriptions of key in data screen	71
Table 5.8: Descriptions key in data for overall salary screen	72
Table 5.9: Descriptions key in data for deduction screen	73
Table 5.10: Descriptions key in data for deduction screen	75
Table 5.11: Descriptions changing password screen for staff	76
Table 5.12: Descriptions user profile screen that can view by staff	77
Table 5.13: Descriptions check user complain screen	79

Table 5.14: Descriptions view user complaint screen	80
Table 5.15: Descriptions regular deduction screen	81
Table 5.16: Descriptions regular deduction screen	82
Table 5.17: Descriptions report for overall salary	84
Table 5.18: Descriptions report for overall salary	86
Table 5.19: Descriptions update user profile screen	88
Table 5.20: Descriptions update news screen	89
Table 5.21: Descriptions update new user screen	90
Table 5.22: Descriptions update password screen for manager	92
Table 5.23: Descriptions enter farmer profile screen	93
Table 5.24: Descriptions enter staff profile screen	94

LIST OF FIGURES

Figure Number	Page
Figure 1.1: Diagram for the current system	3
Figure 1.2: Print screen for log in	5
Figure 1.3: Print screen for main menu	6
Figure 1.4: Print screen for related system	7
Figure 1.5: Print screen for first screen in payroll system	8
Figure 1.6: Print screen for data entry	9
Figure 3.1: Waterfall Model for Methodology	28
Figure 3.2: TAMs Model for questionnaires	32
Figure 3.3: Design process model	38
Figure 3.4: Propose system structure	41
Figure 4.1: Design structure of farmer	43
Figure 4.2: Design structure of staff	44
Figure 4.3: Design structure of manager	45
Figure 4.4: Use case for user registration	46
Figure 4.5: Use case for salary information	46
Figure 4.6: Use case for problem information	47
Figure 4.7: Use case for announcement	48
Figure 4.8: Use case for changing password	49
Figure 4.9: Table structure for “aduan”	50
Figure 4.10: Table structure for “berita”	51
Figure 4.11: Table structure for “hasil”	52
Figure 4.12: Table structure for “patut_potong”	53
Figure 4.13: Table structure for “pot_tetap”	54
Figure 4.14: Table structure for “potong semasa”	55
Figure 4.15: Table structure for “potong_tunggak”	56
Figure 4.16: Table structure for “profil”	57
Figure 4.17: Table structure for “tunggak”	58
Figure 4.18: Screen structure hierarchy	59

Figure 5.1: User identification screen	62
Figure 5.2: News or announcement screen	63
Figure 5.3: Submit problem screen	64
Figure 5.4: View salary screen (1)	65
Figure 5.5: View salary screen (2)	66
Figure 5.6: Statistical analysis screen	67
Figure 5.7: Change password screen	68
Figure 5.8: Key in data screen	70
Figure 5.8: Screen for calculate net salary	69
Figure 5.9: Key in data for overall salary screen	71
Figure 5.10: Key in data for deduction screen	72
Figure 5.11: Key in data for irregular deduction screen (1)	73
Figure 5.12: Key in data for irregular deduction screen (2)	74
Figure 5.13: Changing password screen for staff	75
Figure 5.14: User profile screen that can view by staff	76
Figure 5.15: Check user complaint screen	78
Figure 5.16: View user complaint screen	79
Figure 5.17: Regular deduction screen	80
Figure 5.18: Regular deduction screen	81
Figure 5.19: Report for overall salary (1)	83
Figure 5.20: Report for overall salary (2)	83
Figure 5.21: Update record screen by manager (1)	85
Figure 5.22: Update record screen by manager (2)	85
Figure 5.23: Update user profile screen	87
Figure 5.24: Update news screen	88
Figure 5.25: Update new user screen	89
Figure 5.26: Update password screen for manager	91
Figure 5.27: Enter farmer profile screen	92
Figure 5.28: Enter staff profile screen	93
Figure 5.29: Report for salary system	95

LIST OF ABBREVIATIONS

DOS	Disk Operating System
PHP	Hypertext Preprocessor
MySQL	Multi-threaded (Structured Query Language)
RDBMS	Relational Database Server
GPL	General Public License
LAMP	Linux, Apache, MySQL, PHP/Perl/Phyton
GUIs	Graphical User Interfaces
SAW	Salary and Wages System
COBOL	Common Business Oriented Language
SSL	Secure Sockets Layer
IVR	Voice Response System
SSN	Social Security Number
SAMS	Salary Analysis Management System
SPSS	Statistical Package for Social Sciences
UML	Unified Modeling Language

LIST OF APPENDIXES

APPENDIX

- A Questionnaire**
- B Interview Question**
- C Gantt Chart (Project Plan)**

CHAPTER I

INTRODUCTION

1.1 INTRODUCTION

As the world has moving towards the Internet and technology era, all of the industries have started to upgrade their performance using the computer and technology. The salary system is important in terms of preparations for the planned reform of the public service salary system aimed at assigning more responsibility and powers of decision to the heads of agencies. The ability of an organization to sustain the delivery of quality products and services is essential to its long-term success. Salary system is a computer programming which can calculate the net salary for a person.

1.2 PROJECT BACKGROUND

This project basically designs for solving salary management in felda by replacing current Disk Operating System (DOS) System with Online Salary Management System. A web site is developed to help user to manage their activity. The focus of this project is the salary calculation for palm oil estate farmers. This system will be used by staff and manager to manage farmers' salary. Besides view the salary by farmers, the system also can view the decision analysis and statistical analysis about the salary for each of the farmers. By using this new method of salary, hopefully farmers will encourage to manage their salary in the best of way. This system is design only for the use of palm oil estate farmers of Felda Kemasul and they have an authority to view the web site only.

In Malaysia recently as far as we know, there is still new in online system that design for managing salary. This type of information system is quite popular at other country especially United State. Many of their big organization apply this information system for their salary management system.

The issue and problem that always rise during current salary management such as difficulty to link each other weather staff, manager or farmers. Besides it takes a lot of

time and using many workers just to calculate the salary .The interface also is not interactive as good as possible. This salary system perhaps will solve the problems.

1.3 BACKGROUND OF THE PROBLEM

Felda Kemasul is one of the felda in Malaysia. From my observation through out several years at my hometown (Felda Kemasul), there are something must be change through their salary system. As the world has moving towards the Internet and technology era, all of the industries have started to upgrade their performance using the computer and technology. Although the farmers have lowest education level but if they are trained, they can do better than before. Prime minister also suggested that one home one compute. So, we can bring information technology in their life through this channel.

From the management of salary system, the system is still in the old fashion. They use DOS System which only black and white in color. Besides, they have to print report and give to the manager when manager ask for it. So, it takes time to do that task. The problem rises here are:

- Not everybody will get the new information because of may be the notice board is noticed by manager at office. As the result farmers will not get to know about the event.
- Sometimes, farmers have something to ask about their salary but they did not know to whom they should ask.
- Manager also can check how effective their staff in make solution to the problems.

Salary payment is conducted every month. Currently the payment processes are done at office. When the farmers want to take their salary, they have to come to the office and crowded to see their pay slip before taking their salary. This process of registration is time consuming and manager face problem in handling the crowded in the office, since all the farmers come to take their salary. New salary system is required to overcome problems exist and increase the efficiency.

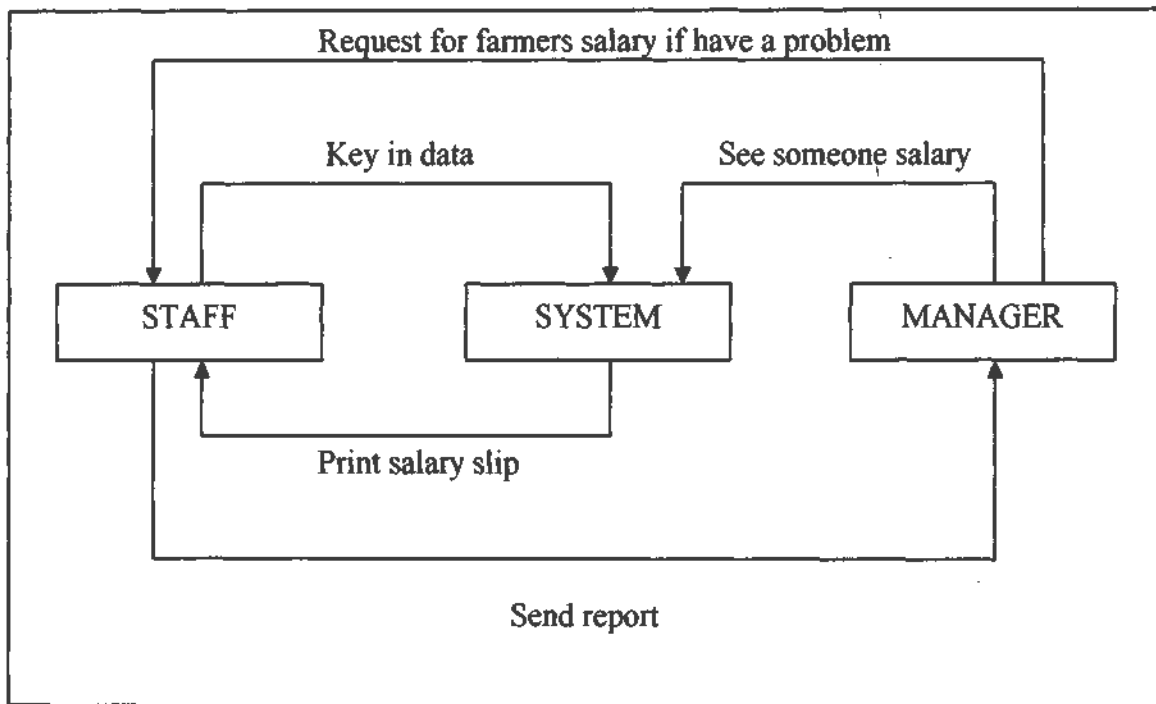


Figure 1.1: Diagram for the current system.

1.4 PROBLEM DESCRIPTION

Below are the problem descriptions from farmers and management perspective (staff and manager).

1.4.1 Farmers Perspective

From the farmer perspective, they find hard when:

- The time for their salary – they have to go to the office to see their salary.
- To see the latest news – everything latest news on the board at the office.
- To tell their confusion about salary – they also have to go to the office.

1.4.2 Organization Perspective

The current system for salary system is DOS System and stands alone. Besides, the background color is black and white. Then, there was few optional buttons in the system. User also much using keyboard than mouse.

Here, are some user requirements for the new system:

- provide a good system framework for an effective and efficient management control.
 - ensuring all inter-company billing is automatically done from a single source of entry.
- provide up-to-date information for performance measurements and strategic decision making.
 - the ability to ensure effective budget and expenditure control at individual and group company level.
- provide a more user- friendly interface design
 - to increase the productivity of the staff.

Mr. Wan Mazlan Wan Abdullah (personal communications, September 18, 2000).

Figure 1.2 to 1.6 illustrates the example of the current system:

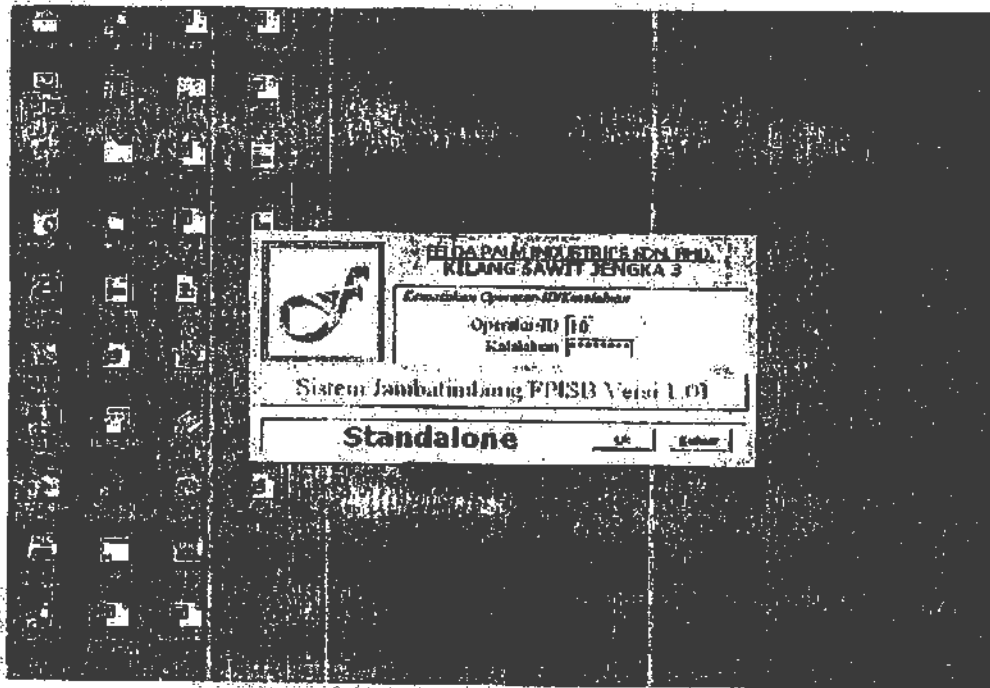


Figure 1.2: Print screen for log in

- Id and password enter by user by click Enter or OK.
- Password for every user will determine in a period of time. If password ended, user must create a new password.
- The system is standalone.
- The background color for the system is black and white.

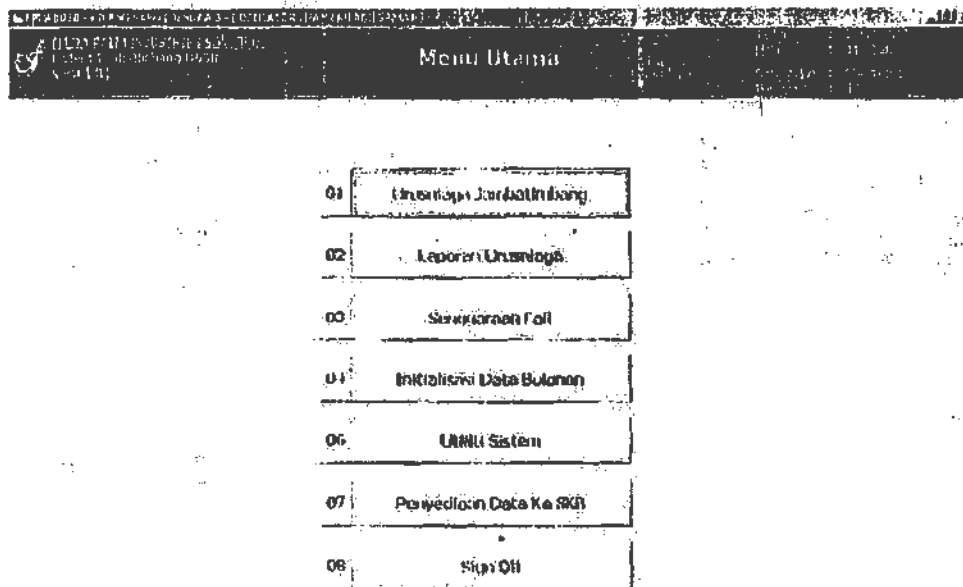


Figure 1.3: Print screen for main menu

- This is main menu for the system.
- It use Arrow and Enter for choice.
- Background is black and white in color.

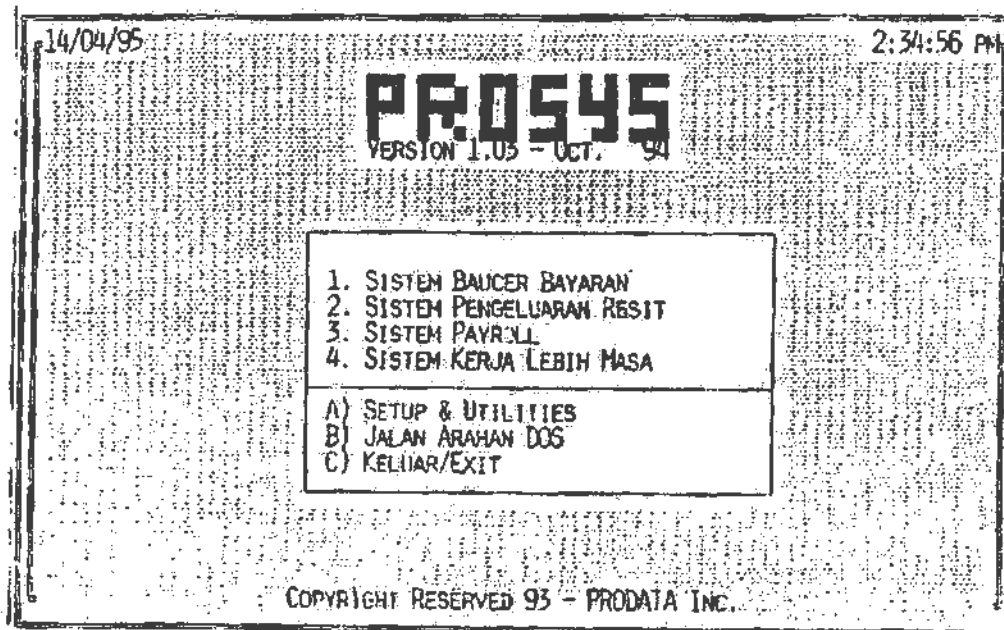


Figure 1.4: Print screen for related system

- Another system related to this system located here.
- The system use Arrow and Enter for choice.
- Background color is black and white.

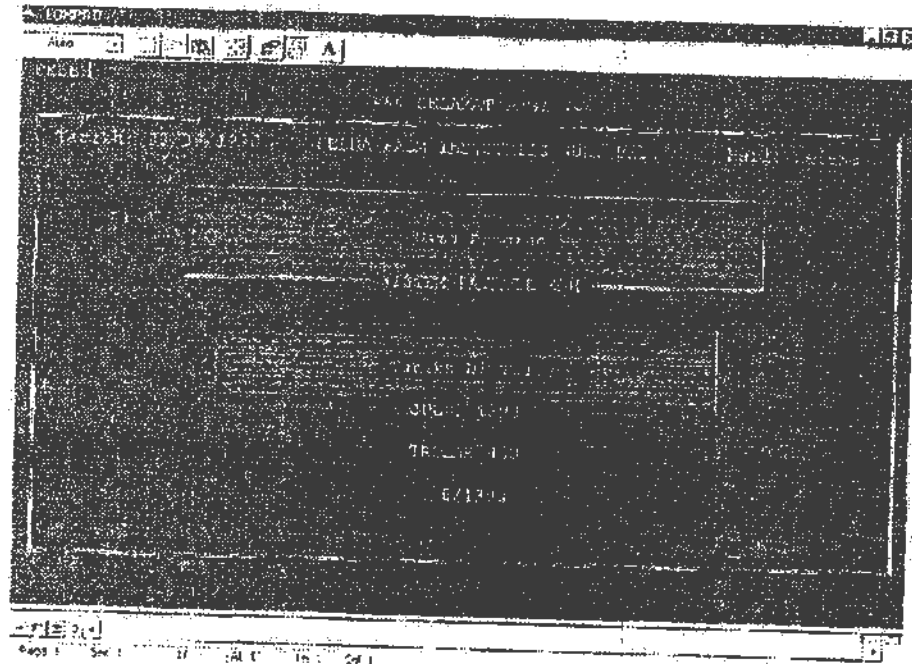


Figure 1.5: Print screen for first screen in payroll system

- System will start if user type CD KBH at C:\ (C Prompt).
- User must enter their password before enter the system.
- Password limited to 6 characters only.
- Button ENTER will use for password correction.
- Button F10 will use to terminate the system.

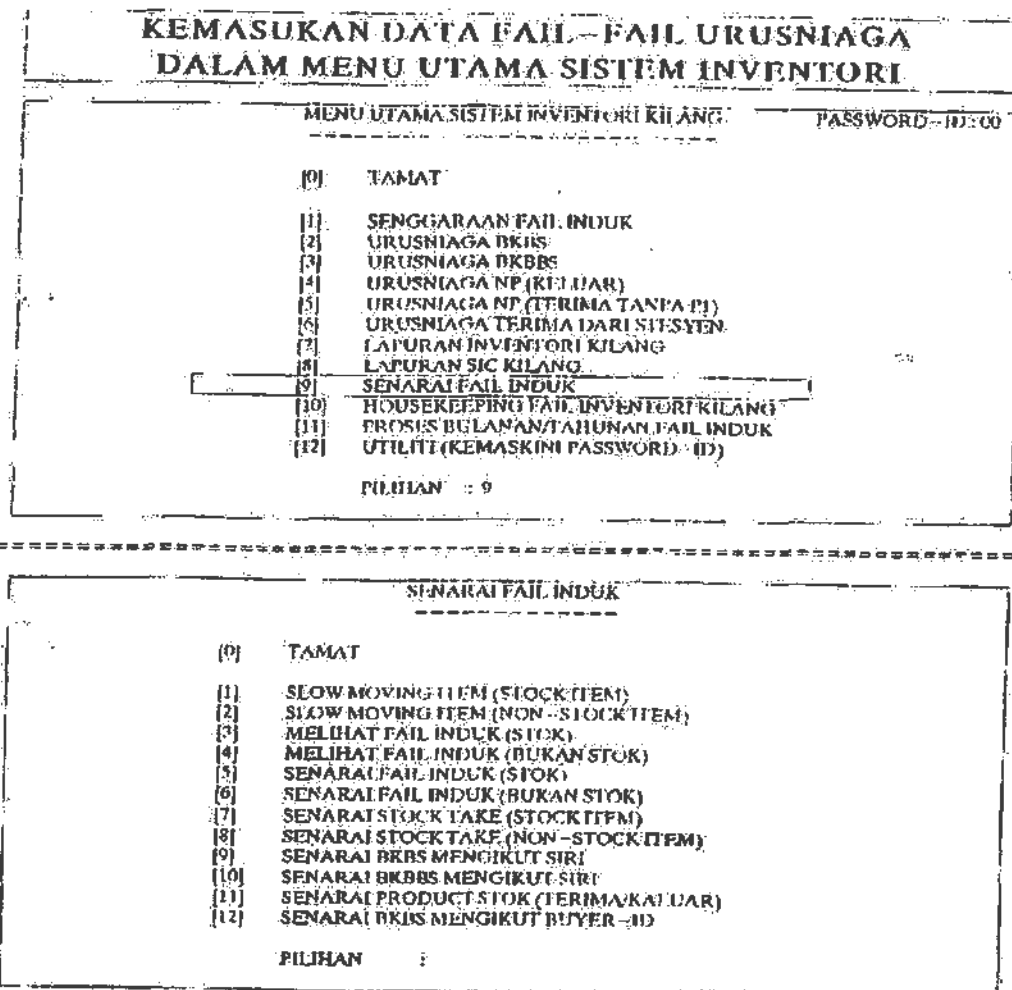


Figure 1.6: Print screen for data entry of business files in inventory system.

- From this menu, staff will select a task from these menus by pressing the numbers given or press the scroll down and scroll up key.
- When the staff presses the enter key, a screen for data entry will appear. This screen allows the staff to key in data of farmers and factories.