BORANG PENGESAHAN STATUS TESIS^

JUDUL: FRONT END EMPLOYMENT SYSTEM

SESI PENGAJIAN: 2006

Saya

NORFARIZA BT. SHAHARUDIN SHAH

(HURUF BESAR)

mengaku membenarkan tesis (PSM/Sarjana/Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

- 1. Tesis adalah hakmilik Kolej Universiti Teknikal Kebangsaan Malaysia.
- 2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
- Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
- _____ SULIT (Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA

 RASMI
 1972)
 TERHAD (Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

 TIDAK TERHAD

(TANDATANGAN PENULIS)

Alamat tetap: No.41, ULU CHEPOR

4. ** Sila tandakan (/)

TAMBAHAN, 31200 CHEMOR, PERAK

Tarikh: 27/4/06

(TANDATANGAN PENYELIA)

PROF. MADYA SHAHDAN BIN MD. LANI
Pengarah

Pusat Jaminan Kualiti & Akreditasi Kolej Universiti Teknikal Kebangsaan Malaysia

Nama Penyelia

Tarikh: 27/4/06.

CATATAN: ** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa.

^ Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

raf

QA76.64 .N67 2006



0000039114
Front End Employment System / Norfariza Shaharudin Shah.

FRONT END EMPLOYMENT SYSTEM

NORFARIZA BT. SHAHARUDIN SHAH

This Report Is Submitted In Partial Fullfilment of The Requirements For The Bachelor Of Computer Science

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA 2006

DECLARATION

I hereby declare that this project report entitled FRONT END EMPLOYMENT SYSTEM

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT :	Jung	Date: 27/04/06	
	(NORFARIZA BT. SH.	AHARUDIN SHAH)	
SUPERVISOR :	Almojn.		,6
	(PROF. MADYA SHAI	HDAN B. MD LAND	

ACKNOWLEDGEMENTS

Firstly, with the best effort to address my appreciation on the contribution of all individual and parties involved directly or indirectly, I would like to thank my supervisor Prof. Madya Shahdan b. Md Lani for his invaluable and justified reasoning and suggestions that opened my eyes to a greater extent on the unexplored aspect of the field of my research.

Another big thank you to all the staff of TESCO Front End Department for offering such a wonderful and friendly support which aided in my research. I also would like to thank my beloved family (En. Hj Shaharudin Shah B. Kamaruddin, Norziah Bt. Hashim, Shazlin Azni Bt. Shaharudin Shah and Ahmad Firdaus B. Shaharudin Shah) who were always there for me when I had a problem during PSM.

To my beloved friends I would like to say thank you for always being there helping, supporting and sharing the problem throughout PSM. Thank you once again.

ABSTRACT

Front End Employment System (FEES) is a standalone system that effective for group front end management. FEES provide time, attendance and front end management solution for TESCO Front End Department that includes clock in/out order for attendance and short break, task scheduling, emergency leave application and standard report. There are a few of main objective to achieve such as to have an effective and efficiency Front End Employment System at Front End Department eliminate buddy punching, reduces paper usage, quickly produce report, provide accurate data collection and real-time visibility. Scope for this project is all data can be added, updated and deleted, contain menu option to collect employee time attendance and short break data, verification of employee data and checks the schedule and also allows collecting data using labor tracking menu which to keep track of employee time, exception, absence and emergency leave. This system allows work places that require time stamping information to operate more efficiently and accurately by preventing falsified time entry information. FEES using Object - Oriented methodology to build this system. Using a coordinated fashion called Unified Modeling Language (UML), it can apply the object oriented and convert it into code. Generally, this methodology separates into two phases which are analysis and design phases. The advantages of using this system are widespread public acceptance, convenience and reliability. It's also can save the time. The focused in developing this system is the Front End management can rest assured that clocking in/out times accurately reflects employee actual times.

ABSTRAK

Front End Employment System (FEES) merupakan sistem 'standalone' yang begitu efektif didalam pengurusan bahagian Front End. FEES menyediakan masa, kedatangan dan penyelesaian didalam bahagian pengurusan Front End, TESCO yang berfungsi untuk mendaftar kedatangan dan keluar/masuk di waktu rehat, penjadualan, permohonan cuti kecemasan dan penyediaan laporan. Terdapat beberapa objektif utama yang efektif and efisyen dalam membangunkan sistem ini. Antaranya ialah menghapuskan 'buddy punching', mengurangkan penggunaan kertas, menyediakan laporan yang cepat dan lengkap, ketetapan data dan masa. Skop bagi sistem ini dapat meyimpan data, membuat kemasukan data baru, kemaskini data dan menghapus data, terdapat bar menu disetiap antaramuka yang berfungsi bagi mencatat masa dan kedatangan dan waktu rehat kakitang, mengenalpasti data kakitangan dan penyemakan serta terdapat menu pencarianuntuk memudahkan membuat pencarian dalam masa, pengecualian status dan cuti kecemasan. Dalam penggunaan methodologi, FEES menggunakan methodology Object - Oriented dan Unified Modeling Language (UML). Secara umumnya, methodology ini terbahagi kepada dua fasa iaitu analisis dan rekabentuk. Focus dalam mebangukan system ini adalah memberi kemudahan yang efisyen untuk kakitangan dalam melakukan semua perkara atau pengurusan. Ianya turut memberi panduan supaya menitik beratkan ketetapan masa dalam bidang pekerjaan

TABLE OF CONTENT

PROJECT TITL	E	i
DECLARATION	T.	ii
ACKNOWLEDG	EMENTS	iii
ABSTRACT		iv
TABLE OF CON	TENT	vii
LIST OF TABLE		xii
LIST OF FIGUR	E	xiv
LIST OF APPEN	DIX	xvi
CHAPTER 1 INT	RODUCTION	1
1.1	Project Background	1
1.2	Problem Statement	2
	1.2.1 Buddy Punching	2
	1.2.2 No actual time/Cheating	3
	1.2.3 Difficult to tracking	3
	1.2.4 Security	4
1.3	Objective	4
1.4	Scope	. 5
1.5	Project Significance	6
1.6	Expected Output	7
1.7	Conclusion	8

CHAPTER	2 LITE	RATUF	RE REVIEW AND PROJECT METHODOLOGY	9
	2.1	Introd	uction	9
	2.2	Fact as	nd finding	11
	2.3	Projec	t Methodology	14
	2.4	Projec	t Requirement	16
		2.4.1	Software Requirement	16
		2.4.2	Hardware Requirement	17
		2.4.3	Other Requirement	18
	2.5	Conclu	usion	19
CHAPTER	3 ANAL	YSIS		20
	3.1	Introdu	action	20
	3.2	Proble	m Analysis	21
		3.2.1	Background of current system	21
		3.2.2	Problem statement	23
			3.2.2.1 Manual System	23
			3.2.2.2 Tracking Data	23
			3.2.2.3 Cheating	23
			3.2.2.4 Security	23
	3.3	Requir	ement Analysis	24
		3.3.1	Functional Requirement	24
			3.3.1.1 Scope	24
			3.3.1.2 Business Flow	26
			3.3.1.3 Use-Case view	30
			3.3.1.4 Actors	31
			3.3.1.5 Use case description	32
	3.4	Softwa	are Requirement	52
	3.5	Hardw	are Requirement	51

CHAPTE	R 4 DESI	GN		55
	4.1	Introd	Introduction	
	4.2	High-l	Level design	56
		4.2.1	Raw data	56
		4.2.2	High-Level Logical view / architecture	56
		4.2.3	Static organization	59
		4.2.4	High-Level class diagram	60
		4.2.5	User Interface design	64
			4.2.5.1 Navigation System	64
*			4.2.5.2 Input Design	65
			4.2.5.3 Output Design	68
		4.2.6	Database Design	71
		4.2.7	Deployment view	72
	4.3	Detail	ed Design	73
		4.3.1	Detailed Design	83
		4.3.2	Physical Database Design	84
	4.4	Conclu	usion	89
СНАРТЕ	R 5 IMPL	EMEN	TATION	90
	5.1	Introd	uction	90
	5.2	Softwa	are Development Environment setup	91
	5.3	Softwa	are Configuration Management	92
		5.3.1	Configuration environment setup	92
		5.3.2	Version Control Procedure	94
	5.4	Imple	mentation Status	94
	5.5	Conclu	usion	98
СНАРТЕ	R 6 TEST	ING		99
	6.1	Introd	uction	99
	6.2	Test P	lan	100
		6.2.1	Test Organization	100

		6.2.1.1 System Developer	100
		6.2.1.2 Client	100
		6.2.1.3 End- user	100
	6.2.2	Test Environment	101
	6.2.3	Test Schedule	102
		6.2.3.1 Unit Test for Administrator Login	102
		(TEST_FEES_001)	
		6.2.3.2 Unit Test for Employee Module	103
		(TEST_FEES_002)	
		6.2.3.3 Unit Test for Register	104
		(TEST_FEES_003)	
		6.2.3.4 Unit Test for Emergency Leave	105
		(TEST_FEES_004)	
		6.2.3.5 Unit Test for Schedule	106
		(TEST_FEES_005)	
		6.2.3.6 Unit Test for Attendance	107
		(TEST_FEES_006)	
		6.2.3.7 Unit Test for Short Break	108
		(TEST_FEES_007)	
		6.2.3.8 Unit Test for Report	109
		(TEST_FEES_008)	
6.3	Test S	trategy	110
	6.3.1	Classes of tests	111
6.4	Test D	Design	112
	6.4.1	Test Description	112
		6.4.1.1 TEST_FEES_001 Administrator Login	112
		6.4.1.2 TEST_FEES_002 Employee	113
		6.4.1.3 TEST_FEES_003 Register	114
		6.4.1.4 TEST_FEES_004 Emergency Leave	115
		6.4.1.5 TEST_FEES_005 Schedule	116
		6.4.1.6 TEST_FEES_006 Attendance	117

		0.4.1./ IESI_FEES_00/ Short Break	118
		6.4.1.8 TEST_FEES_008 Report	119
	6.4.2	Test Data	119
6.5	Test R	esults and Analysis	120
	6.5.1	Administrator Login (TEST_FEES_001)	120
	6.5.2	Employee (TEST_FEES_002)	120
	6.5.3	Register (TEST_FEES_003)	121
	6.5.4	Emergency Leave (TEST_FEES_004)	121
	6.5.5	Schedule (TEST_FEES_005)	122
	6.5.6	Attendance (TEST_FEES_006)	122
	6.5.7	Short Break (TEST_FEES_007)	123
	6.5.8	Report (TEST_FEES_008)	123
6.6	Concl	usion	124
CHAPTER 7 PROJ	ECT C	ONCLUSION	125
7.1	Obser	vation on Weaknesses and Strengths	125
7.2	Propositions for Improvement		126
7.3	Contribution		126
7.4	Concl	usion	127
BIBLIOGRAFI			128
APPENDIX			129

LIST OF TABLE

TABLE NO. TITLE	PAGE
Table 4.1 Exception_list (Attendance)	84
Table 4.2 Exception_list (Short Break)	85
Table 4.3 Short_Break	85
Table 4.4 Absence	86
Table 4.5 Registration	86
Table 4.6 Emergency_Leave	86
Table 4.7 Employee	87
Table 4.8 Attendance	87
Table 4.9 Schedule	88
Table 5.1 Progresses of the development status	96
Table 6.1 Hardware Specification	101
Table 6.2 Unit Test for Administrator Login	102
Table 6.3 Unit Test for Employee	103
Table 6.4 Unit Test for Register	104
Table 6.5 Unit Test for Emergency Leave	105
Table 6.6 Unit Test for Schedule	106
Table 6.7 Unit Test for Attendance	107
Table 6.8 Unit Test for Short Break	108
Table 6.9 Unit Test for Report	109
Table 6.10 TEST_FEES_001 Administrator Login	112
Table 6.11 TEST_FEES_002 Employee	113
Table 6.12 TEST_FEES_003 Register	114
Table 6.13 TEST FEES 004 Emergency Leave	115

Table 6.14 TEST_FEES_005 Schedule	116
Table 6.16 TEST_FEES_006 Attendance	117
Table 6.17 TEST_FEES_007 Short Break	118
Table 6.18 TEST_FEES_008 Report	119
Table 6.19 Administrator Login (TEST_FEES_001)	120
Table 6.20 Employee (TEST_FEES_002)	120
Table 6.21 Register (TEST_FEES_003)	121
Table 6.22 Emergency Leave (TEST_FEES_004)	121
Table 6.22 Schedule (TEST_FEES_005)	122
Table 6.23 Attendance (TEST_FEES_006)	122
Table 6.24 Short Break (TEST_FEES_007)	123
Table 6.25 Report (TEST_FFES_008)	123

LIST OF FIGURE

FIGURE NO.	TITLE	PAGE
Figure 2.1 Four phase	e of Rational Unified Process	15
Figure 3.1 Current Sy	ystem Activity Diagram	22
Figure 3.2 Overview	of Front End Employment System	25
Figure 3.3 Staff Regi	stration Activity Diagram	26
Figure 3.4 Admin Ma	anagement Activity Diagram	27
Figure 3.5 Employee	Access Limit Activity Diagram	28
Figure 3.6 Generate I	Report Activity Diagram	29
Figure 3.7 Global vie	w of use-case model	30
Figure 3.8 Register U	Jse case	32
Figure 3.9 Login Use	case	34
Figure 3.10 Enter Ch	eck out Time Use case	36
Figure 3.11 Display (Check out Time Use case	38
Figure 3.12 Check in	Time Use case	40
Figure 3.13 Display (Check in Time Use case	42
Figure 3.14 Update R	ecord Use case	44
Figure 3.15 Search R	ecord Use case	46
Figure 3.16 View Rep	port Use case	48
Figure 3.17 Scanning	Use case	50
Figure 4.1 Current sy	stem Raw Data	56
Figure 4.2 System So	ftware Architecture Overview	58
Figure 4.3 FEES Pack	kage	59
Figure 4.4 Class Diag	ram for Register as Administrator system	60
Figure 4.5 Class Diag	ram for Clock In and Out Employee	61

Figure 4.6 Class Diagram for Add, Update, Delete and Search	62
data in record from database	
Figure 4.7 Class Diagram for Report View	63
Figure 4.8 FEES Main Menu	64
Figure 4.9 Navigation Design	65
Figure 4.10 Input Design for Employee Record Form	65
Figure 4.11 Input Design for Schedule Record Form	66
Figure 4.12 Input Designs for Attendance Record Form	66
Figure 4.13 Input Design for Short Break Record Form	67
Figure 4.14 Input Design for Emergency Leave Record Form	67
Figure 4.15 Absence Report	68
Figure 4.16 Attendance Report	68
Figure 4.17 Leave Report	69
Figure 4.18 Short Break Report	69
Figure 4.19 Schedule Report	70
Figure 4.20ERD Model for FEES	71
Figure 4.21 Deployment view of Front End Employee System	72
Figure 4.22 Class diagram for Front End Employment System	73
Figure 4.23 Class Exception List	74
Figure 4.24 Class Short Break	75
Figure 4.25 Class Employee	76
Figure 4.26 Class Timesheet	78
Figure 4.27 Class Emergency Leave	79
Figure 4.28 Class Staff Registration	80
Figure 4.29 Class Schedule	82
Figure 4.30 Class Absence	83
Figure 5.1 FEES Development Environtment	91
Figure I-1: The Login Panel	129
Figure I-2: The Selection User	130
Figure I-4: The Main Menu (Administrator)	131
Figure I-5: The Main Menu (Staff)	131

Figure I-6: The Employee Profile	132
Figure I-7: The Task Schedule	133
Figure I-8: The Task Schedule List	133
Figure I-9: The Connection Setup	134
Figure I-10: The Attendance	134
Figure I-11: The Fingerprint Reader	135
Figure I-12: The Late Messagebox	135
Figure I-13: The Attendance List	136
Figure I-14: The Short Break	137
Figure I-15: The Fingerprint Reader	138
Figure I-16: The Late Messagebox	138
Figure I-17: The Short Break List	139
Figure I-18: The Emergency Leave	140
Figure I-19: The Emergency Leave List	140
Figure I-20: The Exception List	141
Figure I-21: The Absence List	142
Figure I-22: The Report	142
Figure I-22: The Report Form	1/13

LIST OF APPENDIX

APPENDIX	TITLE	PAGE
A User Manual		129
B Gantt chart		144
C FEES Report Form	n	147

CHAPTER I

INTRODUCTION

1.1. Project Background

Front End Employment System (FEES) is a standalone system that effective for the front end management. FEES provide time, attendance and front end management solution for TESCO Front End Department. This system includes clock in/out order for attendance and short break, task scheduling, emergency leave which in case of an emergency and suite of standard report. The main objective for this system is to replace the current system which uses manual system where recording using a log book. With this proposed system, the management will be more systematic and efficient where available data collection option for use biometric finger prints and save the record in database. FEES can be configured or operated as simple as capturing employee in/out clock or as complex as tracking of employee detail.

The system will detect automatically if employee goes out more than 20 minutes for a break and alert message will appear. This system includes a full suite report designed around common customer needs. The reports provide real-time access for staffing, attendance report, task schedule, daily activities report and worked summary report. FEES also are an incentive that helps the business in rewarding the employees for their good working efforts and achievements. It also provides the graph and it integrates with the daily time and attendance workflow.

1.2. **Problem Statement**

Through surveys and observation done, there are some the problems that arise in the current situation. The following describes the problems evident during from registration.

1.2.1. Buddy Punching

Buddy punching is happened when one employee clock in/out on behalf of other. This type of employee behavior may generate security concerns and create deficiencies in tracking employee attendance or short break where management needs to monitor who is on location or it may result in false punches. Buddy punching is responsible for an enormous amount of undue payroll each year, increase labor costs and reducing bottom lines. So by using biometrics fingerprint, each of this issue is virtually eliminated. As there is no two people have exactly the same arrangement of pattern. The patterns of anyone individual remain unchanged throughout their life time. While other characteristic may change, fingerprints do not, offering a virtually infallible means of personal identification.

1.2.2. No Actual Time/Cheating

Several employees are not responsible for maintaining records of not actual time worked like cheating to enter the clocking time when they want to clock in/out. This record must be maintained and used by the department to determine the overtime. So in addition, the system generates an accurate timesheet for each employee. The timesheet, in turn, can be printed or imported to an accounting program for time and billing or payroll transactions.

1.2.3. Difficult to Tracking

It's to difficult to keep track of the jobs performed on every work order, on a specific part and of total time spent on a specific job. So, this system provides the labor tracking menu to make an easy to tracking the specific part that needed.

1.2.4. Security

The present system insecure because just used log book. There is no secure. So, a security access control systems provide fully integrated solutions with using the username and password. Its means the unauthorized user cannot access the system.

1.3 Objectives

The objectives of this system are:

- i. To enable eliminate buddy punching which to ensure that employee can't clocking in/out for each other.
- ii. To reduce paper usage due to all data stored in electronically.
- iii. To able to protect data against disaster.
- Capable to quickly produce the reports that they need. iv.
- Save time which that gives the supervisor the information they need to keep v. track of their employee and the report.
- vi. To provide the most accurate data collection solution available by requiring employees to be present in order to punch.
- vii. Provide the user friendly interface.
- viii. Provide real-time visibility into all work performed.
 - ix. Ability to record and track detailed configurable employee.

1.4 Scope

The propose system is aimed to provide time, attendance, and front end management solutions for small to enterprise organization in nearly every industry. The immediate users of this system will be the manager or supervisor which handle computer operations and data-entry. Major function integrated into the system covers the capabilities that contain menu options to collect employee time and attendance and short break. This menu also provides verification of employee data and checks the schedule and also allows data collection using labor tracking menu which keep track of employee time, exception, absence and emergency leave.

This system provides a supervisor's menu which password protected menu that contains options that should be available only to supervisors. Reporting is available on every element of time, attendance and short break data and is designed to reports. Considering the enormous amount of data to be captured over a long period of time, the system is hence developed using programming languages-Visual Basic 6.0, database management system-Microsoft Access 2002 and Crystal Report.

1.5 Project Significance

Front End Employment System is a systematic and efficient system that replace the current system where is use a manually system which record all clocking in/out time in log book. With this system, its give ease to the front end department management. This means it can use the time and attendance and scheduling data to the full advantage. For example, automatic alerts help managers quickly react to employee exceptions and enforce attendance policies proactively.

Every employee must scan the finger print if he want to have a short break before left. When the cashiers scan their fingerprint, employee name and id will display and also include the time of clocking in/out that captured from the system automatically. This system makes an ease for administrator that in charge the system to detect who are late with the alert message. This message is display when the employee had exceeded their break period limited.

This system also can manage if any employee has an emergency case immediately. The employee just key in the data in emergency leave and save in the database record. This system reduces the amount of time needed to prepare data for payroll, help tracking and manage employee. FEES also incentive that help business reward employees for good behavior with graph report and integrate with the daily time and attendance workflow. So, that's mean this system have user-friendly and attractive interface and it is easy to use. This system can give a comfortable for both, which to the administrator and employee. The system make the job easier and efficient.

1.6 Expected Output

The FEES shall be the new product that lines itself with other management system but typical it is targeted mainly for small to medium enterprise organization in nearly every industry. Key features included will be user friendly desktop with bar menu and icon, many detailed and summarized report at fingertips, the system confirms/ denies access to the PC within a second, the inter-relation between human biometric checking and automated systems, availability tracking, call-in lists, unlimited scheduling length-schedule as far into the future as you wish and hot keys for quick scheduling.

FEES also include function for task scheduling beside the clock in/out for attendance and short break, emergency leave application which is in the case an emergency and site of standard report.