

PERSONAL ORGANISER

GOH SE TZEN

This report is submitted in partial fulfillment of the requirements for the
Bachelor of Information and Communication Technology (Software Development)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA
2004

ADMISSION

I admitted that this project title name of

PERSONAL ORGANIZER

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

STUDENT :



Date :

19/10/2004

(GOH SE TZEN)

SUPERVISOR :



Date :

19/10/2004

(CIK AZAH KAMILAH)

DEDICATION

*Specially dedicated to
My beloved parents and friends who have
encouraged, guided and inspired me throughout my journey of education*

ACKNOWLEDGEMENTS

I would like to take this opportunity to personally express my deepest appreciation and gratitude. The completion of this project would be impossible without the help of these people. It gives me a great pleasure in completing this project.

Firstly, I would like to thank my supervisor, Cik Azah Kamilah for her guidance and advice throughout the project.

A special thanks to my friends especially my course mates, who give me valuable opinion and help during the project is carried out.

Lastly, I also like to thanks to my family member, for their moral support.

Thank You.

ABSTRAK

Pada masa kini, terdapat pelbagai jenis sistem *digital reminder* telah dibangunkan mengikut keunikan dan kegunaan masing-masing. Sistem *digital reminder* dibangunkan adalah untuk menggantikan cara lama iaitu mencatatkan perkara atau maklumat yang penting secara manual. Pengguna merekodkan nota harian dalam sekeping kertas dan meletakkannya merata-rata contohnya di atas meja. Pengguna terpaksa mencari atau menyemak nota-nota yang telah dibuat satu demi satu untuk memastikan perkara yang penting tidak dilupakan. Selain itu, risiko kehilangan kertas adalah tinggi. Sistem *digital reminder* mengandungi fungsi-fungsi seperti nota ringkas dan *to-do list* yang berperanan mengingatkan pengguna tentang perkara yang hendak dibuat. Walaubagaimanapun, sistem yang terdapat dalam pasaran tidak mempunyai fungsi SMS yang boleh menghantar mesej kepada penerima. Oleh yang demikian boleh menyebabkan pengguna melupakan perkara yang penting jika pengguna meninggalkan komputernya dalam masa yang lama. Oleh yang demikian, *Personal Organizer* dibangunkan untuk menyelesaikan masalah ini. *Personal Organizer* juga disertakan fungsi-fungsi seperti mencatat dan mengira perbelanjaan harian pengguna dan menghantar mesej dalam masa yang cepat. *Personal Organizer* merupakan sejenis *Office Automation System (OAS)* yang membina dokumen, penjadualan sumber dan komunikasi. Ia terdiri daripada lima modul utama iaitu penjadualan dan peringatan modul, SMS modul, perbelanjaan modul, penghasilan laporan modul dan pengubahsuaian nota modul. Dalam pembangunan *Personal Organizer*, perisian seperti *VB.NET*, *Crystal Report 9.0* dan *SQL Server* telah digunakan. *Waterfall Model* dipilih sebagai metodologi dalam proses pembangunan sistem *Personal Organizer*.

ABSTRACT

Nowadays, there are many digital reminder systems have been widely developed due to its advantages. The digital reminder is developed to replace the old method, record the important tasks manually. Users record their daily notes in a piece of paper, cluttering up the desk with scraps of paper. Users have to check the notes one by one to make sure the task is not forgotten. Beside that, the risk of losing the notes and data is very high. The digital reminder systems consist of short notes and to-do list that can remind the users to complete their daily tasks. However, the current systems didn't provide SMS function to remind the users if the users leave the computer for a long time, since the majority of people have their mobile phones at arms reach 24 hours a day. This could result in forget the important tasks. Hence, there is a need for a solution. In addition, extra functions like record daily expenses and send SMS also will be added to ease the users manage their daily life systematically. The Personal Organizer is an office automation system (OAS). OASs are technology for developing documents, scheduling resources and communicating. Personal Organizer is not confined to any specific user or organization. It consists of five major modules, scheduler and reminder module, SMS module, expenses module, generating report module and customize notes module. In order to develop the system successfully, VB.NET and Crystal Report 9.0 will be used. For database, SQL Server will be the favorite. There are many methodologies have been created to reduce the risk associated with shortcuts and mistakes. Choosing the suitable methodology is an important aspect to ensure the project meets the goals. Waterfall Model is used as the system development methodology in this project. Therefore, Personal Organizer is produced.

TABLE OF CONTENT

TOPIC	PAGE
TITLE PAGE	i
ADMISSION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRAK	v
ABSTRACT	vi
TABLE CONTENT	vii
LIST OF TABLES	xiv
LIST OF FIGURES	xvi
LIST OF ABBREVIATIONS	xviii
LIST OF APPENDICES	xix
CHAPTER I INTRODUCTION	1
1.1 Preamble/Overview	1
1.2 Problem Statement (s)	3
1.3 Objectives	4
1.4 Scopes	5
1.5 Contributions	6
1.6 Expected Output	7
1.7 Conclusion	8

CHAPTER II LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Fact and Finding	10
2.2.1 Existing System Review	10
2.2.1.1 AnyTime Organizer Deluxe 9.0	10
2.2.1.1.1 Advantages	11
2.2.1.1.2 Disadvantages	11
2.2.1.2 DeskNotes Version 3.0	12
2.2.1.2.1 Advantages	12
2.2.1.2.2 Disadvantages	13
2.2.1.3 ReadyToPrint Organizer 4.71	13
2.2.1.3.1 Advantages	14
2.2.1.3.2 Disadvantages	14
2.2.1.4 StickyNote 9.0	14
2.2.1.4.1 Advantages	15
2.2.1.4.2 Disadvantages	15
2.2.2 Development Technology	16
2.2.2.1 Short Message Service (SMS)	16
2.2.2.1.1 How SMS Work	17
2.2.2.1.2 Advantages of SMS	18
2.2.3 Programming Languages	18
2.2.3.1 Microsoft Visual Studio 6.0	19
2.2.3.2 Microsoft Visual Studio .NET	20
2.2.3.3 Crystal Report 9.0	21
2.2.3.4 Microsoft SQL Server 2000	22
2.2.4 Development Methodology	22
2.2.4.1 The Waterfall Model	23
2.2.4.2 The Spiral Model	24
2.2.4.3 Model Prototyping	25
2.3 Conclusion	28

CHAPTER III PROJECT PLANNING AND	29
METHODOLOGY	
3.1 Introduction	29
3.2 High-Level Project Requirements	30
3.2.1 Project Facilities Requirement	30
3.2.2 Software Requirement	31
3.2.3 Hardware Requirement	32
3.3 System Development Approach	32
3.3.1 Project Planning Phase	33
3.3.2 System Analysis Phase	33
3.3.3 System Design Phase	34
3.3.4 System Implementation Phase	34
3.3.5 Integration and Testing Phase	35
3.3.6 Acceptance, Installation, Deployment & Maintenance Phase	35
3.3.7 Methodology Justification	36
3.4 Project Schedule and Milestones	36
3.5 Conclusion	37
CHAPTER IV ANALYSIS	38
4.1 Introduction	38
4.2 Analysis of Current System	39
4.2.1 Business Process	39
4.2.2 Problem Analysis	40
4.2.3 Problem Statement	42
4.3 Analysis of To Be System	43
4.3.1 Functional Requirement	43
4.3.2 Technical Requirement	44
4.3.2.1 Software Requirement	44
4.3.2.2 Hardware Requirement	45

4.3.2.3	Implementation Requirement	46
4.4	Conclusion	48
CHAPTER V DESIGN		49
5.1	Introduction	49
5.2	Preliminary/High-Level Design	50
5.2.1	Raw Materials	50
5.2.2	System Architecture	51
5.2.2.1	Log In Module	52
5.2.2.2	Scheduler and Reminder Module	52
5.2.2.3	SMS Module	53
5.2.2.4	Expenses Module	53
5.2.2.5	Generating Report Module	53
5.2.2.6	Customize Module	54
5.2.2.7	Contact List Module	54
5.2.3	User Interface Design	55
5.2.3.1	Navigation Design	55
5.2.3.2	Input Design	57
5.2.3.3	Output Design	57
5.2.4	Database Design	58
5.2.4.1	Logical Database Design	58
5.2.4.4.1	Business Rules	59
5.3	Detailed Design	61
5.3.1	Software Specification	62
5.3.1.1	PO Log In Interface	62
5.3.1.1.1	Log In	62
5.3.1.2	PO Main Interface	64
5.3.1.2.1	Notes	65
5.3.1.2.2	SMS	66
5.3.1.2.3	Expenses	66
5.3.1.2.4	Exit_App	67

5.3.1.3	PO Note Interface	68
5.3.1.3.1	ChangeFont	68
5.3.1.3.2	ChangeFontColor	69
5.3.1.3.3	AddNewNote	69
5.3.1.3.4	Search	70
5.3.1.3.5	UpdateNote	71
5.3.1.3.6	DeleteNote	71
5.3.1.4	PO SMS Interface	72
5.3.1.4.1	SendSMS	73
5.3.1.4.2	AddNewContactList	73
5.3.1.4.3	Search	74
5.3.1.4.4	UpdateContactList	75
5.3.1.4.5	DeleteContactList	76
5.3.1.5	PO Expenses Interface	77
5.3.1.5.1	AddNewBudgetExpenses	77
5.3.1.5.2	Search	78
5.3.1.5.3	UpdateBudgetExpenses	78
5.3.1.5.4	DeleteBudgetExpenses	79
5.3.1.6	PO Generate Report Interface	80
5.3.1.6.1	GenerateReport	80
5.3.2	Physical Database Design	81
5.4	Conclusion	84
CHAPTER VI IMPLEMENTATION		85
6.1	Introduction	85

6.2	Software Development Environment Setup	86
6.2.1	Software Installation	87
6.2.1.1	Nokia PC Connectivity SDK 3.0 Installation	87
6.2.1.2	.NET Framework 1.0 Installation	88
6.2.1.3	Crystal Report 9.0 Installation	88
6.3	Software Configuration Management	89
6.3.1	Version Control Procedure	89
6.4	Implementation Status	90
6.5	Conclusion	91
CHAPTER VII TESTING		92
7.1	Introduction	92
7.2	Test Plan	93
7.2.1	Test Organization	94
7.2.2	Test Environment	94
7.2.2.1	Hardware	94
7.2.2.2	Software	95
7.2.3	Test Schedule	95
7.3	Test Strategy	96
7.3.1	Classes of Tests	97
7.4	Test Design	98
7.4.1	Test Description	98
7.4.1.1	Unit Testing	98
7.4.1.2	Module Testing	99
7.4.1.3	System Integration Testing	99
7.4.1.4	Test Summary Report	99
7.4.2	Test Data	100
7.5	Test Case Results	100
7.5.1	Test Result for Scheduler and Reminder	101
7.5.2	Test Result for Login	101

7.5.3	Test Result for SMS	102
7.5.4	Test Result for Contact List	102
7.5.5	Test Result for Expenses	103
7.5.6	Test Result for Budget	103
7.5.7	Test Result for Edit User Profile	104
7.6	Conclusion	105
CHAPTER VIII PROJECT CONCLUSION		106
8.1	Observation on Weaknesses and Strengths	106
8.2	Propositions for Improvement	108
8.3	Conclusion	109
BIBLIOGRAFI		110
ATTACHMENT		112
APPENDIX		119

LIST OF TABLES

NO	TOPIC	PAGE
2.1	The Comparison of Methodologies	27
4.1	Hardware Requirements for System Development	46
4.2	Hardware Requirements for User Environment	47
4.3	Software Requirements and Software Tools for User Environment	47
5.1	Raw Materials for Personal Organizer	50
5.2	User Data Dictionary	81
5.3	Expense Data Dictionary	82
5.4	Contact_List Data Dictionary	82
5.5	Note Data Dictionary	83
5.6	Alarm Data Dictionary	83
A1	List Activities for PSM I	120
A2	List Activities for PSM II	121
A3	Description for Each Actor and Use Case	126
A4	Personal Organizer Input Specification	127
A5	Personal Organizer Output Specification	128
A6	Implementation Status for PSM II	130
D1	Testing Schedule	159
D2	Login Unit Testing	160
D3	Scheduler and Reminder Unit Testing	161

D4	SMS Unit Testing	162
D5	Contact List Unit Testing	163
D6	Budget Unit Testing	164
D7	Expenses Unit Testing	165
D8	Generating Report Unit Testing	166
D9	Edit User Profile Unit Testing	167
D10	Module Testing	167
D11	System Integration Testing	169
D12	Test Summary Report	169
D13	Test Data	170
D14	Test Result for Scheduler and Reminder	171
D15	Test Result for Login	172
D16	Test Result for SMS	172
D17	Test Result for Contact List	173
D18	Test Result for Expenses	174
D19	Test Result for Budget	175
D20	Test Result for Edit User Profile	176

LIST OF FIGURES

NO	TOPIC	PAGE
2.1	How SMS Work	17
5.1	User and Contact_List Relationship	59
5.2	User and Expenses Relationship	60
5.3	User and Note Relationship	60
5.4	Note and Alarm Relationship	61
A1	The Six Phases of the Waterfall Model	119
A2	Gantt Chart for PSM I	122
A3	Gantt Chart for PSM II	123
A4	Architecture of an Office Automation System	124
A5	The Three Architecture Layer	125
A6	Modules of the Personal Organizer	125
A7	ERD for Personal Organizer	129
A8	Personal Organizer Software Architecture	129
A9	Personal Organizer Hardware Architecture	130
B1	Use Case Diagram	132
B2	Log In Sequence Diagram	133
B3	Log In Activity Diagram	134
B4	Scheduler and Reminder Sequence Diagram	135
B5	Scheduler and Reminder Activity Diagram	136
B6	SMS Sequence Diagram	137

B7	SMS Activity Diagram	137
B8	Expenses Sequence Diagram	138
B9	Expenses Activity Diagram	139
B10	Generating Report Sequence Diagram	140
B11	Generating Report Activity Diagram	141
B12	Customize Sequence Diagram	142
B13	Customize Activity Diagram	142
B14	Contact List Sequence Diagram	143
B15	Contact List Activity Diagram	144
B16	Class Diagram for Presentation Layer and Business Logic Layer	145
B17	Class Diagram for Personal Organizer Artifact	146
B18	Class Diagram for Database Layer	147
C1	User Log In Interface	148
C2	Main Form Interface	149
C3	About Interface	149
C4	Note and Alarm Setup Interface	150
C5	Exit Confirmation Message Box	150
C6	Font Dialog Interface	151
C7	Color Dialog Interface	151
C8	View Notes Interface	152
C9	Create SMS Interface	153
C10	Contact List Interface	154
C11	Send Item Interface	155
C12	Budgets Interface	156
C13	Expenses Interface	157
C14	Generate Reports Interface	158
C15	Edit User Profile Interface	158

LIST OF ABBREVIATIONS

B2B	-	Business to Business
PO	-	Personal Organizer
CDMA	-	Code Division Multiple Access
GSM	-	Global System for Mobile Communications
IIS	-	Internet Information Server
IMAP	-	Internet Message Access Protocol
PDC	-	Personal Digital Cellular
PSM	-	Projek Sarjana Muda
POP3	-	Post Office Protocol 3
SMTP	-	Simple Mail Transfer Protocol
SMPP	-	Short Message Peer to Peer Protocol
SMS	-	Short Message Services
SNMP	-	Simple Network Management Protocol
SNPP	-	Simple Network Paging Protocol
TDMA	-	Time Division Multiple Access
UML	-	Unified Modeling Language
USDP	-	Unified Software development Process
VB.NET	-	Visual Basic.NET
WTS	-	Wireless Trucking Solutions
XML	-	Extensible Markup Language

LIST OF APPENDICES

APPENDIX	TOPIC	PAGE
A	TABLE, FIGURE AND GANTT CHART	119
B	UML DESIGN DIAGRAM	132
C	INTERFACE DESIGN	148
D	TESTING	159

CHAPTER I

INTRODUCTION

1.1 Preamble/Overview

Personal Organizer is a digital reminder which is developed for personal usage. The users can create their daily notes or to-do list to remind them. The reminder system is developed to replace the traditional method, record manually. Record manually means the users record their daily activities in a piece of paper, cluttering up the desk with scraps of paper. This method is not secure because paper can be easily lost or stolen. The user will forget the important tasks or lost the important data. Beside that, the user needs to check consistently about the important task's date and time from scraps of paper. This will waste the user's time.

Nowadays, there are many reminder systems have been widely developed in the market. However, the current systems are still lack of features or functions. They didn't provide SMS function to remind the users through their mobile phone if the users leave the computer. Unlike an e-mail, SMS is much more likely to be read by a person at any one time, since the majority of people have their mobile phones at arms reach 24 hours a day. Hence, there is a need for solution.

The system which developer intends to develop including functions such as:

- i. Allows user to schedule the important tasks based on the require time level.
- ii. Show the important task on the desktop for ease of retrieval.
- iii. The reminder will alert the user according to the schedule by sending SMS to the user mobile phone or pop up a message with alarm.
- iv. Can record expenses and budget the expenses for the following month.
- v. Calculate the total expenses and remaining budget for the following month.
- vi. Generate monthly Crystal report for the expenses.
- vii. Record personal details for each mobile phone user.
- viii. Send SMS.

In order to develop the system successfully, choosing the suitable methodology is an important aspect to ensure the project meets the goals. In this case, Waterfall Model has been chosen as the project development methodology because it is suitable for the project planning.

1.2 Problem Statement (s)

The problems which people now facing include:

- i. Daily activities are recorded in a piece of paper.
Users record their daily activities in a piece of paper, cluttering up the desk with scraps of paper. Time is wasting to find the notes.
- ii. Lack of SMS function
Current system didn't provide SMS function to remind the users through their mobile phone if the users leave the computer.
- iii. Lack of customize text function
Some of the current systems didn't provide the function to enable the user to customize the text such as font type, font size and font color.
- iv. Poor expenses planning
Some of the people can't manage their expenses well. Most of them spend over the budget because there is no planning for their daily expenses.

In order to solve the problems, the Personal Organizer is developed. The notes are record and save in the computer memory. User can access or find the important notes easily without wasting their valuable time. The reminder function is available to alert the user according to the task's schedule. The SMS function is provided to alert the user when the user is leave the computer. Expenses module is developed to help the user records daily expenses. Reports are generated to analysis the user expenses, on the other hand, help the user to budget or manage their expenses in the future.

1.3 Objectives

To solve the project problems, the following objectives should be achieved

- i. Provide a digital system to manage user daily life systematically.
- ii. Record daily notes systematically compared with record the notes on a piece of paper.
- iii. Ensure the important tasks are not forgotten by the user.
- iv. Easy way to send SMS to friend compared to mobile phone when the user stay at home or office.
- v. Easy way to record personal details for every mobile phone user.
- vi. To create a system that will help user to manage their expenses systematically.