

ELECTRONIC APPLICATION FOR PALESTINE EMBASSY IN MALAYSIA

MAHMOUD B.A. ALMADHOUN

UNIVERSITI UTARA MALAYSIA 2012

**ELECTRONIC APPLICATION FOR PALESTINE
EMBASSY IN MALAYSIA**

A project submitted to Dean of Awang Had Salleh Graduate
School in partial fulfillment of the requirements for the degree
Master of Science of Information Technology
Universiti Utara Malaysia

By

MAHMOUD B.A. ALMADHOUN

PERMISSION OF USE

In presenting this project in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this project in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of Postgraduate Studies and Research. It is understood that any copying or publication or use of this project or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my project.

Requests for permission to copy or to make other use of materials in this project, in whole or in part, should be addressed to

**Dean of Awang Had Salleh Graduate School
College of Arts and Sciences
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman
Malaysia**

ABSTRACT

In a twentieth century, we have observed a large-scale growth of internet-based services in our every sphere of life. Information technology has been a necessary element using by the government as a necessary communication way for delivering services to its citizen. E-services delivery is progressing in developing countries, but the erudition is still in immaturity level. In addition, the citizens' needs are increasing and they want easy and secure way to reach the government information, services and transactions that will lead to building the trust between government and citizens. This project focuses on investigating the existing techniques and to come out with a proper solution to make electronic-Embassy more participation and empowerment, then developing A web-application to allow users to benefit from embassy services any time anywhere. In addition, focus in automate the most common consular transactions that using from residents that are registration and authenticate documents transactions.

DEDICATION

*I humbly thank **Allah** Almighty, the Merciful and the Beneficent, who gave me health, thoughts and co-operative people to enable me achieve this goal.*

*I wish to dedicate this work to **Holy Prophet Muhammad** (Peace be upon him) and his companions who laid the foundations of Modern civilization and paved the way for social, moral, political, economical, cultural and physical revolution.*

*I send my success to my father spirit (**shaheed: Basheer Al Madhoun**) who pushed me to progress in my academic life, my Dear and Lovely Mother **Um Adham** for her constant support and prayers, my Dear fiancée Esraa, all My brothers and my sisters for their understanding & endless love through the duration of my study.*

To my best friends who support me and pushed me to the top.

ACKNOWLEDGMENT

After sincerely thanking Allah for all blessing, I would like to thank all those who helped me with their valuable support during the entire thesis process.

I am deeply indebted to my supervisor Ms. Syahida Binti Hassan for her valuable guidance, support, suggestions, information, amusing comments, patience and encouragement to go ahead with my thesis. For sure, without her expertise and advice, I could not have completed this thesis.

Thanks to all official organizations which provided me with valuable information and data. I mention, in particular, Ministry of Telecommunication and Information Technology, the Embassy of Palestine in Malaysia.

Finally, Thanks to all those who supported me to achieve my work successfully.

Thanks UUM.....

*Mahmoud B.A. Almadhoun
2011*

TABLE OF CONTENTS

ABSTRACT	II
LIST OF ACRONYMS	VIII
LIST OF FIGURES	IX
LIST OF TABLES	X

CHAPTER ONE: INTRODUCTION

1.1 Background	1
1.2 Problem Statement	2
1.3 Research Questions	3
1.4 Research Objectives	3
1.5 Research Scope	4
1.6 Research Significance	4
1.7 Content of the Report	5
1.8 Summary	5

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction	6
2.2 Palestine government:	6
2.2.1 The current situation for the Palestine e-Government	7
2.2.2 E-Palestine project initiative	7
2.3 E-Government:	8
2.3.1 E-government Levels	10
2.3.2 Government in Saudi Arabia	12
2.4 E-Services:	13
2.4.1 E-Services Types	14
2.4.2 E-Services Delivery:	15
2.4.3 Frame work for e-government services in Italy	16
2.5 Electronic Embassy	17
2.5.1 United State embassy in Australia	17
2.6 Electronic Transactions	21
2.6.1 E-Transactions Security	22
2.7 Summary	22

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction	23
3.2 Research Methodology Design	23
3.2.1 Awareness of problem.....	25
3.2.2 Suggestion	25
3.2.3 Development	26
3.2.3.1 System design	26
3.2.3.2 System developments point	26
3.2.3.2.1 Development Technologies.....	26
3.2.3.2.2 Development Tools	27
3.2.4 Evaluation.....	27
3.2.5 Conclusion.....	28
3.3 Summary	28

CHAPTER FOUR: SYSTEM ANALYSIS AND DESIGN

4.1 Introduction	29
4.2 Domain Understanding	29
4.2.1 List of Requirements.....	29
4.3 System Design.....	31
4.3.1 UML Diagrams	31
4.3.1.2 Activity Diagram	33
4.3.1.3 Sequence Diagram	34
4.3.1.4 Collaboration Diagrams	37
4.3.1.4.1 Collaboration Diagram for System Login.....	38
4.3.1.4.2 Collaboration Diagram for Online Registration	39
4.3.1.4.2 Collaboration Diagram for Authentication Transaction	40
4.3.1.5 Class Diagram.....	41
4.3.2 Palestine Embassy Web-Based Prototype Interfaces Design.....	43
4.3.2.1 Main Page.....	43
4.3.2.2 Login Page.....	44
4.3.2.3 Registration Page.....	44

4.3.2.4 Authentication Page	45
4.3.2.5 About Palestine	46
4.4 Summary	47

CHAPTER FIVE: FINDINGS

5.1 Introduction	48
5.2 Evaluation Technique.....	48
5.3 The Computer System Usability Questionnaire (CSUQ)	49
5.4 Demography	50
5.5 Data Analysis	50
5.5.4 Descriptive Statistics of Overall Satisfaction Factor.....	54
5.5.5 Descriptive Statistics of Questionnaires Factors.....	56
5.6 Questionnaires Factors Result.....	57
5.6.1 System Usefulness	57
5.6.2 Information Quality	57
5.6.3 Interface Quality	57
5.6.4 Overall Satisfaction.....	57
5.7 System Testing	57
5.7.1 System Requirement Testing Result.....	58
5.8 Conclusion.....	59

CHAPTER SIX: CONCLUSION

6.1 Introduction	60
6.2 Summary	60
6.3 Result Discussion	61
6.4 Limitations	61
6.5 Recommendations	62
6.6 Conclusion.....	62
REFERENCES.....	64
APPENDIX A	69
QUESTIONNAIRE	69

LIST OF ACRONYMS

IT	Information Technology
ICT	Information and Communication Technology
G2G	Government to Government
G2C	Government to Citizen
G2B	Government to Business
SMS	Short Message Service
GDS	Government Delivery Services
IS	Information Systems
DS	Design Science
PHP	Personal Home Page
UML	Unified Modeling Language
HTML	Hyper Text Markup Language
CSUQ	Computer System Usability Questionnaire
GUI	Graphical User Interface
UUM	Universiti Utara Malaysia
IBM	International Business Machines
URL	Uniform Resource Locator

LIST OF FIGURES

Figure 2.1 Challenges and Obstacles in e-Government.....	12
Figure 2.2 IT Value.....	16
Figure 3.1 The Methodology of Design Science Research.....	24
Figure 4.1 Use Case Diagram for Palestine Embassy Web Based System	32
Figure 4.2 Activity Diagram for Palestine Embassy Web Based System	33
Figure 4.3 Sequence Diagram for System Login.....	35
Figure 4.4 Sequence Diagram for Online Registration.....	36
Figure 4.5 Sequence Diagram for Authentication Transaction	37
Figure 4.6 Collaboration Diagram for System Login	38
Figure 4.7 Collaboration Diagram for Online Registration	39
Figure 4.8 Collaboration Diagram for Authentication Transaction.....	40
Figure 4.9 Class Diagram for Palestine Embassy Web Based System.....	42
Figure 4.10 Main Page.....	43
Figure 4.11 Login Page.....	44
Figure 4.12 Online Registration Page.....	45
Figure 4.13 Authentication Page.....	46
Figure 4.14 About Palestine Page.....	47
Figure 5.1 Descriptive Statistics Mean for Usefulness.....	51
Figure 5.2 Descriptive Statistics Mean for Information Quality	53
Figure 5.3 Descriptive Statistics Mean for Interface Quality	54
Figure 5.4 Descriptive Statistics Mean for Overall Satisfaction Factor	56
Figure 5.5 Questionnaire's Factors Percentages	56

LIST OF TABLES

Table 2.1 Stages of e-government growth and type of government relationship	11
Table 2.2 Electronic Embassies Services.....	18
Table 4.1 Functional Requirements	30
Table 4.2 Non-Functional Requirement	30
Table 5.1 CSUQ Factors and Its Items	49
Table 5.2 Descriptive Statistics (Usefulness)	50
Table 5.3 Descriptive Statistics of (Information Quality)	52
Table 5.4 Descriptive Statistics of (Interface Quality)	53
Table 5.5 Descriptive Statistics of (Overall Satisfaction Factor)	54
Table 5.6 Prototype's Requirements Testing Result.....	58

CHAPTER ONE

INTRODUCTION

1.1 Background

E-government is known as a way for governments to use the latest information and communication technologies, especially web-based internet applications to provide better service for its citizen (West, 2000). Web Based e-government services as the information and services that provided to the public on government Websites (Wang, Bretschneider, & Gant, 2005). Web-based internet application is come instead of the manual system to request government services and transactions for citizen and users online, especially those living outside of the country. The internet is rapidly coming to be preformed contrivance for governments to deliver services to the citizen in an efficient way without wasting a lot of governmental resources, efforts and time (Kushchu & Kuscu, 2003).

Information and communication technology play important role in the realm of Consular Services development. Nowadays, the governments are moving towards to develop a mechanism to help their citizens who are abroad to take advantage of its services electronically. The governments now has the duty to provide citizen and companies with the required services and need to improve the e-services especially a online transactions like transportation, medical and trade transactions to transfuse

The contents of
the thesis is for
internal user
only

- Bradbury, J. (n.d). Local Government. Retrieved November 2, 2010, from: <http://www.answers.com/topic/local-government>
- Bruecher, H., Klischewski, R., & Scholl, H. J. J. (2004). e-Government Services: Minitrack Introduction [Electronic version]. *IEEE Computer Society*, 50, 122.
- Cambodia, A. E. i. (2011). Australian Embassy in Cambodia. Retrieved November 5, 2011, from <http://www.cambodia.embassy.gov.au/penh/home.html>
- Chaudron, M., Van Hee, K., & Somers, L. (2003). Use cases as workflows. *Business Process Management*, 1021-1021.
- Coley, C. (2007). What is a requirement?. Retrieved November 23, 2011, from <http://www.coleyconsulting.co.uk/require.html>
- Cook, M.E., LaVigne, M.F., Pagano, C.M., Dawes, S.S. and Pardo, T.A. (2002). Making a Case for Local e-Government. University at Albany, State University of New York, Center for Technology in Government. New York. Retrieved November 20, 2011 from: http://www.ctg.albany.edu/publications/guides/making_a_case/making_a_case.pdf
- Corradini, F., Hinkelmann, K., Polini, A., Polzonetti, A., & Re, B. (2009). *C2ST: a quality framework to evaluate e-government service delivery*. In Proceedings of the 8th International Conference EGOV, Proceedings of ongoing research, project contributions and workshops, Linz (Austria).
- Directorate, e.-G. G. (2009). The Medium Term Action Plan for e-Government (2009-2011). Retrieved October 25, 2011, from http://www.pmtit.ps/ar/news/plugins/spaw/uploads/files/egov_3.doc
- Fang, Z. (2002). E-government in digital era: concept, practice, and development. *International Journal of The Computer, The Internet and Management*, 10(2), 1-22.
- Gamlo, A., & Bamasak, O. (2009). *Towards securing e-transactions in e-government systems of Saudi Arabia*. In Proceedings of the International Conference for internet Technology and Secured Transactions, ICITST.
- Guo, Y. (2010). *E-Government: Definition, Goals, Benefits and Risks*. In Proceedings of the International Conference on Management and Service Science (MASS).
- Hahamis, P., Iles, J., & Healy, M. (2005). E-government in Greece: Bridging the gap between need and reality. *Electronic Journal of e-Government*, 3(4), 185-192.

- Hevner, A. R., March, S. T., Park, J., & Ram, S. (2004). Design science in information systems research. *Mis Quarterly*, 75-105.
- Hwang, M. S., Li, C. T., Shen, J. J. & Chu, Y. P. (2005). Challenges in e-government and security of information. *Information & Security: An International Journal*, 15(1), 9-20.
- Jaber, N. O. A. (2011). *Strategic Analysis and Development of Electronic Government Strategies for the Palestinian Municipalities*. National University.
- Johansson, L. Carlsson, M. (2009). *Formal Verification of UML-RT Capsules using Model Checking*. UNIVERSITY OF GOTHENBURG. Retrieved November 6, 2011, from <http://publications.lib.chalmers.se/records/fulltext/117319.pdf>
- Khoury, B. (2006). *The Palestinian e-Government, the Status Quo and the Future Plans*. paper presented by Ministry of Telecommunication and Information Technology, Gaza, Palestine.
- Kuechler, W., Vaishnavi, V., & Kuechler Sr, W. L. (2007). *Design [Science] Research in IS—A Work in Progress*. In Proceedings of the 2nd International Conference on Design Science Research in Information Systems and Technology.
- Kushchu, I., & Kuscu, H. (2003). *From E-government to M-government: Facing the Inevitable*. In Proceedings of the 3rd European Conference on E-Government.
- Lam, W. (2005). Barriers to e-government integration. *Journal of Enterprise Information Management*, 18(5), 511-530.
- Lewis, J. (1995). IBM computer usability satisfaction questionnaires: psychometric evaluation and instructions for use. *International Journal of Human-Computer Interaction*, 7(1), 57-78.
- Löfstedt, U. (2005). E-government assessment of current research and some proposals for future directions. *International Journal of Public Information Systems*.
- Maheshwari, B., Kumar, V., Kumar, U., & Sharan, V. (2007). *E-Government portal effectiveness: Managerial considerations for design and development*. Paper presented at the Computer society of India.
- Malaysia, U. E. i. (2011). UK Embassy in Malaysia. Retrieved 5 November, 2011, from <http://ukinmalaysia.fco.gov.uk/en/>

- Merrall, G. (2005). PHP/MySQL Tutorial. Retrieved November 2, 2011, from <http://www.Webmonkey.com>.
- Ministry of Commerce, S. T., Jamaica. (2003). *Electronic Transactions Policy*. Retrieved November 13, 2011, from <http://unpan1.un.org/intradoc/groups/public/documents/caricad/unpan009914.pdf>.
- Muir, A., & Oppenheim, C. (2002). National information policy developments worldwide I: electronic government. *Journal of information science*, 28(3), 173.
- Obrenovic, Z., & Starcevic, D. (2004). Modeling multimodal human-computer interaction. *Computer*, 37(9), 65-72.
- Oestereich, B. (2002). *Developing software with UML: object-oriented analysis and design in practice*: Pearson Education.
- Parial, P., Rahman, M., & Hossain, M. (2011). E-service Usability and Citizens Expectation—A study on Bangladesh E-government Service. s thesis, University of Boras, Bangladesh.
- Peppers, K., Tuunanen, T., Rothenberger, M. A., & Chatterjee, S. (2007). A design science research methodology for information systems research. *Journal of Management Information Systems*, 24(3), 45-77.
- Reddick, C. G. (2004). A two-stage model of e-government growth: Theories and empirical evidence for US cities. *Government Information Quarterly*, 21(1), 51-64.
- Reffat, R. (2003). *Developing a successful e-government*. Paper presented at the Symposium on E-government.
- Saidam, S. (2010). *Palestinian E-Gov, Reality, Aspirations and Existing Challenges*. Paper presented at the information Technology in a Modern and Democratic Society, Taawon for Conflict Resolution Institute, Palestine, Ramallah.
- Palvia, S. C. J., & Sharma, S. S. (2007). E-Government and E-Governance: Definitions/Domain Framework and Status around the World. *Foundation of e-government*, 1-12.
- Silcock, R. (2001). What is e-government. Paper presented at *Hansard of Parliamentary Government, Parliamentary affairs*, 54(1), 88.

- Tan, C. W., Benbasat, I., & Cenfetelli, R. T. (2008). *Building Citizen Trust towards e-Government Services: Do High Quality Websites Matter?* In Proceedings of the Hawaii International Conference on System Sciences.
- Ubaldi, B.-C., & Roy, J. (2010). E-government and Federalism in Italy and Canada. In C. G. Reddick (Ed.), *A Comparative Assessment Comparative E-Government*. (Vol. 25, pp. 183-199). New York: Springer.
- UNUSAFP,(2011). E-Services. Retrieved November 15, 2011, from <http://www.emacao.egov.iist.unu.edu>
- Vaishnavi, V., & Kuechler, W. (2007). Design research in information systems [Electronic version]. *Information Systems Journal* (1978), 22, 1-16.
- Wang, L., Bretschneider, S., & Gant, J. (2005). Evaluating web-based e-government services with a citizen-centric approach. *International Conference on System Sciences. HICSS '05. Proceedings of the 38th Annual Hawaii*.
- West, D. M. (2000). Assessing e-government: The Internet, democracy and service delivery by state and federal governments. Paper presented at the Center for public policy, Brown University.