

**Replacement Teacher Job portal
Southern Aghwar Directorate Ministry of Education Jordan**

OSAMA AHMAD SULEIMAN MARADAT

**UNIVERSITI UTARA MALAYSIA
2010**



**KOLEJ SASTERA DAN SAINS
(College of Arts and Sciences)
Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK
(Certificate of Project Paper)**

Saya, yang bertandatangan, memperakukan bahawa
(I, the undersigned, certify that)

**OSAMA AHMAD MARADAT
(802375)**

calon untuk Ijazah
(candidate for the degree of) **MSc. (Information Technology)**

telah mengemukakan kertas projek yang bertajuk
(has presented his/her project paper of the following title)

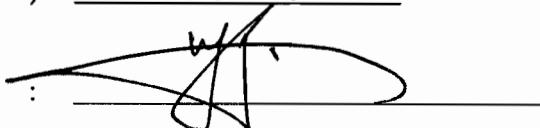
**REPLACEMENT TEACHER JOB PORTAL SOUTH AGHWAR
DIRECTORATE MINISTRY OF EDUCATION JORDAN**

seperti yang tercatat di muka surat tajuk dan kulit kertas projek
(as it appears on the title page and front cover of project paper)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan
dan meliputi bidang ilmu dengan memuaskan.
(that the project paper acceptable in form and content, and that a satisfactory
knowledge of the field is covered by the project paper).

Nama Penyelia Utama
(Name of Main Supervisor): **DR. KANG ENG THYE**

Tandatangan
(Signature)

: 

Tarikh
(Date)

: **9 May 2010**

DR. KANG ENG THYE
Penyarah Kanan
Bidang Sains Gunaan
Kolej Sastera & Sains
Universiti Utara Malaysia

PERMISSION TO USE

In presenting this thesis 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 thesis 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 the Graduate School.

It is understood that any copying or publication or use of this thesis 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 thesis. Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to

Dean of Postgraduate

College of Arts and Sciences (UUM-CAS)

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman.

ABSTRACT

A web-based online job application becomes the most useful tool to access the information about the applicant, and applicant information is accessible at the press of a button immediately. Graduates need to work hard to get job that may require cost and time, using Internet technology significantly will reduces the cost and time of transferring information over distance. The purpose of this study was to develop a job portal for South Aghwar Directorate in order to replace the old system, which give job seeker a flexible way to access jobs and give them the capability to register, search, and receive information and Enable them to obtain vacancy as a replacement teacher via online services.

Replacement Teacher Job Portal system comprises of a database that is built using MySQL database application software, Apache server as the web server and JSP as its application server. The methodology used is General Methodology using the Unified Modeling Language-UA Approach.

DEDICATION

I dedicate this humble work to my father and mother; the spring of loyalty, affection, and dedication. They raised me on the principles of virtue, to my beloved wife, brothers, sisters, and my daughter; who spared no effort helping me during my school years. I dedicate this work also for my brother Suleiman who shared my journey to study in Malaysia.

I am also expressing my great thankful to all my colleagues and friends at UUM, especially from the Applied Science, College of Arts and Sciences for their help and support, with whom I shared pleasant times, My thanks and gratitude goes to my brother Dr. Eissa Al-kotaba “Abo Amr”, “My Uncle”, Omer Al-Oshibat “Abo baraa”, Reda Al- Oshibat “Abo Razan”, Soud Al-shamalat “Abo Remass, and my best friend in Malaysia Ali Arhoma and all my family members for their encouragement and support all the period of my studying, and to my AL-MARADAT family.

ACHNOWLEDGEMENT

Praise is to ALLAH for helping me to accomplish this humble study. Also, my thanks to ALLAH who has seen me through to this level in my academic achievement, I would like to seize this opportunity to extend my gratitude to DR. Kang Eng Thye for kindly supervising this study, his priceless instruction and valuable directions had great role in the accomplishment of this report, my evaluator Mrs. Noor Izzah for her suggestions and help, and Mrs. Azizah Bt Haji Ahmad for her suggestions. I would like also to thank all my instructors in the College of Arts and Sciences in the University Utara Malaysia (UUM) for their support.

Thank you UUM.

TABLE OF CONTENTS

PERMISSION TO USE	I
ABSTRACT.....	II
DEDICATION.....	III
ACKNOWLEDGEMENT.....	IV
TABLE OF CONTENTS.....	V
LIST OF TABLS	X
LIST OF FIGURES	XI

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION.....	1
1.2 STATEMENT OF THE PROBLEM.....	3
1.3 RESEARCH OBJECTIVES	4
1.4 RESEARCG QUESTIONS.....	4
1.5 SIGNIFICANCE OF THE STUDY	4
1.6 SCOPE AND LIMITATIONS OF THE STUDY	5
1.7 THESIS ORGANIZATION	5
1.8 CONCLUSION	6

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION.....	7
2.2 E-GOVERNMENT	7
2.2.1 STAGES OF E-GOVERNMENT TRANSFORMATION	8
2.3 ONLINE JOBS	11

2.4 WEB-DEVELOPMENT	13
2.4.1 WEB APPLICATION	13
2.4.2 WEB APPLICATION ARCHITECTURE	14
2.5 SYSTEMS' REQUIREMENT	17
2.6 RELATED WORK	19
2.6.1 MINISTRY OF EDUCATION IN NEW ZEALAND	19
2.6.2 MINISTRY OF EDUCATION IN SINGAPORE	20
2.7 CONCLUSION	23

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION	24
3.2 AWARENESS OF PROBLEM	26
3.3 SUGGESTIONS	27
3.2.1 LOGICAL DESIGN	28
3.2.1 PHYSICAL DESIGN	28
3.4 DEVELOPMENT	29
3.5 EVALUATION	30
3.6 THE INTERVIEW TECHNIQUES	30
3.6.1 THE SEMI-STRUCTURED INTERVIEWS	31
3.6.2 THE PROCEDURES OF THE SEMI-STRUCTURED INTERVIEWS.....	32
3.7 ANALYSIS OF THE SEMI-STRUCTURED INTERVIEWS	33
3.8 CONCLUSION	34

CHAPTER 4: SYSTEM ANALSYS AND DEVELOPMENT

4.1 INTRODUCTION	35
4.2 FUNCTIONAL REQUIRMENTS	35
4.3 NON FUNCTIONAL REQUIRMENTS	36
4.3.1 SECURITY	36
4.3.2 USABILITY	36
4.3.3 RELIABILIY	36

4.3.4 OPEARATIONAL REQUIREMENTS	36
4.4 USE CASE DIAGRAM	37
4.5 USE CASE SPASIFICATION	38
4.5.1 USE CASE: VIEW MAIN PAGE	38
4.5.2 USE CASE: USER REGISTRATION	40
4.5.3 USE CASE: LOGIN	42
4.5.4 USE CASE: MANAGE JOB VACANCY LISTING	44
4.5.5 USE CASE: MANAGE APPLICATION.....	46
4.5.6 USE CASE: MANAGE CANDIDATE LIST	49
4.5.7 USE CASE: LOGOUT	51
4.6 SEQUENCE DIAGRAMS FOR REPLACEMENT TEACHER JOB PORTAL	
SYSTEM	53
4.6.1 SEQUENCE DIAGRAM: VIEW MAIN PAGE (RTJP_01)	53
4.6.2 SEQUENCE DIAGRAM : USER REGISTERATOION (RTJP_02)	54
4.6.3 SERQUENCE DIAGRAM : LOGIN (RTJP_03)	54
4.6.4 SEQUENCE DIAGRAM : MANAGE JOB VACANCY (RTJP_4)	55
4.6.5 SEQUENCE DIAGRAM : MANAGE APPLICATION (RTJP_05)	57
4.6.6 SEQUENCE DIAGRAM : MANAGE CANDIDATE LIST (RTJP_06)	59
4.6.7 SEQUENCE DIAGRAM: LOGOUT (RTJP_07)	61
4.7 COLLABORATION DIAGRAM	62
4.7.1 COLLABORATION DIAGRAM: VIEW MAIN PAGE	62
4.7.2 COLLABORATION DIAGRAM: USER'S REGISTERATOION	62
4.7.3 COLLABORATION DIAGRAM: LOGIN	63
4.7.4 COLLABORATION DIAGRAM: MANAGE VACANCY LISTING	63
4.7.5 COLLABORATION DIAGRAM: ADD NEW VACANCY	64
4.7.6 COLLABORATION DIAGRAM: UPDATE VACANCY	64
4.7.7 COLLABORATION DIAGRAM: DELETE VACANCY	65
4.7.8 COLLABORATION DIAGRAM: MANAGE APPLICATION	65
4.7.9 COLLABORATION DIAGRAM: ADD NEW APPLICATION	66
4.7.10 COLLABORATION DIAGRAM: UPDATE APPLICATION	66
4.7.11 COLLABORATION DIAGRAM: DELETE APPLICATION	67
4.7.12 COLLABORATION DIAGRAM: UPLOAD CV	67
4.7.13 COLLABORATION DIAGRAM: MANAGE CANDIDATE LIST	68
4.7.14 COLLABORATION DIAGRAM: DELETE CANDIDATE LIST	68

4.7.15 COLLABORATION DIAGRAM: SEARCH CANDIDATE LIST	69
4.7.16 COLLABORATION DIAGRAM: SEND CANDIDATE E-MAIL	69
4.7.17 COLLABORATION DIAGRAM: LOGOUT	70
4.8 CLASS DIAGRAM	71
4.9 SYSTEM DEVELOPMEN	72
4.9.1 JAVA SERVER PAGES (JSP)	72
4.9.2 JSP TECHNOLOGY AND JAVA SERVER LETS	73
4.9.3 SQL Server	64

CHAPTER 5: RESULT AND FINDING

5.1 Introduction	75
5.2 Result of interview	76
5.3 System Test Case for Replacement Teacher Job Portal System	79
5.3.1Test Case ID: RTJP-TC 01	80
5.3.2 Test Case ID: RTJP-TC 02	81
5.3.3 Test Case ID: RTJP-TC 03.....	82
5.3.4 Test Case ID: RTJP-TC 04.....	83
5.3.5 Test Case ID: RTJP-TC 05	84
5.4 CONCLUSION	86

CHAPTER 6: DISCUSSION CONCLUSION AND FUTURE WORK

6.1 DISCUTION	87
6.2 STUDY CONTRIBUTION	89
6.3 PROBLEM AND LIMITATION	90
6.4 FUTUR WORK	90
6.5 CONCLOUSION	91

REFERENCES	92
APPENDIX A: test case sample	98
APPENDIX B: Interview questions	102
APPENDIX C: An official letter from South Aghwar Directorate	104

LIST OF TABLES

Table 3.1: Research Methods and Procedures	26
Table 3.2: The Purpose, Software / Hardware Requirement.....	65
Table 5.1: Details of respondent involved.....	76
Table 5.2: Usability of Replacement Teacher Job Portal (RTJP) System	77
Table 5.3: Replacement Teacher's Jobs Portal, Test Case (Main page –View Vacancies Listing)..	80
Table 5.4: Replacement Teacher's Jobs Portal, Test Case (Application Registration).....	81
Table 5.5: Replacement Teacher's Jobs Portal, Test Case (Login).....	82
Table 5.6: Replacement Teacher's Jobs Portal, Test Case (Candidate Page).....	83
Table 5.7: Replacement Teacher Job Portal, test case (Admin page).....	85

LIST OF FIGURES

Figure 2.1: A Canonical Web Architecture (source: Conallen, 2000).....	14
Figure 2.2: Requirements model work products (source: Conallen, 2000).....	17
Figure 2.3: Ministry of Education New Zealand Web site, 2010 (Job Vacancy Listing)...	20
Figure 2.4: Ministry of Education Singapore Web site (Careers at MOE, 2010).....	21
Figure 3.1: General Methodology of Research Design.....	25
Figure 4.1: Use Case Diagram for Replacement Teachers' Online Job Application.....	37
Figure 4.5.1: Use Case (view main page).....	38
Figure 4.5.2: Use Case (user's registration).....	40
Figure 4.5.3: Use Case (login)	42
Figure 4.5.4: Use Case (Manage Job Vacancy Listings)	44
Figure 4.5.5: Use Case (Manage Application)	46
Figure 4.5.6: Use Case (Manage Candidate List)	48
Figure 4.5.7 : Use Case (Logout)	51
Figure 4.2: Sequence Diagram: View Main page	53
Figure 4.3: Sequence Diagram User Registration.....	54
Figure 4.4: Sequence Diagram Login.....	54
Figure 4.5: Sequence Diagram Manage Job Vacancy Listing.....	55
Figure 4.6: Sequence Diagram: Add New Vacancy.....	55
Figure 4.7: Sequence Diagram: Update Vacancy.....	56
Figure 4.8: Sequence Diagram Update Vacancy.....	56
Figure 4.9: Sequence Diagram Manage Application.....	57
Figure 4.10: Sequence Diagram Add New Application.....	57
Figure 4.11: Sequence Diagram Update application	58
Figure 4.12: Sequence Delete Application.....	58
Figure 4.13: Sequence Diagram Upload CV.....	59
Figure 4.14: Sequence Diagram Manage Candidate List	59
Figure 4.15: Sequence Diagram Delete Candidate.....	60
Figure 4.16: Sequence Diagram Search Candidate.....	60
Figure 4.17: Sequence Diagram Send candidate e-mail.....	61
Figure 4.18: Sequence Diagram Logout.....	61
Figure 4.19: Collaboration Diagram View Main Page.....	62

Figure 4.20: Collaboration diagram User registration.....	62
Figure 4.21: Collaboration Diagram Login.....	63
Figure 4.22: Collaboration diagram Manage Job Vacancy Listing.....	63
Figure 4.23: Collaboration Diagram Add New Vacancy.....	64
Figure 4.24: Collaboration Diagram Update Vacancy.....	64
Figure 4.25: Collaboration Diagram Delete Vacancy.....	65
Figure 4.26: Collaboration Diagram Manage Application.....	65
Figure 4.27: Collaboration Diagram Add New Application.....	66
Figure 4.28: Collaboration Diagram Update Application.....	66
Figure 4.29: Collaboration Diagram Delete Application.....	67
Figure 4.30: Collaboration Diagram Upload CV.....	67
Figure 4.31: Collaboration Diagram Manage Candidate List.....	68
Figure 4.32: Collaboration Diagram Delete Candidate List	68
Figure 4.33: Collaboration diagram Search Candidate List	69
Figure 4.34: Collaboration Diagram Send Candidate e-mail.....	69
Figure 4.35: Collaboration Diagram Logout.....	70
Figure 4.36: Class Diagram	71

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Today's competitive business environment has motivated the need for organizations to have the best workforce on their payroll. Employers often receive a large number of applications for an open position due to the strained situation of the labor market. The costs of manually selecting potential candidates have risen and employers are searching for means to automate the selection of candidates (Bizer et al., 2005).

Human resources management, like many business transactions, is increasingly taking place on the Internet (Mochol et al., 2007). An Internet based job recruitment portal is one of the conventional means through which job seekers apply for vacant jobs (Ho, 2002). Using this approach, the job seeker registers and submits his/her Curriculum Vitae (CV) to a web site, while the applicants are expected to periodically check the portal for vacancies that suit the submitted CV. In some cases, a notification is sent by the portal to the email address of the applicant once a vacancy appears.

A portal is a web system with functionalities to authenticate and identify users as well as provide them with an easy, intuitive, personalized and self-customizable web-interface for facilitating access to information and services that are of primary relevance and interests to the users (Ho, 2002).

Ever since the creation of the Hashemite Kingdom of Jordan, its leadership has constant commitment to human resources development through the provision of quality education

The contents of
the thesis is for
internal user
only

REFERENCES

Albany. (1998). Models for Action Project: *Developing Practical Approaches to Electronic Rescored Management and Preservation*, A survey of System Development Process Models.

Alrai, official web site. (2010)."Jordan Government Daley Newspaper "retrieved in January 2010. <http://www.alrai.com/>

Auckland .(2004). *Web Applications: What are they? What of them?* Retrieved Jan 14, 2010 form <http://www.acunetix.com>

Barker, D. (2000). Requirements Modeling Technology: *A vision for Better Faster, and Cheaper System.* <http://www.ittc.ku.edu>

Baxly, B. (2003) . *what is a web Application?. Boxes and Arrows.*
<http://events.boxesandarrows.com/events/672>

Beins, B. (2004). *Research Methods: A Tool for Life.* Boston: Allyn & Bacon.

Bennet, J. Beneventano, S.,and Bergamaschi, A. (2002, 2007). *Object Oriented Approach methodology*, accessed on 10 Feb 2010.

Bennett, S., McRobb, S. & Farmer R. (2002). *Object-oriented Systems Analysis and Design using UML.* United Kingdom: McGraw-Hill.

Bizer C., Ralf Heese, Mochol M., Oldakowski R., Tolksdorf R. and Eckstein R. (2005). *The Impact of Semantic Web Technologies on Job Recruitment Processes.* Available online at: <http://wissensnetze.ag-nbi.de/publ/WI2005.pdf>

Bowie, Nolan. (1996). *Voting, Campaigns, and Elections in the Future. In Elections in Cyberspace: Toward a New Era in American Politic.* edited by Anthony Corrado and Charles.Firestone, 69–96. Queenstown, MD: Aspen Institute.

Brad bingham , sherrie llg , neil Davidson. (2002) . Great Candidates Fast : *online Job Application and Electronic processing*. Public personal managmenet voleume 31 No. 1 spring 2002

Casal,D.P.(2005). *Advance Software Development For Web Application*, Retrived on 10 feb 2010 , form http://www.jisc.ac.uk/uploaded_documents/jisctsw_05_05pdf.pdf.

Cem, Kanner. (2003). D. H. *What Is a Good Test Case?* Department of Computer Sciences. <http://www.google.com>

Chadwick, Andrew, with Christopher May. (2001). Interaction between States and Citizens in the Age of the Internet: *E-Government in the United States, Britain and the European Union*. Paper presented at the annual meeting of the American Political Science Association, August 30–September 2, San Francisco, CA.

Clark University,Worcester, MA 01610, USA; <http://scholar.google.com/scholar>

Cohen, L. and Manion. L. (1994). Research Methods in Education (4th Ed.). London: Routledge.

Collard. R. (1999). Test Design, Stqemagazine: Software Testing and Quality Engineering. <http://www.kiberle.com/STQE1/featured.htm>.

Comet – Requirement model, (2007). Retrieved on 21 Feb 2010 from http://www.modelbased.net/comet/requirements_modelling/3b_Requirements_model_html.html

Conallen, J.(2000). Builed web application with UML. *The Addison-Wesley Object Technology Series*

Creswell, R. (2009). *Educational Research, Planning, Conducting and Evaluating Quantitative and Qualitative Research* (Third Edition). Pearson International Edition. USA.

Darrell M. West (2004). *E-Government and the Transformation of Service Delivery and Citizen Attitudes*. <http://scholar.google.com/scholar>

David Nunan. (1992) *qualitative research in second language* .
<http://books.google.jo/books>

Davis, Richard. (1999). The Web of Politics: *The Internet's Impact on the American Political System*. New York: Oxford University Press.

Elliott, R., & Tevavichulada, S. (1999). *Computer Literacy and Human Resource Management: A Public/Private Sector Comparison*. Public Personnel Management, 28, 259-274.; Ibid. <http://www.questia.com>

Farooq, (2006). *Public Job Application*, <http://www.publicjobs.ie/downloads/e-recruitment%20report.pdf>

Foster, (2005). *Online Job Application*. <http://www.get.hobsons.co.uk/advice/job-application-online>.

Fountain, Jane. (1999). The Virtual State: *Toward a Theory of Federal Bureaucracy in the 21st Century*. In Democracy.com

Fraenkel. J. and Wallen, N. (1993). *How to Design and Evaluate Research in Education*. London. McGraw-Hill INC.

Gay, L. and Airasian, P. (2003). *Educational Research: Competencies for Analysis and Applications*. (Seventh Edition). Pearson International Edition.

Gore, Al. (1993). From Red Tape to Results: *Creating a Government That Works Better and Costs Less*. New York: Times Books.

Gubrium, J. and Holstein, J.A (Eds). (2002): *Handbook of Interview Research: Context and Method*. Thousand Oaks, CA: Sage.

Harris, R., Bala, P., Songan, P., Khoo E., (2001). *Chalnges and Opportuencies In Introducing Information and Comunication Technologies To the Kelabit Community of North Centerl Borneo, New Media and Society*, Vol. 3, No. 3. September 2001.

Ho P.T. (2002).*Development of the HKU Campus Portal, University of Hong Kong.* Available online at: http://www.hku.hk/cc_news/ccnews100/portal.htm

Introduction to Project Management Principles (2003). Office of Learning Technologies Human Resources Development Canada (HRDC), Retrieved on 10 Jan 2010 from <http://www.pmi.org/pages/default.aspx>.

Markoff, John. (2000). *A Newer, Lonelier Crowd Emerges in Internet Study*. New York Times, February 16, A1.

Margolis, Michael, and David Resnick. (2000). Politics as Usual: *The Cyberspace Revolution.* Thousand Oaks, CA: Sage Publications.

Mochol M., Jentzsch A. and Wache H. (2007) *Suitable Employees Wanted? Find Them With Semantic Techniques*. Making Semantics Work for Business, European semantic Technology Conference 2007 (ESTC2007), Vienna, Austria, May 31 - June 1, 2007. Available online at: <http://wissensnetze.ag-nbi.de/publ/mswfb2007.pdf>

Murphy, C. (2000). *Online Job Sites Try to Stand Out in the Crowd*. Information Week, 779,184.

New Zealand Ministry of Education Web site, accessed in 18 Feb 2010 . <http://www.minedu.govt.nz/theMinistry/AboutUs/Careers.aspx>

Nielsen, J. (2006). *How Many Users to Test Alert box*. Retrieved from http://www.useit.com/alertbox/quantitative_testing.html

Nijaz. (2000). Dynamic web-based application development. New York: Prentice Hall

Nonacademic Job Search for Graduate Student, (2006). Graduate College Career Services Office University of Illinois at Urbana-Champaign.

Pinaki Shah & Johnny Wong. (2003). *Transaction management in an object-oriented system analyses*. Journal of Systems and Software Volume 24, Issue 2, February 2003, Pages 115-124. <http://www.sciencedirect.com>

Piturro, M. (2000). *The Employer's Guide to Recruiting on the Internet*, Manassas: Impact Publications . ob. cit.

Pssuk.com. Advantages of Web Applications. Retrieved on 4 march 2010, from <http://www.pssuk.com>

Raney, Rebecca. (2000). *Study Finds Internet of Social Benefit to Users*. New York Times, May 11, E7.

Richard T. Cober, Douglas J. Brown, Alana J. Blumenthal , Dennis Doverspike, Paul Levy. (2003) .*The Quest for the Qualified Job Surfer: It's Time the Public Sector Catches the Wave*. <http://scholar.google.com/scholar>

Rosenthal, R. and Rosnow, R. (2008). *Essentials of Behavioral Research Methods and Data Analysis, Third Edition*, The McGraw-Hill, a business unit of the McGraw-Hill Companies., 1221 Avenue of the Americas, New York, NY, 10020.

Sarah Niles, Susan Hanson , (2002). *The geographies of online job search: preliminary findings from Worcester, MA* . Graduate School of Geography,

Singapore Ministry of Education Web site accessed in 18 Feb 2010

<http://www.moe.gov.sg/careers/>

Singleton, R. and Straits, B. (2002). *Survey Interviewing*. In J.F. Gubrium & J.A. Holstein (Eds.), *Handbook of Interview Research* (pp.59-82): Context and Method. Thousand Oaks, CA: Sage.

Torchim, W. (2001). *The Research Methods Knowledge Base*. (2nd Ed.). Cincinnati, OH: Atomic Dog Publishing.

Vaishnavi V & Kuechler B (2007), *Design research in Information Systems..*
From:<http://www.isworld.org/Researchdesign/drisISworld.htm>

Web development knowledge (2008). What Are Active Pages (ASP).
<http://www.webwizguide.com> .