REQUIREMENT ANALYSIS OF E-COUNSELING SYSTEM FOR MATRICULATION COLLEGE

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REQUIREMENT ANALYSIS OF E-COUNSELING SYSTEM FOR MATRICULATION COLLEGE

A project submitted to Dean of Postgraduate Studies and Research in partial
Fulfillment of the requirement for the degree
Master of Science (Information Technology)
Universiti Utara Malaysia

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II

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LIST OF ABBREVIATION

EC	E-Counseling
MAKUMA	Majlis Kaunseling dan Kerjaya Universiti-Universiti Malaysia
MGR	Manager
SK	Sekolah Kebangsaan
UI	User Interface
UML	Unified Modelling Language
UMS	Universiti Malaysia Sabah
UTHM	Universiti Tun Hussein Onn Malaysia
UUM	Universiti Utara Malaysia

ABSTRACT

Nowadays, there are numbers of higher education institutions in Malaysia provided online counseling service as the alternative way for students who are facing difficulties to attend to the counseling center or have problems to face the counselors. With the existence of online counseling service, it helps students in solving problems regarding their study or personal life. From the observations done on the internet, public matriculation colleges in Malaysia have not provided online counseling service for students.

Therefore, the purpose of this project is to construct a requirement model for online counseling service for students and counselors' usage in matriculation colleges. Requirement model is one technique used to identify the requirements of one particular system based on user's needs and features of related existed system. Next, it designs and constructs the system based on the constructed requirement model.

UML notation has been used in this project in order to build the requirement model for online counseling service and system prototype design is designed in storyboard form. In this project, the functions of the system prototype have been discussed in detail based on the constructed requirement model.

ABSTARK

Pada masa ini, banyak institusi pengajian tinggi di Malaysia telah menyediakan perkhidmatan kaunseling secara atas talian sebagai jalan alternatif bagi para pelajar yang menghadapi kesukaran untuk datang ke pusat kaunseling atau mempunyai masalah untuk bersemuka dengan kaunselor. Dengan adanya pekhidmatan kaunseling secara atas talian, ia membantu para pelajar menyelesaikan masalah yang berkaitan dengan pembelajaran mereka mahupun masalah peribadi. Daripada tinjauan yang telah dilakukan di internet, kolej-kolej matrikulasi awam di Malaysia masih belum menyediakan perkhidmatan kaunseling secara atas talian kepada para pelajarnya.

Maka, tujuan projek ini adalah untuk membina satu model keperluan bagi perkhidmatan kaunseling secara atas talian untuk kegunaan para pelajar dan kaunselor di kolej-kolej matrikulasi. Model keperluan adalah satu teknik yang digunakan untuk mengenalpasti keperluan bagi sesuatu sistem berdasarkan kehendak pengguna dan ciri-ciri sistem berkaitan yang sedia ada dan seterusnya merekabentuk dan membangunkan sistem tersebut berdasarkan model keperluan yang sudah dibina.

Notasi UML telah digunakan di dalam projek ini untuk membina model keperluan bagi sistem kaunseling secara atas talian dan rekabentuk prototaip sistem tersebut telah dibangunkan dalam bentuk lakaran papan cerita. Di dalam projek ini juga, fungsi-fungsi prototaip sistem tesebut telah dibincangkan secara terperinci berdasarkan model keperluan yang telah dibina.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The rapid technology development that is experiencing by most countries has caused multiple changes and side effects to society. As a result, it raises various socio-psychological effects in society. Parallel to the development, guidance and counseling services are needed for management to help life and to find wellbeing in life.

Counseling is a service that can support people to reach their full potential. It is a process of helping, individual realization and individual learning process (Zuraimey, Najib & Mohamed Sharif, 2008) to achieving wellness, personal's growth, self-understanding and character and career development through cognitive, affective, behavioral or systematic intervention strategies (American Counseling Association, 1997).

Nowadays, corresponding with the growth of network technology, counseling service is not only conducted by traditional therapy format, but it also can be constructed through online system. Counseling service through online system or online counseling can be presented in three basic forms which are email question and response, chat programs and

The contents of the thesis is for internal user only

REFERENCE

Abbott, J.-A. M., Klein, B., & Ciechomski, L. (2008). Best Practices in Online Therapy. *Journal of Technology in Human Services , 26* (2/4), p. 360-373.

Ainsworth, M. (2001). E-therapy: History and survey. *The ABC's of Internet therapy.* Retrieved 13 August 2010, from http://www.metanoia.org/imhs/history.htm#today

Ainsworth, M. (2001). Talk to a Therapist Online. *The ABC's of Internet therapy.* Retrieved 17 July 2010, from http://www.metanoia.org/imhs/index.html

Akahori, K., Nagasima, K. & Kanazawa, H., (2000), Analysis of E-mail Counseling for School-refusal Students Educational Technology Research, 23, p. 45-50.

Alice Y. F (2009). Online Counseling and Therapy: Critical Issues. p.1-21.Retrieved 17 July 2010, from http://www.netce.com/523/Course_9672.pdf

Barak, A. (1999). Psychological applications on the internet: A discipline on the threshold of a new millennium. *Applied and Preventive Psychology*, 8, p. 231-241.

Bell, D. (2003). UML basics: An introduction to the Unified. *The Rational Edge, E-zine for the Rational Community*. p. 1-11. Retrieved 18 August 2010, from www.nyu.edu/classes/jcf/g22.2440-001_sp06/.../UMLBasics.pdf

Bell, D. (2003). UML basics Part III: The class diagram. *The Rational Edge. E-Zine For The Rational Community* , p.1-13. Retrieved 19 August 2010, from ww.ibm.com/developerworks/rational/.../t_modelinguml_db.pdf

Bloom, J.W. (1998). The ethical practice of WebCounseling. *British Journal of Guidance and Counseling*, 26, p. 53-59.

Borysowich, C. (2007). *Defining Collaboration Diagrams*. Retrieved 25 September 2010 from http://it.toolbox.com/blogs/enterprise-solutions/defining-collaboration-diagrams-21140

Braun, D., Sivils, J., Shapiro, A & Versteegh, J. (2001). What is UML?. *Unified Modeling Language (UML) Tutorial*. Retrieved 21 August 2010, from http://atlas.kennesaw.edu/~dbraun/csis4650/A&D/UML_tutorial/what_is_uml.htm

Cherry, K. (2010). What is Online Therapy Retrieved 22 July 2010 from http://psychology.about.com/b/2010/07/08/what-is-online-therapy.htm

Definition of Professional Counseling, (1997). American Counseling Association Governing Council.

Elleven, R. K., & Allen, J. (2004). Applying technology to online counseling: suggestions for the beginning e-therapist. *Journal of Instructional Psychology , 31* (3), p.223-227. Retrieved 1 August 2010 from www.sageperformance.com/drjeffallen/DrA/.../OnlineCounseling.pdf

Holt, J. (2007). *UML for System Enginnering: watching the wheels* (Vol. 2.). London, United Kingdom: The Institution of Engineering and Technology.

Gedge, R. (2002). Online counselling services in Australia –the challenges of a new vehicle for an old Art Retrieved 13 July 2010 from http://ausweb.scu.edu.au/aw02/papers/refereed/gedge2/paper.html

Grohol, J.M. (1999). Definition & Scope of e-therapy. Best Practices in eTherapy. Retrieved 19 July 2010 from http://psychcentral.com/best/best3.htm

Guterman, J.R., & Kirk, M.A (1999). Mental health counselor and the Internet. Journal of Mental Health Counseling, 21, p. 309-323.

HealthyPlace.com (2009). What is Marriage Counseling? Who's it for? And How Does Marriage Counseling Work?. Retrieved 5 August 2010, from http://www.healthyplace.com/relationships/therapy/what-is-marriage-counseling-whos-it-for-and-how-does-marriage-counseling-work/menu-id-63

Kali Monro. (2008). Online Counseling. Retrieved 22 July 2010 from http://www.kalimunro.com/online_counseling2.html

Khelifa, M. (2007). Online Counseling: Competing, Ethically and safely in a Global Environment. *Electronic. Journal of the American Association of Behavioral and Social Sciences.*p.1-13. Retrieved 20 July 2010 from aabss.org/Perspectives2007/AABSS2007Article6Khelifa.pdf

Kongmany, C. (2009). Data Collection Techniques. *Training Course in Reproductive Health Research Vientiane.* Retrieved 9 September 2010 from www.gfmer.ch/.../Data_collection_tecniques_Chaleunvong_Laos_2009.pdf

Kuittinen, M., Pontinen, S. & Sutinen, K. (2001). How to Design Web-based Counseling. p.178-179. Retrieved 20 July 2010 from http://ieeexplore.ieee.org.eserv.uum.edu.my/ielx5/7507/20425/00943893.pdf?tp=&arnumber=943893&isnumber=20425

Lasker, J.N, Sogolow, E.D, & Sharim, R..R., (2005). The role of an online community for people with a rare disease: content analysis The role of an online community for people with a rare disease: content analysis. *Journal of Medical Internet Research* , 53 (2), p. 195-199.

Laszlo, J.V. , Esterman, G. &, Zabko, S. (1999). Therapy over the Internet? Theory, Research & Finances. p. 1-21. Retrieved 22 July 2010 from http://www.infosihat.gov.my/artikelHP/bahanrujukan/HEandICT/Therapy over the Internet.pdf

Mallen, M. J. & Vogel, D. L. (2005). The Practical Aspect of Online Counseling: Ethics, Technology, and Competency. *The Counseling Psychologist, 33 (6).*

Mallen, M.J., Vogel, D.L., Rochlen, A.B. & Day, S.S (2005). Online Counseling: Reviewing the Literature From a Counseling Psychology Framework. *The Counseling Psychologist. 33(6).*

Maletz, M., Blouin, J. G., Schnedl, H., Brisson, D., & Zamazal, K. (2007). A Holistic Approach for Integrated Requirements Modeling in the Product Development Process. *The Future of Product Development Proceedings of the 17th CIRP Design Conference.* p.198. Retrieved 17 August 2010, from http://www.springerlink.com/content/978-3-540-69819-7/#section=321467&page=2&locus=60

Manhal-Baugus, M. (2001). E-therapy: Practical, Ethical and Legal Issues. p.3-34. Retrieved 1 August 2010 http://www.eric.ed.gov/PDFS/ED455458.pdf

Maples, M. F. (2008). Counseling & Life Coaching: Complementary or Competitive. *Professional Counseling Digest* , p. 1-2. Retrieved 6 August 2010 form http://counselingoutfitters.com/vistas/ACAPCD/ACAPCD-21.pdf

Morgan, G. A. & Harmon, R. J. (2001). Data Collection Techniques. *Journal of the American Academy of Child and Adolescent Psychiatry, 40* (8), p. 865-989.

Moulding N. (2007) Online counselling: With particular focus on young people and support. *Counselling, Psychotherapy, and Health,* 3(1), p. 25-32

Murphy, L.J. & Mitchell, D.L. (1998). When writing helps to heal: e-mail as therapy. *British Journal of Guidance and Counseling*, 26, p. 21-32

Navarro, J., Borges, J., Rodriguez, N., & Jimenez, M. (2002). Electronic Academic Counseling System. *32nd ASEF/ IIEEE Frontiers in Education Conference*, (p. 10-14). Boston, MA. Retrieved 12 August 2010 from http://fie-conference.org/fie2002/papers/1248.pdf

Palaniappan, S., & Jun-E, T. (2006). Web-Based Counselling System. *14th International Conference on Advanced Computing & Communications (ADCOM2006)*, (p. 50-53). Mangalore, India.

Rad, A. Z., & Razak, N. A. (2009). Bridging Digital Divide via the E-Counseling Activities. *Seminar Kebangsaan E-Komuniti 2009. Merapatkan Jurang Digital: Masyarakat Berpengetahuan, Model Malaysia* (pp. 1-8). Kuala Lumpur: Pusat Kajian E-Komuniti Universiti Kebangsaan Malaysia.

Ragusea, A.S. & VandeCreek, L. (2003). Suggestion for The Ethical Practice of Online Psychotherapy. p. 95.

Rochlen, A. B., Zack, J. S., & Speyer, C. (2003). Online Therapy: Review of Relevant Definitions, Debates, and Current Empirical Support. *Journal of Clinical Psychology , 60* (3), p. 270-280.

Sampson, J.P., Kolodinsky, R.W., & Greeno, B.P. (1997). Counseling on the information highway: Future possibilities and pontial problem. Journal of Counseling and Development, 75, p. 203-212.

Sekaran, M. (2003). Data Collection Method. *Research Methods for Business, A Skill Building Approach*, 4, p. 218-261.

Stofle, G.S. (2001). Choosing an online therapist. Harrisburg, PA: White Hat Communications.

Svensson, D & Malmqvist, J. (2001). Integration of Requirement Management and Product Data Management Systems. *Proceedings of DETC'01 ASME 2001 Design Engineering Technical Conference and Computers and Information in Engineering Conference Pittsburgh, PA.* p. 4.

Tate, D.F., Wing, R.R & Winett, R.A. (2001). Using internet technology to deliver a behavioral weight loss program. *Journal of the American Medical Association*, 285, p. 1172-1177.

The Practice of Internet Counseling. (2010). National Board for Certified Counselors, Inc. & Center for Credentialing and Education, Inc.

Venkatesh, S. (2006). Group Counseling. *Counseling Psychologist.* Retrieved 5 August 2010, from http://changingminds.org/articles/articles/group_counseling.htm

Wardell, C. (2008). History of Online Counseling and Child Development. Retrieved 13 August 2010, from http://ezinearticles.com/?History-of-Online-Counseling-and-Child-Development&id=1049584

Watson J.C., (2003). Computer-Based Supervision: Implementing Computer Technology into the Delivery of Counseling Supervision. *Journal of Technology , 3_1.* Retrieved 17 July 2010, from http://jtc.colstate.edu/vol3_1/Watson/Watson.htm

Yun, Z., & Yuan, T. (2010). The Application of Web in Mental Counseling for College Students. *Second International Conference on Multimedia and Information Technology (MMIT)* (p. 194-197). Kaifeng, China: The Institute of Electrical and Electronics Engineers, Inc.

Zamani, Z. A. (2009). Computer Technology and Counseling. *2nd IEEE International Conference on Computer Science and Information Technology (ICCSIT2009)*, p. 488 -490.

Zuraimey A, Mohd, N. S & Mohamed S.M., (2008). Amalan serta peranan dan tangggungjawab kaunselor di sekolah-sekolah dalam menangani masalah kekeluargaan. *Seminar Kaunseling Keluarga 2008*, p.110.