A WEB BASED HELP DESK SYSTEM USING OPEN SOURCE SOFTWARE

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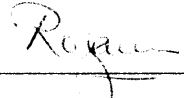
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I

Abstrak

Objektif projek ini ialah untuk membangunkan prototaip kerja bagi perisian help desk berdasarkan laman web, dengan menggunakan teknik Object Oriented dan perisian Open Source. Projek ini terdiri dari tiga fasa utama iaitu definasi requirement, analisa requirement, dan validasi requirement. Requirement yang dikenalpasti dalam fasa definasi requirement adalah yang sesuai bagi digunakan oleh syarikat bersaiz kecil dan sederhana (SMEs). Requirement dianalisa melalui diagram use case, spesifikasi use case, diagram class, diagram aktiviti dan juga senarai requirement. Prototaip kerja telah dibangunkan menggunakan perisian open source bagi tujuan requirement validasi. Prototaip tersebut sedia digunakan oleh syarikat kecil dan sederhana, dan boleh dijadikan asas bagi syarikat-syarikat ini untuk membangunkan perisian help desk mereka sendiri. Perisian yang dibangunkan bolehlah dinaikkan taraf dengan menambah requirement yang lain yang boleh mendatangkan manfaat dan sesuai bagi kegunaan syarikat-syarikat tersebut.

Abstract

This project aims to develop a working prototype of a web based help desk application using Object Oriented approach and Open Source software. Three main phases were involved in this project, which are defining requirements, analyze requirements and validate requirements. The requirements are defined in a way that they are suitable to be used by small to medium sized companies. The requirements are analyzed by constructing use case diagram, use case specifications, class diagram, activity diagrams and the list of requirements. A working prototype is developed using open source software to validate the requirements. The prototype can be readily used by small to medium sized companies, and can be a base for them to develop their own help desk system that includes other requirements and enhancements which are deemed fit for their needs.

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CHAPTER 1

INTRODUCTION

Help desk system has become an increasingly important system in organizations in Malaysia. More and more organizations in Malaysia have already developed their own in-house help desk system or acquired an off-the-shelf help desk system. Microsoft Sourcebook for the help desk defines help desk as "an organization that provides technical support for users internally or externally to the company". Another more detailed definition of help desk is "A Help Desk is a generic name typically associated with the end user support center. Increasingly, the Help Desk is being seen as an integral part of the service function, responsible for bringing multiple resources to bear to solve issues to the client's satisfaction." (Vergis, 1998)

Helpdesk is also related to the term call center, a place where customers call to place orders, track shipments, get more information about a certain product that they consumed. In an organization, help desk users can be from internal or external. Therefore there are two types of help desk, external help desks and internal help desks (Thomas, 1996). Internal help desks operate from within an organization and provide support for users in that organization. Internal help desks are usually within an IT department of an organization. These internal help desks provide IT support to help users in organizations to do their tasks effectively and efficiently. Their main purpose is to solve IT problems that are faced by users in all the different departments in an organization. Therefore the help desk functions are crucial to ensure the smooth running of an organization. Typically the help desk is a centralized point within an organization where problems are reported, solved, managed, and coordinated.

The contents of the thesis is for internal user only

REFERENCES

Bennett, S., Mc Robb, S., & Farmer, R. (2002). *Object-Oriented Systems Analysis and Design Using UML.* Berkshire: McGraw Hill.

Butzon, T. (2002). PHP By Example. Que, USA.

Connolly, T. & Begg, C. (2002). *Database Systems.* Essex: Pearson Education Limited.

Gonzales-Barahona, M, J. (2000). *Advantages of Open Source Software,* Retrieved Aug 30, 2004 from the World Wide Web: http://eu.conecta.it/paper/Advantages_open_source_soft.html

Kane, M. (2001). *Development of Recommendations for Automating an IT Help Desk.* A working paper, University of Abertay.

Larman, Craig (2002). *Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design with Unified Process.* Prentice-Hall.

Lawrence, R. (2003). *Open Source Licensing: Software Freedom and Intellectual Property Law.* New Jersey: Prentice Hall.

List of various help desk software. Retrieved Aug 31, 2004 from the World Wide Web: http://www.helpdesk.com/software.html

MAMPU Open Source (2004). *Government Decision on OSS Implementation.* Retrieved Aug 30, 2004. from the World Wide Web: http://opensource.mampu.gov.my

Marcella, R. & Middleton, I. (1996). The Role of the Help Desk in the Strategic Management of Information Systems. *OCLC Systems & Services,* 12(4), 4-19.

Microsoft Corporation (1997). *Microsoft Source Book*. USA: Microsoft Press.

Perens, B. (2004). *The Open Source Definition*. Retrieved Aug 30 from the World Wide Web: Open Source Initiative (OSI) website http://www.opensource.org

Qiu, X. (1998). *Object-Oriented Software Development Using Object Modeling Method (OMT)*. Retrieved Aug 05, 2004 from the World Wide Web: http://www.dsi.uniroma1.it/~parisi/SE_OMT.pdf

Raffi, J. & Sung, J. *Web Based Automated Help Desk: 4+1 Views*. Retrieved July 10, 2004 from the World Wide Web: http://www.ccs.neu.edu/course/com3205/sampleproject.doc

Rasch, C. *Whats Right with Open Source Software*. Retrieved on Aug 30, 2004 from the World Wide Web: http://www.openknowledge.org/writing/open-source/scb/why-open-source.html

Richter, Charles (1999). *Designing Flexible Object-Oriented Systems with UML*. USA: Macmillan Technical Publishing.

Remedy IT Service Management. Retrieved on Aug 30, 2004 from the World Wide Web: Remedy software website http://www.remedy.com

Schoemehl, K. (2001). *Investing in the Help Desk*. A working paper. USA: STI Knowledge.

Service Desk Optimization – *Do You Have The Right Tools For The Jobs?* Retrieved July 10, 2004 from the World Wide Web: http://www.bmc.com/products/documents/49/69/44969/44969.pdf

Small and Medium Industries Development Corporation (2003). *Definition of SMEs*. Retrieved Feb 08, 2005. from the World Wide Web: http://www.smidec.gov.my

Sykes, J. (2002). The Three-Continent, 24-Hour Help Desk: An Academic First? *Educause Quarterly*, 1, 50-53.

Thomas, A. & Steele, B. (1996). *The Virtual Helpdesk: Strategic Management Center*. Coriolis Group Publishing.

Ullman, L. (2003). *PHP and MYSQL for Dynamic Web Sites*. Barkeley: PeachPit Press.

Varco, T. (2004). A Comparison of Perl and PHP for Web Development. Retrieved Feb 08, 2005 from the World Wide Web: http://s91980004.onlinehome.us/varco/phpperl.pdf

Vergis, P. *Help Desk FAQ*. Retrieved Aug 30 2004 from the World Wide Web: http://www.philverghis.com/helpdesk.html

Wendle, K. *The HP OpenView Approach to Help Desk and Problem Management – Preparing Today for the Help Desk of Tomorrow*. Retrieved July 10, 2004 from the World Wide Web: http://www.auditnet.org/docs/Help%20Desk%20and%20Problem%20Management.pdf

Wilfred, A., Gupta, M., & Bhatnagar, K. (2002). PHP *Professional Projects*. Premier Press, Inc. USA

Wooff, C. (1996). *Good Practice in Help Desk Software*. Retrieved Aug 5, 2004 from the World Wide Web: http://www.ucisa.ac.uk/SG/71/goodpra.doc