

Computing for Human Services

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Book Contents

Chapter No	Chapter Title, Author(s)	Page No
	Book Contents	v
	Preface	ix

Part I

Computing to Serve Educational Aspects

Chapter 1	Status of Higher Education in Developing and Islamic World, <i>Shihab A. Hameed</i>	3
Chapter 2	Planning the Future of Higher Education in Developing and Islamic World, <i>Shihab A. Hameed</i>	13
Chapter 3	Internet Impact on Education, <i>Shihab A. Hameed</i>	21
Chapter 4	Eliminating Internet Weakness in Education, <i>Shihab A. Hameed</i>	29
Chapter 5	Computing Role in Educating Deaf Children, <i>Haidawati Mohamad Nasir, Othman Omran Khalifa, Shihab A. Hameed</i>	37
Chapter 6	Management of Research and Development in Educational Organizations, <i>Rashid A. Saeed, Othman O. Khalifa, Aisha Hassan, Shihab A. Hameed</i>	43
Chapter 7	Computer Implementable Quick Fourier Transform (QFT) for Engineering Educators <i>Abdulfattah A. Aboaba, Shihab A. Hameed, Othman O. Khalifa, Aisha H. Abdalla, Ado Dan-Isa, Jubril D. Jiya., James Katende, Abdulfattah B. Mustapha, & Abdullahi L. Amoo</i>	53
Chapter 8	Virtual-Learning Content Management System Using Problem-Based Learning (PBL), <i>Norul Ashikin Bt Abu Kasim, Teddy Surya Gunawan</i>	63
Chapter 9	Development of Final Year Project Portal for Engineering Program, <i>Teddy Surya Gunawan, Abdul Mutholib, Mira Kartiwi</i>	71

Part II
Computing to Serve Ethical, Social, and Environmental Aspects

Chapter 10	Software Engineering and Ethical Values, <i>Shihab A. Hameed</i>	83
Chapter 11	New Model for Software Engineering Ethical Principles <i>Shihab A. Hameed</i>	91
Chapter 12	Hajj and Information Technologies: Analytical Study, <i>Shihab A. Hameed</i>	101
Chapter 13	Framework for Comprehensive Hajj Model with ICT, <i>Shihab A. Hameed</i>	109
Chapter 14	RFID for Hajj Identification Guide Information and Personnel Announcement, <i>Dzul I'zzat Bin Julaihi, Ahmad F. Abdul Rahman, Othman O. Khalifa</i>	121
Chapter 15	Development of Online Application for Muslim Traveler with UML Diagram, <i>Teddy Surya Gunawan, Afif Abul Fattah Che Omar, Shihab A. Hameed, Mira Kartiwi</i>	133
Chapter 16	Computers and Electronic Devices Waste: Fundamental Facts <i>Shihab A. Hameed</i>	139
Chapter 17	Computers and Electronic Devices Waste: Analysis and Solution, <i>Shihab A. Hameed</i>	149
Chapter 18	ICT and Environmental Problem, <i>Shihab A. Hameed</i>	157
Chapter 19	Strategy for Green ICT: An Islamic View, <i>Shihab A. Hameed</i>	165

Part III
Computing to Serve Healthcare and Medical Aspects

Chapter 20	Fundamental to Medical Data Centre, <i>Shihab A. Hameed, Waleed A. Badurik</i>	175
Chapter 21	Network Based Telemedicine for Fetal ECG Monitoring, <i>M. I. Ibrahimy, S. M. A. Motakabber</i>	185
Chapter 22	Electronic Patient Medical Record to facilitate Patient Monitoring, <i>Shihab A. Hameed, Shazana Mustafa, Aina Mardhiyah, Vladimer Miho, Aisha Hassan</i>	195

Chapter 23	Developing EPMR to Serve Effective Patient Monitoring Database, <i>Shihab A. Hameed, Shazana Mustafa, Aina Mardhiyah, Vladimer Miho</i>	203
Chapter 24	Interactive Web-Based Model for Medical Emergency, <i>Shihab A. Hameed, Shahina shabnam, Nur hafizah Chek Nuh , Nur Huda Bt Salim</i>	209
Chapter 25	Mobile Web Model to Serve Healthcare, <i>Shihab A. Hameed, Vladimer Miho</i>	221
Chapter 26	SMS to Facilitate Healthcare and Emergency, <i>Shihab A. Hameed, Shahina Shabnam Bt Mohd Sharifudeen, Nur hafizah Chek Nuh , Nur Huda Bt Salim, Aisha Hassan, Othman Khalifa</i>	229

Part IV

Computing to Serve Security and Privacy Aspects

Chapter 27	Wireless Technology to Scure Emergency and Guidance, <i>Shihab A. Hameed, B. A. Aliyu</i>	237
Chapter 28	Authentication Enhancement for Medical Data Centers, <i>Shihab A. Hameed, Waleed A. Badurik</i>	245
Chapter 29	Integrated Authentication Model: Face Verification, <i>Shihab A. Hameed, Waleed A. Badurik</i>	255
Chapter 30	Confidentiality to Service Medical Emergency Model, <i>Shihab A. Hameed, Habib Yuchoh, Wajdi F. Al-Khateeb</i>	261
Chapter 31	Fundamental to Password based security <i>Shihab A. Hameed, Ahmed Fathi Zainazlan, Herman Sazwan nor rahim</i>	269
Chapter 32	Graphical Password Security Model, <i>Shihab A. Hameed, Ahmed Fathi Zainazlan, Herman Sazwan nor rahim</i>	277
Chapter 33	Automobile Monitoring and Tracking, <i>Shihab A. Hameed, Othman Khalifa, Aisha Hassan</i>	287

Part V
Computing to Serve Industrial and other Aspects

Chapter 34	Speech to Text to Sign Language, <i>Khalid Khalil Kamil, Othman O. Khalifa</i>	297
Chapter 35	Speech to Sign Language Interpreter System (SSLIS), <i>Khalid Khalil El-Darymli, Othman O. Khalifa and Hassan Enemosah</i>	313
Chapter 36	Speech Codec for a Voice over IP (VoIP) Systems, <i>Othman O. Khalifa, Shihab A. Hameed</i>	323
Chapter 37	Reconfigurable Platform in Embedded System, <i>Amelia Wong Azman</i>	329
Chapter 38	Smart Grid Communication Layer, <i>Norulhuda Lokeman, Norizan Mohd Hassan, Sigit PW Jarot</i>	337

Chapter 28

Authentication Enhancement for Medical Data Centers

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28.1. Introduction

A data center is a facility used for housing a large amount of electronic equipment, typically computers and communications' equipments [1]. Healthcare context has undergone profound changes with the advent of the information age. Today's healthcare professionals are Information managers who collect and analyze data from myriad sources in caring for their patients. Computerization has also helped facilitate the measurement of the quality and costs of care. Not only it is simple to graph and chart patient data, but it is also easy to analyze clinical outcomes [2]. Computerization and electronic transmission of medical records facilitates the flow of medical information, but it also raises many questions and concerns about security and protection of patient privacy. Health care information privacy rights have been protected through the physician's obligation of confidentiality. Today, new computer applications and IT enable increasing amounts of patient information to be readily accessible for physicians and other health care providers. If access to the data is granted, then this technology will also facilitate access to private patient information by utilization and quality reviewers, third-party payers, clinical and epidemiological researchers, but also to drug marketers, criminal investigators, and others [3]. Most health care organizations are now actively interested in implementing the security and privacy measures (HIPAA regulations) and are wondering how to get started with this complex, long-lived, and expensive task. HIPAA includes many regulations and one of these regulations is about Authentication. Biometrics is a promising technology that is being touted as the solution to these kinds of problems. More and more businesses and corporations are recognizing the efficiency of such an application. In hospital settings for instance, there is more and more interest in using biometrics for user authentication to assure the confidentiality and privacy of patient information. A single sign-on is a common way to access systems or data within the system. In other hand, not all medical data has the same level of importance and sensitivity. Therefore, not all data requires the same level of security. An integrated and multi-level authentication system is proposed in this study for medical data centers.