DEVELOPMENT OF CLOUD BASED GERIATRIC HEALTH ASSESSMENT TOOL USING FRAILTY INDEX

BY

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ACCEPTANCE

This is to attest that this dissertation was accepted in partial fulfilment of the requirements for the award of Master of Science (M.Sc.) degree in Computer Science in the department of Computer and Information Science, College of Science and Technology, Covenant University, Ota, Ogun State, Nigeria.

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DECLARATION

I hereby declare that this dissertation entitled **Development of a cloud based web geriatric health assessment tool using frailty index** was carried out by Asite Ovakporoye with matriculation number 16PCG01364. The project is centered on an original study in the Department of Computer and Information Sciences, College of Science and Technology, Covenant University, Ota, under the supervision of Prof. Victor C. Osamor. Concepts of this research project are results of the research carried out by Asite Ovakporoye. Ideas of other researchers have also been fully recognized.

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(Student)	Signature	Date

CERTIFICATION

This is to certify that this dissertation titled, **Development of a cloud based web geriatric health assessment tool using frailty index** was carried out by **Asite, Ovakporoye** and was supervised and submitted to the Department of Computer and Information Sciences, College of Science and Technology, Covenant University, Ota, Ogun State.

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Supervisor Signature and Date

Prof. Victor C. Osamor ……

Head of Department Signature and Date

External Examiner ……

Signature and Date

DEDICATION

I dedicate this project to God Almighty for His sufficient grace, wisdom and knowledge given to me throughout my Master's Degree Programme.

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ABSTRACT

Frailty in the elderly basically implies the vulnerability of older people to adverse health outcomes which can be engendered by different factors. It is apparent that as an individual becomes older, the risk of becoming vulnerable to threats of chronic disease also increases. Therefore a valid, reliable, and concise frailty measure is essential for public health and for all providers who work with older adults. Frailty measure allows for the identification of health factors that predispose an older adult to ill-health as well as directing the development of preventive and treatment interventions. Frailty measure is accomplished via frailty index assessment. The manual process employed in performing these assessments is deemed inefficient because it is prone to human error, misjudgment and bias as well as its electronic counterparts that lack security and data reliability. Although, from previous studies, different systems and approaches have been used to address this problem, these studies have not embraced an integration of several specific health scenarios and frailty algorithms. Also, existing systems do no employ any means of verification, security, proper data storage. Thus, the aim of this study is to improve on the achievements of previous studies by creating a more robust platform that considers three specific health scenarios, which are; Surgery, Cardiology and Oncology. This work also employs a combination of Two Frailty Algorithms; Edmonton Frailty Scale and Physical Phenotype Frailty to develop a prototype Geriatric assessment tool based on Frailty index equipped with verification and security that can be used for Frailty Assessment. The developed system was evaluated using ISO 9241 Usability standard to determine user satisfaction, efficiency and effective in the use of the system. The result of the usability evaluation showed that the developed application has an 'above average usability' rating of 3.59 out of 5 scales. This shows that the Geriatric Health Assessment system is usable for testing frailty in elderly people.