

**An Enhanced Text Steganography Technique (SHA-Logic): Based on Conditional Logic
and SHA-3 (Secure Hash Algorithm 3)**

By

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**A Dissertation submitted to the Directorate of Graduate Studies,
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Declaration

I the undersigned, declare that this research is my original work, except where due acknowledgement has been made. I declare that this work has never been submitted to this University or to any other institution for funding/ for partial fulfilment for any award.

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Acronyms and Abbreviations

SHA:	Secure Hashing Algorithm
SDG:	Sustainable Development Goals
EXE:	Executable
IDE:	Integrated Development Environment
ICT:	Information and Communication Technology
DSM:	Design Science Methodology
LZW:	Lempel-Ziv-Welch compression algorithm
PC:	Personal Computer
HMAC:	Hash-based Message Authentication Code

Operational Definitions

Information Hiding: The process of concealing the existence of the secret data hidden in a cover medium

Steganography: the practice of concealing messages or information within other non-secret text or data

Cryptography: a method of protecting information and communications using codes, so that only those for whom the information is intended can read and process it.

Text Steganography: a technique used to hide confidential messages within a message's text without arousing suspicion.

Cover text: a message that contains a hidden message or information.

Secure Hashing Algorithm: a cryptographic hash function that takes an input (message or data) and produces a fixed-size output known as a hash value or message digest.

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Abstract

Text steganography is a method used to hide confidential messages in a message's text without arousing suspicion. This technique has been used in the past, from ancient Greece's scytale tool to modern methods such as Lempel-Ziv-Welch compression and Reflection Symmetry. As digital data continues to be transmitted between devices, it is vulnerable to attack, making text steganography an essential tool for securing data. Over the years, various techniques have been used to achieve this, including substitution, modification, and embedding techniques. However, text steganography still presents challenges, such as easy detection and the trade-off between hiding capacity and quality of the covered medium. Cryptography has been suggested to improve security by encrypting the original message into a ciphertext. However, it cannot withstand the advancements in technology that can break cryptographic methods. Therefore, combining cryptography and steganography is always advisable because steganography increases the security of the carrier message as encryption (Cryptography) provides confidentiality. This study explores the various techniques used in text steganography and the challenges present in them to develop a high hiding capacity, robust, and high-quality covered medium text steganography technique that combines both Steganography and Cryptography using a conditional Logic and Secure Hashing algorithm.

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