



**SECURE AND INTELLIGENT CLINIC MANAGEMENT
APPLICATION: WEB- BASED TELEMEDICINE
INTEGRATION, ROLE-BASED DATA PROTECTION, AND
ADVANCED SECURITY**

**UNDERGRADUATE THESIS
Submitted as one of the requirements to obtain
Sarjana Komputer (S.Kom)**

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**FACULTY OF COMPUTER SCIENCE
INFORMATICS STUDY PROGRAM
CIKARANG
AUGUST, 2025**

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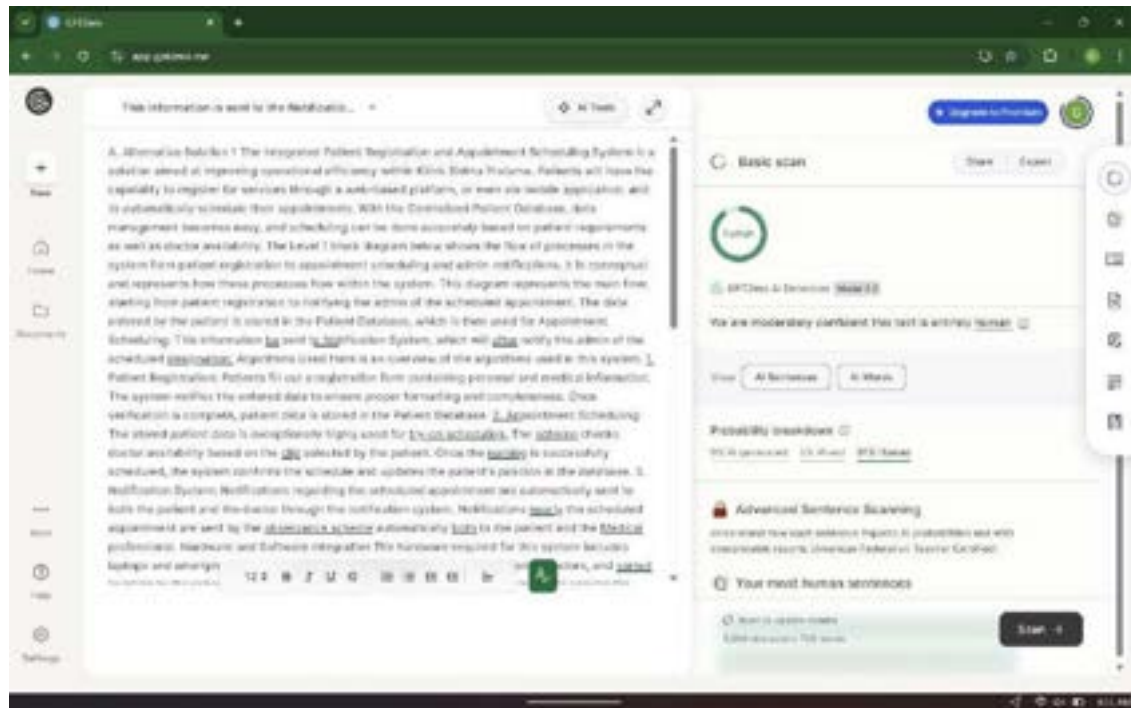
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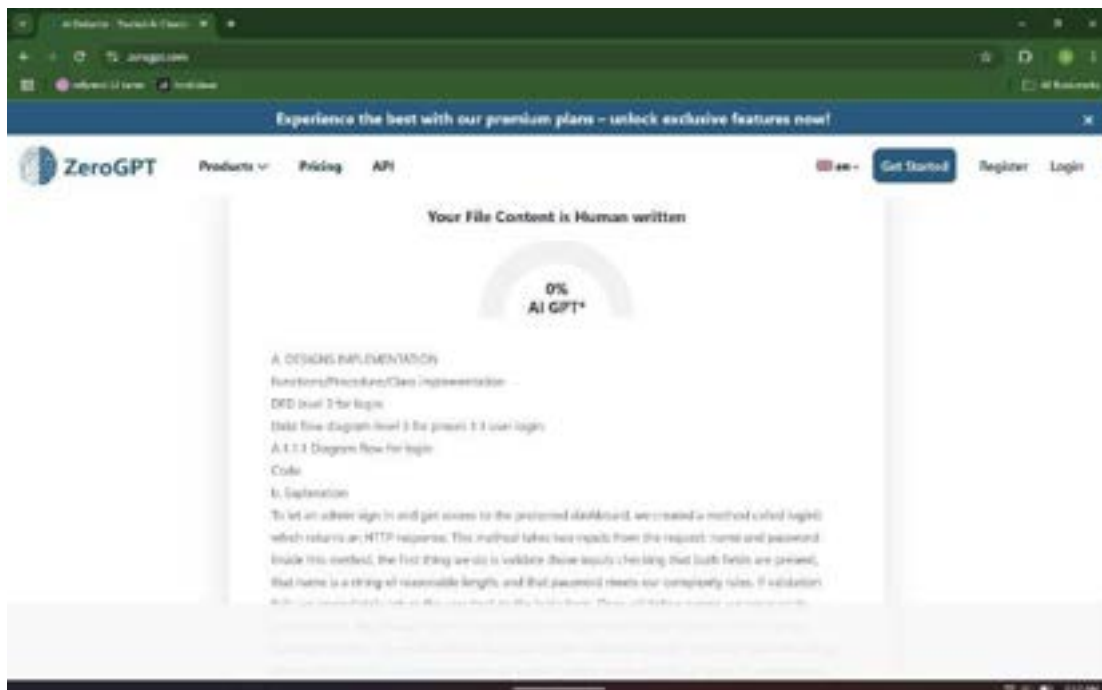
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ABSTRACT

The rapid growth of telemedicine has given rise to fears about protecting patient's private information and data integrity, creating the need for full-security solutions. The purpose of this study presents a layered security architecture which ensures confidentiality and traceability, in contrast to the limits of encryption protection with only transport-layer protections. The method of this architecture implemented four fundamental components: Time-based One-Time Password (TOTP) user authentication, data encryption for data confidentiality, fine-grain permissions, and a policy audit log, protected from tampering using cryptographic chaining. This architecture addresses common threat vectors using the STRIDE model, showing that it can effectively mitigate important risks like data breaches and unauthorized modification. By integrating layered authentication, encryption, permissions, and immutable logging, this architecture enhances the confidentiality and integrity of telemedicine platforms.

Keywords: Telemedicine, Cybersecurity, Data Encryption, Data Privacy, Health Information Systems.

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