IJARSCT



International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 11, May 2025



Traditional Encryption Enhanced by OTP Verified Decryption

Mrs. N Swathi, Akhila Thalla, Nagamoni Praveen Kumar, Bommana Ashwini, Maturi Sai Charan

Department of Computer Science and Engineering ACE Engineering College, Ghatkesar, India

Abstract: Today's digital age, securing sensitive information has become more critical than ever due to the increasing sophistication of cyber threats. While traditional encryption methods provide a strong foundation for protecting data, they can be further strengthened to meet evolving security challenges. This project introduces a hybrid security solution that combines conventional encryption techniques with One-Time Password (OTP) verified decryption, adding an extra layer of protection to ensure secure communication.

In this approach, emails or files are encrypted using established encryption algorithms, maintaining the integrity and confidentiality of data during transmission. Simultaneously, the recipient's email address and phone number are used to generate a unique OTP, which is sent to them via SMS or a secure authentication app. Upon receiving the encrypted content, the recipient must enter the correct OTP to verify their identity.

Only after successful OTP verification is the decryption key released, allowing access to the original message. This two-step verification process ensures that even if the encrypted data is intercepted, it remains unreadable without the OTP, thereby safeguarding against unauthorized access.

To enhance usability, the system is designed for seamless integration into existing email platforms. An "Encrypt" button is conveniently placed next to the "Send" button, allowing users to secure their messages with minimal effort.

By merging traditional encryption with OTP-based identity verification, this solution offers a robust, user-friendly, and highly secure method for protecting sensitive digital communication and ensuring privacy in a rapidly evolving technological landscape.

Keywords: Encryption, Decryption, OTP Verification, Secure Messaging, Fast2SMS, Confidential Communication

Copyright to IJARSCT www.ijarsct.co.in



DOI: 10.48175/IJARSCT-27252

