

CMPE-272

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Overview

- Communicating is one of the key priorities which is ensured by chat programs like WhatsApp, WeChat, Line, and Facebook Messenger.
- There are different types of security functionalities because of the architecture and implementation in various platforms.

1. End-to-End Encryption

- Realization for the Messages, Calls, and File Transfers by Default.
- Keeps the perception of the viewer that only right people are there to access the content.

2. Additional Security Measures

- Authentication via two-factor, spam filtering, and scripted warnings about security alerts.
- Users can have options for imposing limitations for group interactions and can be able to block unwanted people appearing on their timeline.

3. Vulnerabilities and Lack of Privacy

- Previous security incidents e.g. caller Trojans.
- Data collection processes might be shared with law enforcement agencies

4. Recent Enhancements

- We set up the service "Account Protect", "Device Verification", and "Automatic Security Code" to be used against account hijacking, device malware, and impersonation

Achieving CIAA Principles

1. Confidentiality

- Ensure compliance of robust encryption of data at rest and in flight.

2. Integrity

- Secure storage and key management of the encryption keys.
- Frequent security checks to ensure rightness of data and consistency.

3. Availability

- Install systems that reminisce about the constant access to resources.
- Integrate redundancy and failover solutions.

4. Authentication

- Employ multi-factor authentication.
- Assure identity authentication using secure procedures.
- Take secure code writing as a habit to lessen the number of security holes.
- Install the automated update process to handle the problems promptly.
- Set up outlier detection systems in real time to prevent cyber threats.
- Cultivating user awareness on security techniques and their ability to deal with phishing.

Maintaining the above-mentioned standards and innovative security modules can ensure that chat programs will remain on the safe side in line with the CIAA principles and in light of the evolving cyber threats environment.