**SRS**

**1.Introduction**

**1.1 Purpose**

The purpose of this software is to provide a secure and efficient method for hiding sensitive information within digital files using steganography and cryptography techniques. Additionally, the software provides a watermarking feature that allows users to identify and protect their files against unauthorized copying and distribution.

**1.2 Scope**

The software is designed to work on multiple platforms and support a wide range of file formats, including JPEG, PNG, MP3, WAV, and MP4, among others. The software is ideal for individuals and businesses that deal with confidential information, such as lawyers, doctors, and other professionals who handle sensitive data. It can also be used by photographers and artists who want to protect their work against copyright infringement.

**1.3 Definitions, acronyms, and abbreviations**

SRS: Software Requirements Specification

JPEG: Joint Photographic Experts Group

PNG: Portable Network Graphics

MP3: MPEG Audio Layer III

WAV: Waveform Audio File Format

MP4: MPEG-4 Part 14

Steganography: The practice of concealing a message within another message or file.

Cryptography: The practice of secure communication in the presence of third parties.

Watermarking: A technique of embedding a unique identifier into the digital file to prove ownership or protect against unauthorized distribution.

**2.Overall Description**

**2.1 Product Perspective**

The software is a standalone application that provides steganography and cryptography techniques to hide sensitive information and watermark files. It does not interact with other applications directly.

**2.2 Product Functions**

The software shall provide the following functions:

* **User Authentication**: The software shall provide a secure way for users to authenticate their identity and ensure that only authorized users can access and modify the sensitive information.
* **Encryption**: The software shall use the latest cryptographic algorithms to encrypt the sensitive information to protect it from unauthorized access.
* **Steganography**: The software shall use advanced steganography techniques to hide the sensitive information within digital files such as images, videos, and audio files.
* **File Support**: The software shall be capable of processing a wide range of file formats, including JPEG, PNG, MP3, WAV, and MP4, among others.
* **Watermarking**: The software shall provide a watermarking feature that embeds a unique identifier into the file, making it easy to identify the original owner of the file.
* **Integration**: The software shall integrate with other applications such as email clients, web browsers, and file managers to make it easier for users to encrypt and hide sensitive information.
* **User Interface**: The software shall have a user-friendly interface that is easy to navigate and understand, allowing users to easily encrypt and hide sensitive information and watermark files.
* **Compatibility**: The software shall be compatible with multiple operating systems, including Windows, Mac, and Linux.
* **Performance**: The software shall have a fast-processing speed and low resource consumption, ensuring that it doesn't slow down the user's system.
* **Data Backup**: The software shall have a data backup feature that allows users to back up their sensitive information, ensuring that it is not lost or corrupted.

**2.3 User Characteristics**

The software is designed for users who deal with sensitive information such as lawyers, doctors, and other professionals. The users should have a basic understanding of computer operations and file management.

**3.Specific Requirements**

**3.1 Functional Requirements**

The software must:

Provide user authentication to ensure only authorized users can access and modify sensitive information.

Use advanced cryptography algorithms to encrypt sensitive information to protect it from unauthorized access.

Use steganography to hide sensitive information within digital files such as images, videos, and audio files.

Provide a watermarking feature to embed a unique identifier into files to identify and protect them from unauthorized access.

Integrate with other applications such as email clients, web browsers, and file managers to make it easier for users to encrypt and hide sensitive information.

Have a user-friendly interface that is easy to navigate and understand.

Be compatible with multiple operating systems, including Windows, Mac, and Linux.

Have a fast-processing speed and low resource consumption to avoid slowing down the user's system.

Allow users to backup and restore sensitive information.

**3.2 Non-Functional Requirements**

The software must:

Be easy to install and use.

Provide secure and reliable encryption and steganography features.

Offer fast and efficient performance without compromising system resources.

Ensure the confidentiality and integrity of sensitive information.

Be scalable and maintainable.

Provide a backup and restore mechanism to prevent data loss.

**4.System Requirements**

**4.1 Hardware Requirements**

The software will require a minimum system configuration that includes:

Processor: Core i5 7th gen

RAM: 8GB or more

Storage: 100MB or more

**4.2 Software Requirements**

The software will require the following software to run efficiently:

Operating System: Windows 10, macOS 10.14 or later, or Linux distribution with kernel version 4.4 or later.

Java Runtime Environment (JRE) 8 or later.

Supported browsers (for integration): Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari.

**5.Conclusion**

Our software provides a comprehensive solution for securing sensitive information and watermarking files. It offers user-friendly and secure features such as encryption, steganography, and watermarking, making it an ideal tool for professionals and individuals who deal with confidential data. The software is designed to work on multiple platforms and file formats, ensuring that users can easily and securely store their sensitive information and protect their files.