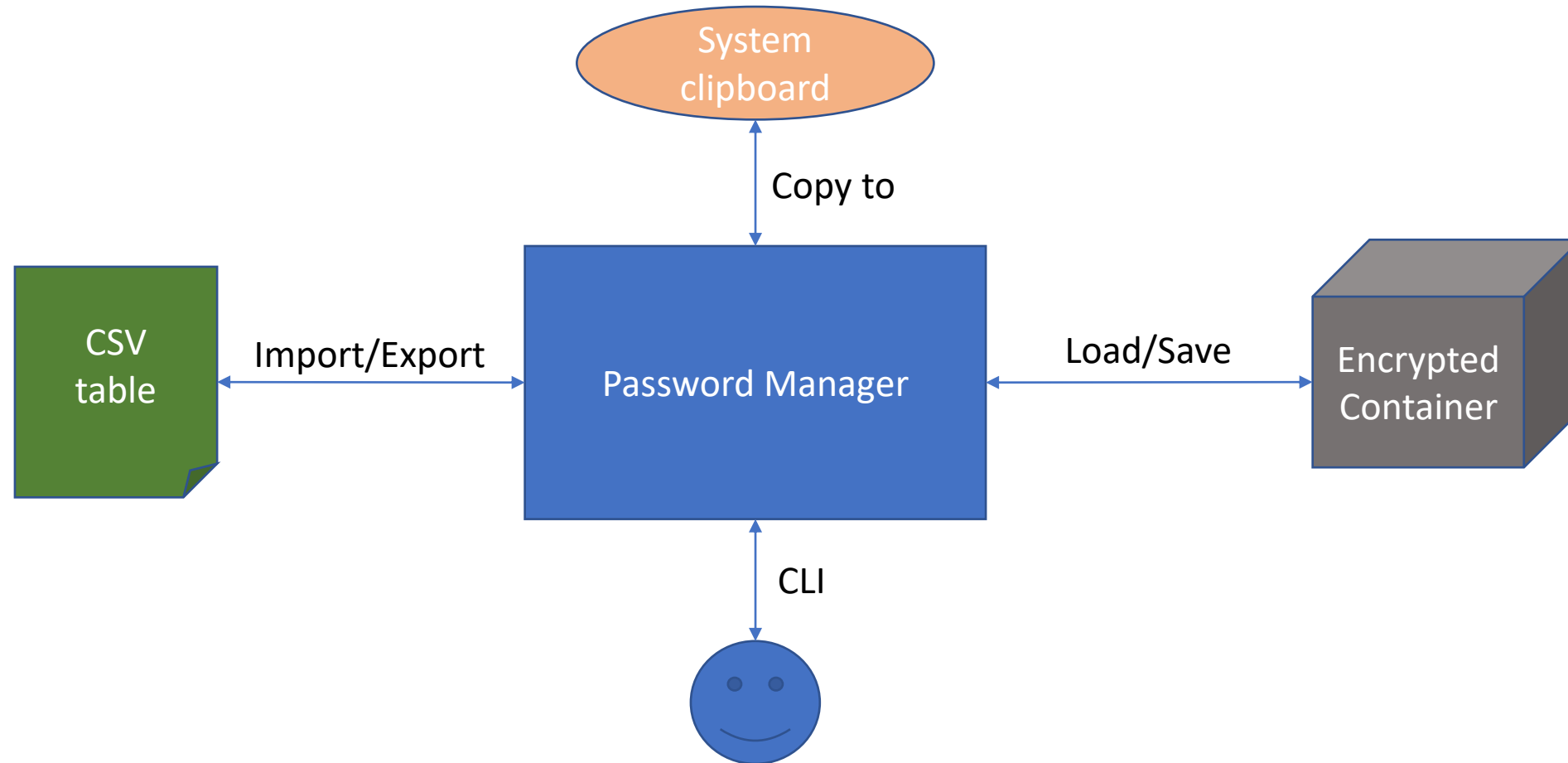


# Simple CLI Password Manager

Developed with C++ for personal use

# Basic Operation



# Usage

```
PS C:\Users\Mikael\Documents\GIT\COMP.SEC.300-SecProg_project\build> ./manager.exe
manager: help
To view specific command run 'help [comamnd]'
Supported commands:
add, a : Add a password to the manager. Usage:
    add

copy, c : Copy a password to clipboard. Usage:
    copy [idx]
```

- No master password. Each container encrypted individually.
- Add, remove, view, find and copy login entries from manager.
- Import and export plaintext web-browser compatible CSV tables.
- Save and load encrypted login containers.

# Secure Programming Solutions

- Written with CERT C++ Standards in mind.
  - User input
  - Exception handling
  - Memory management
- Cryptographic solutions
  - OpenSSL
  - Safe random data. Linux: dev/urandom, Windows: CryptGenRandom().
  - Random salt and initialization vectors
  - AES Galois/Counter Mode authenticated block cypher.
  - SHA256 digest key derivation function.

# Testing

- Unit testing. Unit tests written for most critical parts of the program
  - Encryption functions
  - Key derivation functions
  - SHA256 checksum
- Testing CSV import/export with browsers
  - Google Chrome
  - Mozilla Firefox
  - Microsoft Edge
- Manual testing during development.

# Third-Party Libraries

- OpenSSL for cryptographic functions.
- BOOST Tokenizer for parsing CSV. Thoroughly tested and trusted open-source library.
- Google Test for unit testing.
- Clip by Dacap. Open-source library for copying text to system clipboard.