

PVAULT By OJ - Full Project Documentation

What Is PVAULT By OJ?





PVAULT By OJ is a secure, offline desktop password manager. It allows users to:

- Safely **store passwords** for various platforms (e.g., Gmail, Netflix)
- **View** them in a readable format
- **Delete** them when no longer needed






Unlike cloud-based password managers, this app runs **completely offline**, offering full control and data privacy. It uses **strong encryption (Fernet/AES)** to protect stored data.




Who Is It For?

PVAULT is ideal for:

-  **Admins or IT users** managing credentials across platforms
 -  **Developers** with multiple dev/test accounts
 -  **Students** who want to save school portal or service logins securely
 -  **Anyone** who wants a simple, secure, **offline** password manager
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Key Features

Feature	Description
 Master Password	Required before accessing vault
 Offline Vault	All data stored locally (no cloud)
 AES Encryption	Uses Fernet from the cryptography library
 Modern GUI	Built with customtkinter for a clean user interface
 View Passwords	Decrypts and displays stored entries

Feature	Description
 Delete Entries	Easily remove site/password pairs
 Auto EXE Builder	Automatically rebuilds the .exe after any code update
 Dark/Light Mode	Toggle between themes
<input type="checkbox"/> Show/Hide Input	Toggle password visibility
<input type="checkbox"/> Activity Logging	Logs all login attempts and password actions

How It Works (Step-by-Step)

1. Key Generation

- When you first run the app, it checks if key.key exists.
- If not, it generates a **new AES encryption key** and stores it locally.

2. Master Password Setup

- On first launch, you're prompted to **create a master password**.
- This is **encrypted and stored** in master.key.
- On future launches, you'll have to enter this to unlock the app.

3. Adding Passwords

- You enter a site name and a password.
- The app encrypts the password and stores it like so:

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Gmail|gAAAAABk...

- This is saved in vault.txt.

4. Viewing Passwords

- When you click "View Passwords", the app:
 - Reads vault.txt
 - Decrypts each password using key.key

- Displays them neatly in the GUI

5. Deleting Passwords

- You input the **site name**
- The app finds and deletes the matching line from vault.txt

6. Logging Events

- All successful and failed logins, password additions, and deletions are logged in activity.log with timestamps.

Project Structure

pgsql

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password-vault/

— main.py	# Core app logic (encryption, password handling)
— gui.py	# CustomTkinter GUI code (UI + events)
— vault.txt	# Stores encrypted passwords
— key.key	# AES secret key (auto-generated)
— master.key	# Encrypted master password file
— activity.log	# Logs access, actions, login attempts
— auto_build.py	# Automatically rebuilds exe on code change
— requirements.txt	# Required Python packages
— PVAULT-By-OJ.pdf	# Full app documentation (this file)
— README.md	# GitHub project info
— dist/	# Final packaged .exe (after build)

Installation Instructions (From Scratch)

 Prerequisites:

- Python 3.10+
 - Git
 - Windows machine (for .exe packaging)
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Option 1: Run from Python Source

1. Clone the Repo

bash

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```
git clone https://github.com/socwitholiver/password-vault
```

```
cd password-vault
```

2. Install Dependencies

bash

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```
pip install -r requirements.txt
```

3. Run the App

bash

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```
python gui.py
```

Option 2: Run from .exe File

1. Go to the /dist/ folder
2. Double-click PVAULT-By-OJ.exe






It launches without needing Python or external packages.

Security Notes

- The vault uses **Fernet AES encryption**
- Your master password is **encrypted** and cannot be reverse-engineered

- No files are sent online — all storage and decryption happen **offline**
- Even if someone accesses vault.txt, they can't read the data without key.key

Possible Future Features

Feature	Description
 Search bar	Quickly find saved logins
 Import/Export	Backup vaults or move to another device
 Encrypted Syncing	Optional cloud backup with your own key
 Biometric Unlock	Fingerprint/face unlock support
 Tray App	Minimize to tray with background access

Summary

PVAULT By OJ is a modern, offline, encrypted password manager built with simplicity, security, and usability in mind.

It's built **for individuals** who want full control over their password data — without relying on cloud services, subscriptions, or bloated apps.