# PASSWORD PROTECTION PROGRAM

TEAM 28 – TUPLES1

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# Introduction - Purpose

**Problem**

- Insecure password choices
- Poor memory
- Don't change passwords

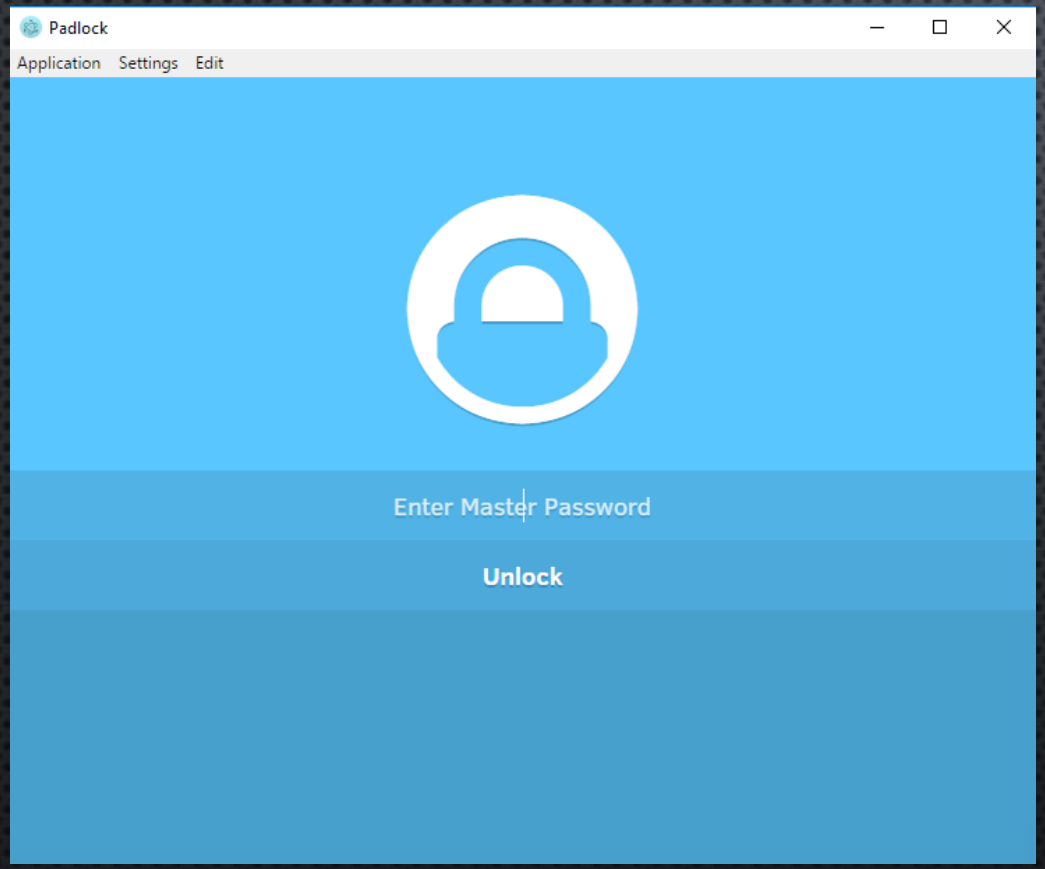
**Solution**

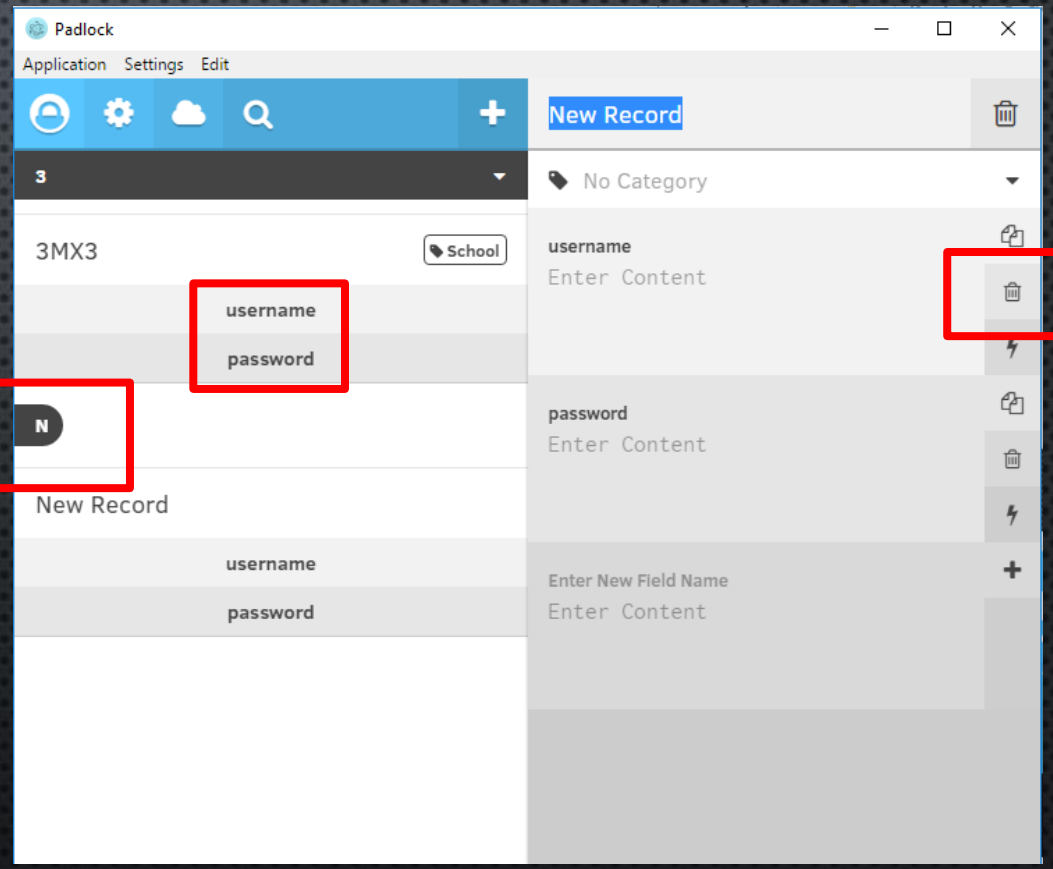
- Encrypted password manager
- Single Master Password

# Introduction - Scope

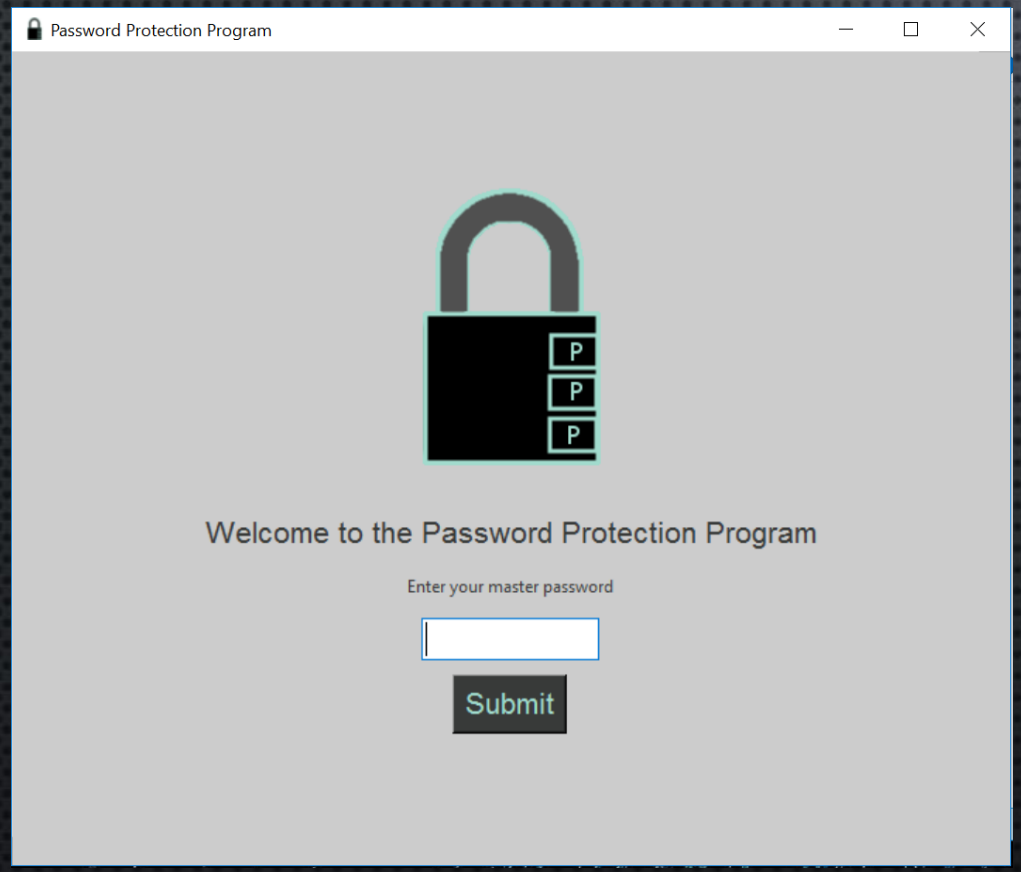
- Offline, Desktop Implementation
- One master account
- One Factor Authentication
- All implementation using python libraries
- Python Cryptography Library

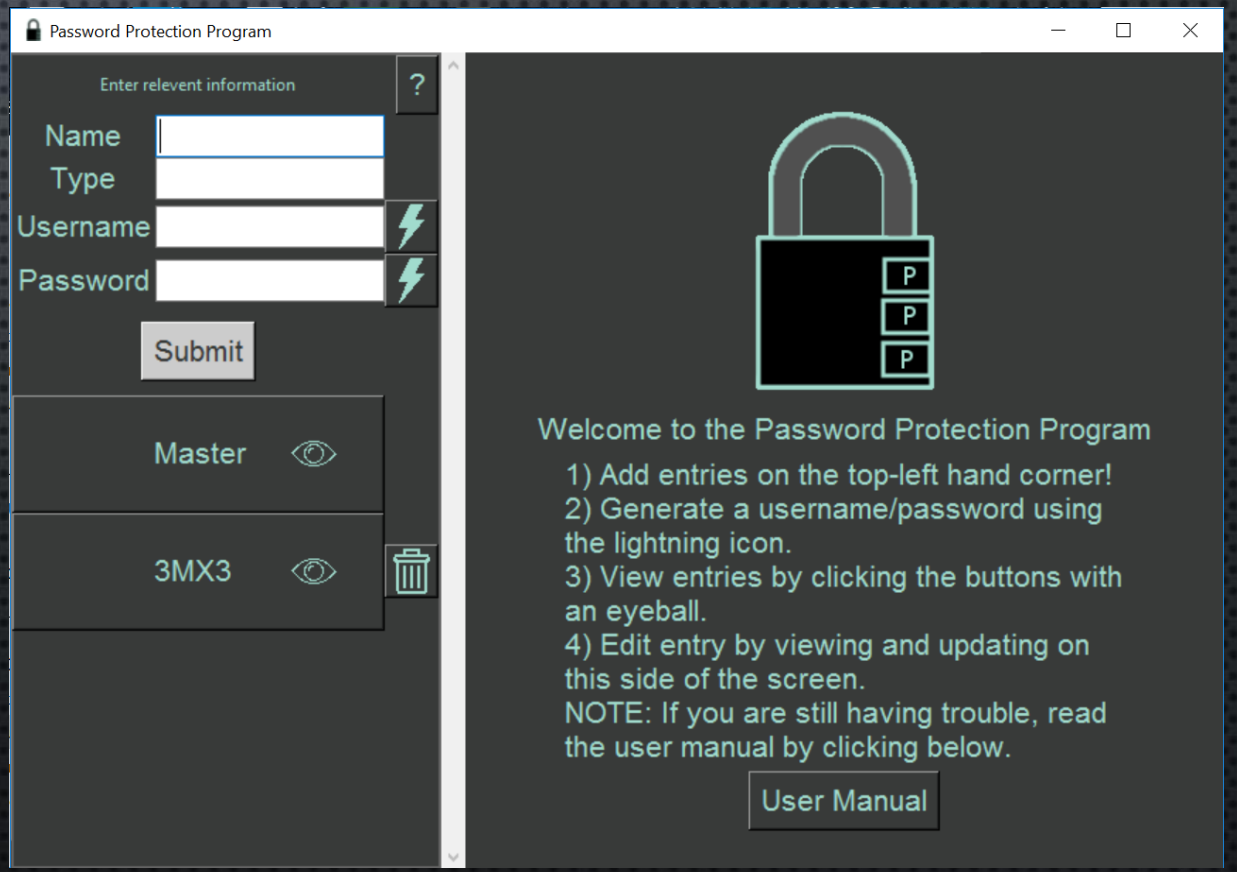
# PADLOCK


Padlock
Application
Settings
Edit
Enter Master Password
Unlock


Padlock
Application
Settings
Edit
3
3MX3
School
username
password
N
New Record
username
password
New Record
No Category
username
Enter Content
password
Enter Content
Enter New Field Name
Enter Content

# DEMONSTRATION



# Implementation

- Encryption – Cryptography
  - key using Key stretching  (PBKDF2HMAC)
  - Fernet Library (AES)
- Database – SQLite, PeeWee
  - Insert, Gets (4), delete, update
- GUI – Tkinter
  - Easy to use because highly documented
  - High fan in

# Non-functional requirements

- Usability
  - Intuitive
  - Instruction/ User Manual
- Appearance
  - Minimalistic (Not many Screens)
  - Separate Sections
- Security
  - Inactivity Timeout
- Robust
- Maintainable
  - modular

# Testing

- GUI
  - Automated and Manual Testing
- Database
  - Automated Testing
- Encryption and Random Password Generation
  - Automated Testing
  - Cannot Test Security or Randomness

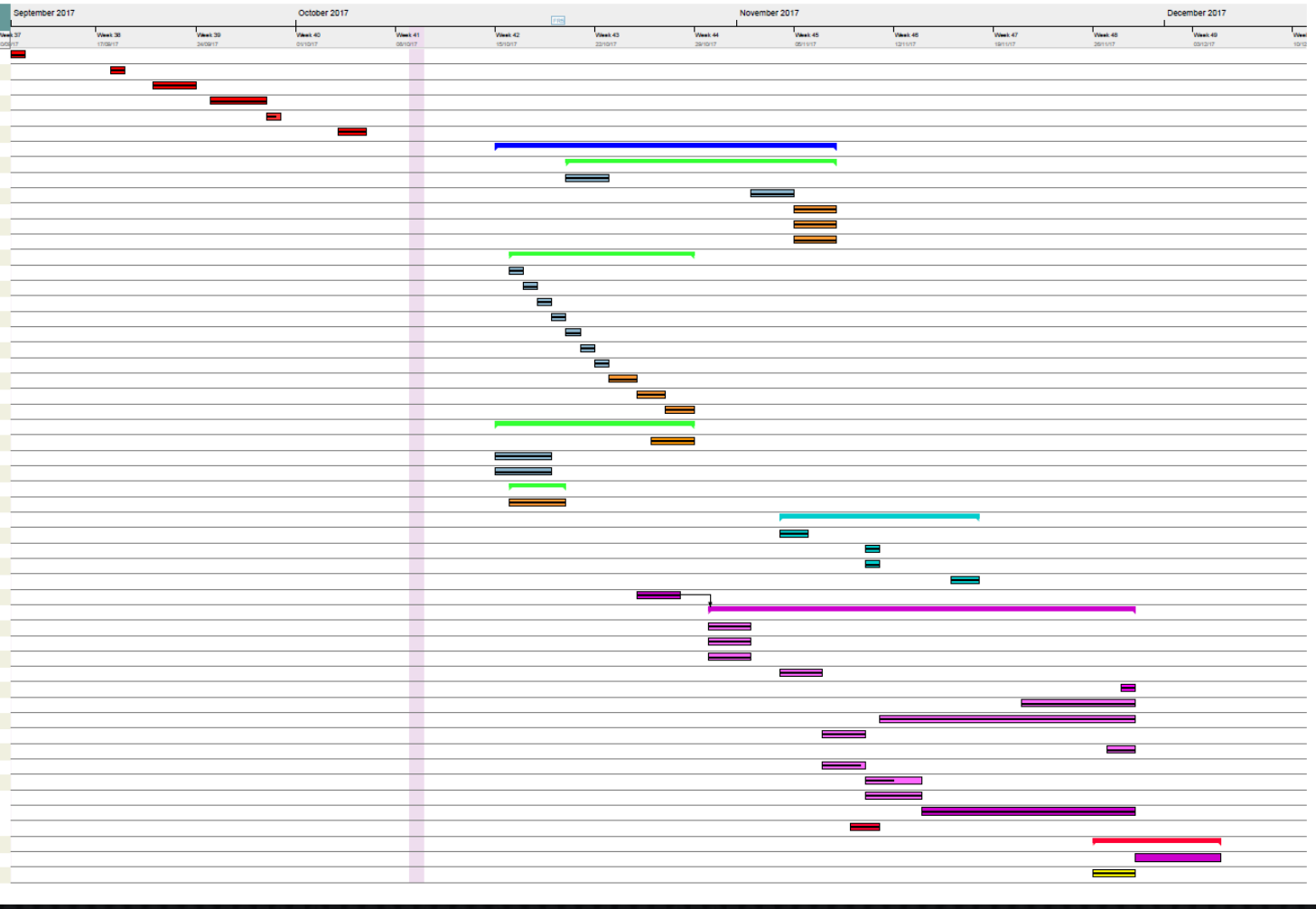
# PROJECT SCHEDULE

**PasswordProtectionProgram** 28-Nov-2017

## Gantt Chart

6

| Name | Begin date | End date |
|---|---|---|
| Team Formation | 11/09/17 | 11/09/17 |
| Project Approval | 18/09/17 | 18/09/17 |
| Problem Statement | 21/09/17 | 23/09/17 |
| Development Plan | 25/09/17 | 28/09/17 |
| Gantt Chart | 29/09/17 | 29/09/17 |
| Requirements Document | 04/10/17 | 05/10/17 |
| Prototype 1 | 15/10/17 | 07/11/17 |
| System Design | 20/10/17 | 07/11/17 |
| FR6 | 20/10/17 | 22/10/17 |
| FR8 | 02/11/17 | 04/11/17 |
| Performance Require... | 05/11/17 | 07/11/17 |
| Operational and Envi... | 05/11/17 | 07/11/17 |
| Maintainability and S... | 05/11/17 | 07/11/17 |
| User Interface | 16/10/17 | 28/10/17 |
| FR1 | 16/10/17 | 16/10/17 |
| FR3 | 17/10/17 | 17/10/17 |
| FR4 | 18/10/17 | 18/10/17 |
| FR5 | 19/10/17 | 19/10/17 |
| FR7 | 20/10/17 | 20/10/17 |
| FR9 | 21/10/17 | 21/10/17 |
| FR10 | 22/10/17 | 22/10/17 |
| Look and Feel Requir... | 23/10/17 | 24/10/17 |
| Usability and Humani... | 25/10/17 | 26/10/17 |
| Unserstandability an... | 27/10/17 | 28/10/17 |
| Encryption | 15/10/17 | 28/10/17 |
| Security Requirements | 26/10/17 | 28/10/17 |
| FR11 | 15/10/17 | 18/10/17 |
| FR12 | 15/10/17 | 18/10/17 |
| Database | 16/10/17 | 19/10/17 |
| FR2 | 16/10/17 | 19/10/17 |
| Issues | 04/11/17 | 17/11/17 |
| Integrate DB with GUI | 04/11/17 | 05/11/17 |
| Save encryption key | 10/11/17 | 10/11/17 |
| Get functions | 10/11/17 | 10/11/17 |
| Integrate GUI with encry... | 16/11/17 | 17/11/17 |
| Test Plan | 25/10/17 | 27/10/17 |
| Test | 30/10/17 | 28/11/17 |
| Master Password | 30/10/17 | 01/11/17 |
| Adding Entries | 30/10/17 | 01/11/17 |
| Navigation | 30/10/17 | 01/11/17 |
| Encryption | 04/11/17 | 06/11/17 |
| GeneratePassword | 28/11/17 | 28/11/17 |
| Database | 21/11/17 | 28/11/17 |
| Look and Feel | 11/11/17 | 28/11/17 |
| Personalization | 07/11/17 | 09/11/17 |
| Understandability and P... | 27/11/17 | 28/11/17 |
| Performance | 07/11/17 | 09/11/17 |
| Operational and Enviro... | 10/11/17 | 13/11/17 |
| Security | 10/11/17 | 13/11/17 |
| Test Fixes | 14/11/17 | 28/11/17 |
| Design Document | 09/11/17 | 10/11/17 |
| Final Documentation | 26/11/17 | 04/12/17 |
| Test Report | 29/11/17 | 04/12/17 |
| Users Guide | 26/11/17 | 28/11/17 |



# Future Plans

- "Forgot master password"
  - Possibly 2 factor authentication
- Security requirements for changing master password
- Sorting by account types
- Searching