# Pinnacle Labs Cybersecurity Internship

**Intern Name:** JISHNU DIPAK PATIL  
**Task No. 3 – Password Analyzer**

**Internship Duration:** June 2025 – July 2025  
**Project Title:** Password Analyzer

**TRACK** : Cybersecurity

### ✏️ Objective:

To design and develop a utility that evaluates the strength of user passwords in real time, detects weak patterns, and provides actionable suggestions to improve password security.

### 🔍 Project Description:

The Password Analyzer is a GUI-based Python application that helps users identify how secure their passwords are. Built using the Tkinter library, it checks for length, complexity, character variety, and commonly used patterns. It provides a clear strength score and tips for improvement, making it ideal for both awareness training and personal use.

**Core Functionalities:**

* Analyzes password in real time
* Detects weak patterns (like ‘123456’, ‘qwerty’)
* Checks for missing character types (uppercase, lowercase, digit, symbol)
* Offers a color-coded strength meter
* Suggests improvements to the user

### ✨ Key Features:

* 🔍 Real-Time Analysis
* 📊 Strength Meter (Progress Bar)
* 🧠 Intelligent Suggestions
* 👁️ Show/Hide Password Toggle
* 💡 Modern Dark-Themed Interface
* 📁 Lightweight and Offline Compatible

### 🧰 Technologies Used:

| Technology | Purpose |
| --- | --- |
| Python 3.8+ | Programming Language |
| Tkinter | GUI Toolkit |
| Regex (re) | Password Pattern Matching |
| ttk Styling | Enhanced Widgets & UI |
| Git/GitHub | Version Control & Collaboration |
| VS Code / Thonny | Code Editing and Testing |

### ▶️ How It Works:

1. User inputs a password into the app
2. The system analyzes the password in real time
3. Visual feedback is displayed via a progress bar and color code
4. Suggestions for strengthening the password appear immediately
5. Final classification: Weak ❌, Moderate ⚠️, or Strong ✅

### 📊 Sample Use Case:

**Input:** admin123  
**Output:** Weak  
**Suggestions:** Add uppercase letters, special characters, avoid common patterns

**Input:** T!g3r@2025$  
**Output:** Strong  
**Suggestions:** None – secure password

### 📅 Internship Task Submission:

* **Task No:** 3
* **Project GitHub Repo:** <https://github.com/cyberjishnu/Jishnu-patil-Password-Analyzer>
* **Demo Video:** <https://www.linkedin.com/posts/jishnu-patil-7681b1294_pinnaclelabs-cybersecurity-passwordsecurity-activity-7338834793960243200-HzKp?utm_source=social_share_send&utm_medium=member_desktop_web&rcm=ACoAAEc4UgABgShZdiMzWhqBZSnOLtBx2ghXwks>

### 💼 Learning Outcomes:

* Built a real-time password evaluation utility using Python and Tkinter
* Gained deeper understanding of password security and common vulnerabilities
* Practiced GUI design and user-centric application development
* Experienced working on a focused cybersecurity problem

### 📄 Conclusion:

This project was a valuable learning experience. It combined technical knowledge with cybersecurity awareness to build a practical tool. The Password Analyzer is easy to use, informative, and serves as an excellent demonstration of both Python and security fundamentals. It reinforced the importance of user-friendly security tools and highlighted the role of strong credentials in defending against attacks.