■ Password Strength Analyzer & Custom Wordlist Generator

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■ Overview

The Password Strength Analyzer & Custom Wordlist Generator is a Python-based tool designed for ethical cybersecurity research. It evaluates password strength using the zxcvbn library (when available) and generates targeted wordlists for auditing or penetration testing based on user-provided data such as names, dates, and keywords. This project demonstrates applied knowledge of password entropy, attacker modeling, and secure wordlist-based testing methodologies.

■ Key Features

• ■ Password Analysis: Evaluate password strength with zxcvbn or a built-in entropy calculator.
• ■ Custom Wordlist Generator: Combine user data (names, pets, dates) with variations such as capitalization, leetspeak, and appended years.
• ■ Exportable Output: Save generated wordlists as .txt for use with tools like john or hashcat.
• ■ Ethics First: Built for educational and authorized testing environments only.
• ■ CLI-First Design: Simple command-line interface with clear, scriptable commands.

■ Tech Stack

Component	Technology
Language	Python 3.8+
Libraries	zxcvbn (optional), argparse, itertools, nltk (optional)
Output	Plain .txt wordlists
OS Compatibility	Windows / Linux / macOS

■ Installation & Setup

1. Create (optional) and activate a virtual environment

```
bash
python -m venv venv
# Windows
venv\Scripts\activate
# Linux/macOS
source venv/bin/activate
```

2. Install dependencies

```
bash
pip install zxcvbn nltk
# If you only need the analyzer without zxcvbn, it's optional:
# pip install nltk
```

■ Usage

All commands assume you are in the project folder and your Python environment is active.

1) Analyze a password (CLI)

```
bash
```

```
python password_strength_wordlist_tool.py analyze --password "MyP@ssw0rd123"
```

Example output

```
--- Password Analysis ---
zxcvbn score: 2 / 4
Estimated crack time (offline_fast_hashing): less than a second
Entropy: 58.99 bits
Strength: Reasonable
Feedback: ['Add another word or two...', "...'@' instead of 'a' doesn't help much"]
```

Notes:

- Make sure you have permission before using generated wordlists for testing against systems.
- This project is for ethical and educational purposes only.