PYTHON PROJECT IDEAS

<https://www.practicepython.org/>

<https://www.hackerrank.com/domains/python>

And if you find a programming exercise/project that you like but you know how to do ask chatgpt to come up with 10 modifications that require learning one new skill that is appropriate.

For example, maybe we are making a "wordle solving" expert system:

1. Implement a User Interface (UI) Modification: Create a graphical user interface (GUI) using libraries like tkinter or PyQt. Learning Outcome: Learn about event-driven programming and how to build desktop applications in Python.
2. Add a Dictionary API Integration Modification: Integrate a dictionary API (like Merriam-Webster or Oxford) to provide definitions for guessed words. Learning Outcome: Gain experience with API requests and handling JSON data.
3. Implement a Web Scraper Modification: Build a web scraper to gather a list of valid Wordle words from an online source. Learning Outcome: Learn web scraping techniques using libraries like BeautifulSoup or Scrapy.
4. Add Difficulty Levels Modification: Introduce different difficulty levels (easy, medium, hard) by adjusting the length of words or the number of guesses allowed. Learning Outcome: Understand how to manage game states and conditions.
5. Machine Learning for Word Suggestions Modification: Use a machine learning model to suggest the next best guess based on previous guesses and feedback. Learning Outcome: Explore basic machine learning concepts and libraries such as scikit-learn.
6. Parallel Processing Modification: Optimize the program using parallel processing to handle large datasets of words more efficiently. Learning Outcome: Learn about Python's multiprocessing module and how to write efficient, concurrent code.
7. Create a Mobile App Modification: Develop a mobile version of your Wordle solver using frameworks like Kivy or BeeWare. Learning Outcome: Gain experience in mobile application development and cross-platform compatibility.
8. Enhanced Analytics and Statistics Modification: Implement features to track and display statistics such as average guesses, win/loss ratio, and most guessed words. Learning Outcome: Learn how to collect, store, and visualize data.
9. Voice-Controlled Interface Modification: Add voice recognition capabilities to input guesses and receive feedback. Learning Outcome: Explore voice recognition technologies using libraries like SpeechRecognition and pyttsx3.
10. AI Opponent Modification: Create an AI opponent that plays against the user, guessing words based on a predefined strategy. Learning Outcome: Delve into game theory and AI algorithm design.