1. Number Guessing Game

What you'll learn: Variables, input/output, conditionals, loops
Task:

- The program randomly selects a number between 1–100

- The user guesses until correct

- Print "too high" or "too low" after each guess

Requirements:

- Use random

- Count number of attempts

Extensions:

- Add difficulty levels

- Limit number of guesses

2. Simple Calculator

What you'll learn: Functions, conditionals
Task:

- Take two numbers and an operator (+ - * /)

- Return the calculated result

Requirements:

- Handle division by zero

- Use functions

Extensions:

- Add power and modulus

- Loop until user exits

3. Word Counter

What you'll learn: Strings, dictionaries
Task:

- Ask the user for a sentence

- Count how many times each word appears

Requirements:

- Ignore case

- Remove punctuation

Extensions:

- Sort results by frequency

- Save output to a file

4. To-Do List (Console App)

What you'll learn: Lists, loops
Task:

- Add, remove, and view tasks

Requirements:

- Menu-driven interface

- Tasks stored in a list

Extensions:

- Mark tasks as completed

- Persist data using a file

5. Password Strength Checker

What you'll learn: Strings, conditions, regex
Task:

- Check if a password is strong

Requirements:

- Minimum length

- Uppercase, lowercase, number, symbol

Extensions:

- Score password strength

- Suggest improvements

6. File-Based Contact Manager

What you'll learn: File I/O, dictionaries
Task:

- Add, search, and delete contacts

Requirements:

- Store contacts in a .json or .txt file

Extensions:

- Update contacts

- Sort alphabetically

7. Dice Rolling Simulator

What you'll learn: Randomization, loops
Task:

- Simulate rolling one or more dice

Requirements:

- Ask user how many dice

- Print results

Extensions:

- Show roll statistics

- ASCII dice visuals

8. Simple Quiz Application

What you'll learn: Data structures, control flow
Task:

- Ask multiple-choice questions

- Track and display score

Requirements:

- Questions stored in a list or dictionary

Extensions:

- Timer per question

- Load questions from file

9. Web Scraper

What you'll learn: HTTP requests, HTML parsing
Task:

- Scrape titles from a website

Requirements:

- Use requests and BeautifulSoup

- Handle errors gracefully

Extensions:

- Save data to CSV

- Scrape multiple pages

10. REST API Client

What you'll learn: APIs, JSON handling
Task:

- Fetch and display data from a public API

Requirements:

- Parse JSON

- Handle failed requests

Extensions:

- Cache responses

- Build CLI arguments

11. Object-Oriented Banking System

What you'll learn: OOP, classes, encapsulation
Task:

- Create Account, SavingsAccount, User classes

Requirements:

- Deposit, withdraw, transfer

- Prevent invalid transactions

Extensions:

- Add transaction history

- Persist accounts to database/file

12. Multithreaded Task Scheduler

What you'll learn: Concurrency, threading
Task:

- Run multiple tasks in parallel

Requirements:

- Use threading or asyncio

- Log start/end times

Extensions:

- Priority-based tasks

- Graceful shutdown handling