Absolutely! Here are some assignments based on basic Python programming to help you practice and reinforce your skills:

### Assignment 1: Basic Syntax and Control Structures

1. \*Hello, World!\*:

- Write a program that prints "Hello, World!" to the console.

2. \*Simple Calculator\*:

- Create a program that takes two numbers as input and performs addition, subtraction, multiplication, and division.

3. \*Odd or Even\*:

- Write a program that checks if a given number is odd or even.

4. \*Factorial Calculation\*:

- Write a function to calculate the factorial of a number using a loop.

### Assignment 2: Data Structures

1. \*List Operations\*:

- Create a list of numbers and write functions to:

- Find the sum of all elements.

- Find the maximum and minimum values.

- Reverse the list.

2. \*Dictionary Practice\*:

- Create a dictionary to store the names and ages of five people. Write functions to:

- Add a new person.

- Remove a person by name.

- Find the age of a specific person.

3. \*Set Operations\*:

- Create two sets of numbers and write functions to perform union, intersection, and difference operations.

### Assignment 3: Functions and Modules

1. \*Prime Number Checker\*:

- Write a function to check if a number is prime.

2. \*Palindrome Checker\*:

- Write a function to check if a given string is a palindrome.

3. \*Module Creation\*:

- Create a module named math\_operations.py that includes functions for addition, subtraction, multiplication, and division. Import and use this module in another script.

### Assignment 4: File Handling

1. \*File Reader\*:

- Write a program that reads a text file and prints its contents to the console.

2. \*File Writer\*:

- Write a program that takes user input and writes it to a text file.

3. \*CSV Reader\*:

- Write a program that reads a CSV file and prints the contents in a formatted manner.

### Assignment 5: Error Handling

1. \*Division with Error Handling\*:

- Write a program that takes two numbers as input and performs division. Handle the ZeroDivisionError gracefully.

2. \*File Not Found\*:

- Write a program that attempts to open a file. Handle the FileNotFoundError if the file does not exist.

### Assignment 6: Advanced Problems

1. \*Fibonacci Sequence\*:

- Write a function to generate the first n numbers in the Fibonacci sequence.

2. \*List Comprehensions\*:

- Use list comprehensions to create a list of squares of numbers from 1 to 10.

3. \*Lambda Functions\*:

- Write a program that uses lambda functions to sort a list of tuples based on the second element.

### Assignment 7: Object-Oriented Programming

1. \*Class Creation\*:

- Create a class Rectangle with attributes length and width. Include methods to calculate the area and perimeter.

2. \*Inheritance\*:

- Create a base class Animal with attributes name and sound. Derive two classes Dog and Cat from Animal and override the sound attribute.

### Assignment 8: Libraries and APIs

1. \*\*Using datetime\*\*:

- Write a program that prints the current date and time.

2. \*\*Using random\*\*:

- Write a program that generates a list of 10 random numbers between 1 and 100.

3. \*Simple API Request\*:

- Use the requests library to make a GET request to a public API (e.g., https://api.github.com) and print the response.

Feel free to tackle these assignments at your own pace. If you need any hints or further explanations, don't hesitate to ask! Happy coding! 😊