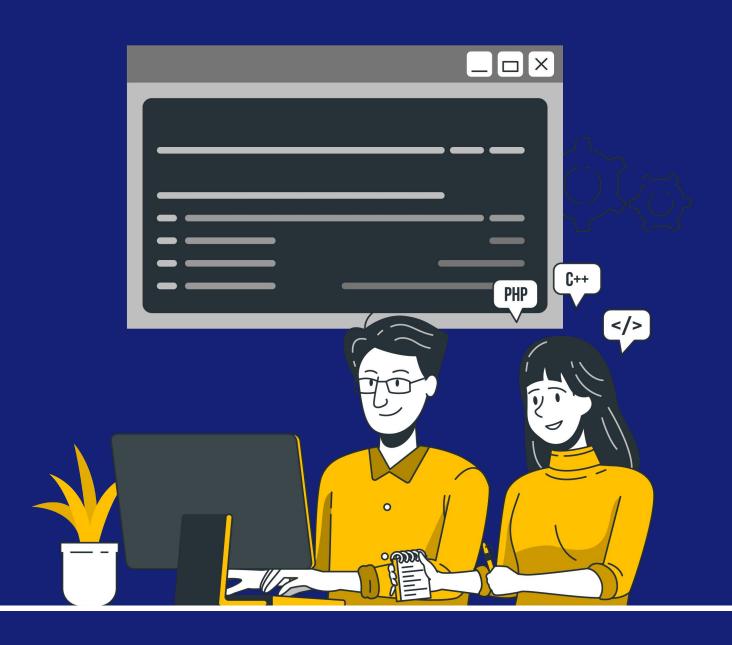


Files & Exceptional Handling

Assignment questions





- 1. Discuss the scenarios where multithreading is preferable to multiprocessing and scenarios where multiprocessing is a better choice.
- 2. Describe what a process pool is and how it helps in managing multiple processes efficiently.
- 3. Explain what multiprocessing is and why it is used in Python programs.
- 4. Write a Python program using multithreading where one thread adds numbers to a list, and another thread removes numbers from the list. Implement a mechanism to avoid race conditions using threading.Lock.
- 5. Describe the methods and tools available in Python for safely sharing data between threads and processes.
- 6. Discuss why it's crucial to handle exceptions in concurrent programs and the techniques available for doing so.
- 7. Create a program that uses a thread pool to calculate the factorial of numbers from 1 to 10 concurrently. Use concurrent.futures.ThreadPoolExecutor to manage the threads.
- 8. Create a Python program that uses multiprocessing. Pool to compute the square of numbers from 1 to 10 in parallel. Measure the time taken to perform this computation using a pool of different sizes (e.g., 2, 4, 8 processes).