Asynchronous Programming Solutions

Asynchronous Programming

- What is the difference between starting a task synchronously and starting it asynchronously?
  - When a task is started synchronously, we must wait for it to finish before we can perform any more operations in the current task
  - When the task is started asynchronously, we can continue performing operations in the current task without waiting for the asynchronous task to finish

Blocking and non-blocking operations

- What is meant by a blocking operation, in a multi-threaded program?
  - A blocking operation is one that stops the thread until the operation is complete. For example, locking a mutex.
- Briefly explain how asynchronous programming can be used to avoid blocking operations
  - Instead of performing an operation directly, the thread puts a message on a queue
  - The operation is performed when the message is removed from the queue
  - The original thread can continue running without waiting for the operation to complete