Faculty of Science, Engineering and Technology

Concurrent Programming

Credit Task 07: Latch

Overview

A Latch is used to block threads, until it is opened. Once open, it remains open and all threads can proceed though the Latch.

Credit Task 07 — Submission Details and Assessment Criteria

You must submit the following files to Doubtfire:

- Latch source code (Latch.cs)
- Latch Test class (LatchTest.cs)

Instructions

Create a Latch class in your *concurrent utilities library*. Implement the following features:

- Use a Semaphore internally
- **Acquire** blocks a thread until the Latch is released.
- **Release** the latch, and all threads (past and future) can proceed without waiting further.
- Ensure that all public features, including the class, have XML documentation.

Create a Latch Test class that demonstrates the use and features of a Latch. In this case the features you want to demonstrate are:

- Threads that arrive before the Latch is released all wait.
- Once released, all blocked threads proceed.
- Threads that acquire the Latch after release proceed without blocking.

Note: Make sure the output show if the Latch is/isn't working correctly. Lots of fast output is bad!