

Lab 10: Asynchronicity

COSC 3020: Algorithms and Data Structures

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Instructions

Attempt to finish the tasks below during the lab time. You have until Friday, 9 December 2022, 23:59h to submit the solutions to WyoCourses. You may ask your TA for feedback before submitting, but this feedback will be qualitative only.

You may *not* use external libraries in your code unless explicitly stated.

1 Asynchronous Functions

Implement a function that takes an array and a key to search for and counts the number of times key matches an element in the array (the count matches function we talked about in lectures). Your implementation must count the number of matches asynchronously, but does not need to do so in parallel. What type of asynchronous execution you choose is up to you.

The `async` library (<https://caolan.github.io/async/v3/>) may be helpful with this; you are explicitly allowed and encouraged to use it.

Total 8 points.

2 Analysis

What is the time complexity of your implementation (worst-case Θ)?

Total 2 points.