

1. Multithread find

You are assigned to use c++ to implement a find function which searches recursively under a certain directory to find files contain a given string. The result is returned in a vector of strings. The search is supposed to happen in a multithreading way.

You are only allowed to use c++ multithreading libraries to write your code.

2. Numpy matrix multiplication

You are assigned to use cpython and numpy api to implement matrix multiplication. The matrix multiplication algorithm is supposed to be written in c/c++, which you need to implement on your own.

On the Python side, function `my_mul` will take in two numpy arrays. When `my_mul` is called, it will call the c/c++ function and pass the numpy arrays to it. The c/c++ function will do matrix multiplication and return the resulting matrix to `my_mul`.

You are only allowed to use cpython and numpy API to finish your code.

The code challenge is supposed to be finished in 24 hours

Please take care of:

Your coding style

Finding the right way for solving the challenge

How do you handle errors and exceptions