

Hopper Home Assignment

Please implement your solution in an object-oriented programming language (e.g. Java, C#, etc.)

We value your time and recommend spending no longer than 3 hours on the test. Please submit your solution even if you don't finish the test.

Concurrent URL Downloader

1. Implement a CLI based concurrent URL downloader, while considering the following:
 - The executable should run on mac/linux.
 - The CLI is to receive a single JSON configuration file where a number of options will be specified:
 - A list of URLs to download
 - A max download time per URL
 - The output directory where to save the downloaded files
 - Max number of concurrent downloads
 - The download process should take place *concurrently*, that is, the total running time should not amount to the *sum* of all individual downloads.
 - Additional options of your choice
 - Failures in downloading a single URL should not fail other download
 - Please log errors and important system message
 - Please log each download's duration, and the total download time (i.e., the total wall-clock duration for all of the downloads). The messages should be printed in "completion order", i.e., if download x finished before download y, the printout of x should come before the printout of y.
2. **BONUS:** Implement an integration test suite which includes a server component against which the downloader will execute so the test can assert desired behavior.

Assumptions:

- You may assume the output directory is empty upon each execution