**Assignment 5 – Part 1. Concurrency**

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Introduction

In the context of computer science, concurrency, is the ability for a program to be decomposed into parts such that they can run independently of each other. This means that tasks can be executed out of order and the results would still be the same if they are executed in order. The idea is similar to parallel processing, but with the possibility of many independents’ jobs doing different things at once rather than executing the same job. Thus, one of the key benefits of implementing concurrency is to reduce the time it takes for running and executing a program.

In order to test this claim, we designed an experiment to measure the performance increase of **pmap** over **map** – using the performance on map as a baseline. Specifically, we are trying to test if the **pmap** function, in general, is faster at executing simple calculations on the rows of a data frame in comparison to the **map** function.

Implementation