This course has been archived (Saturday, 17 December 2022, 00:00).

Course
CS-E4110
Course materials
Your points
MyCourses
Zulip Chat

This course has already ended.
The latest instance of the course can be found at: Concurrent Programming: 2023

« 1 Concurrency basics -- Basics of concurrent computing. Course materials 3 Atomic Integer -- Atomic operation basics using Atomic Integer. »
CS-E4110 / Round 1 - Scala concurrency - Part 1 / 2 Threads -- Low-level concurrency basics using Threads.

Assignment description | My submissions (5/10)

Threads -- Low-level concurrency basics using Threads.

Threads

Computer systems are expected to support multitasking. For example, a personal computer is expected to play music, edit text, fetch and notify email all at the same time. Even a single application such as an audio player has to do multiple tasks at the same time including fetching a stream containing music, decompressing the music and accepting user commands simultaneously. Such software is called concurrent software. Many programming languages such as Scala and Java have a built-in support for programming concurrent applications.

One of the basic units of execution in concurrent applications is thread. Threads are the smallest set of instructions that can be executed and managed independently by a computer system.

Code

Download the assignment template here

Task

In this exercise, we implement a parallel map using threads. The task is to start threads that run a function f (passed as a first parameter) on each element of the array passed as a second parameter (as) and produce the return value (bs). Note that you have to create a separate thread to process each element of the array as into bs. Also, remember to start and join all of your threads. Finally, note that Scala inherits its low-level concurrency mechanism including Threads from Java.

Hint

You may use Thread and Runnable. Visit the API from here.

Threads.scala

Choose File No file chosen

Submit

Earned points
25 / 25

Exercise info

Assignment category
Programming exercises

Your submissions
5 / 10

Deadline
Friday, 12 November 2021, 14:00

Late submission deadline
Friday, 19 November 2021, 14:00
(-30%)

Total number of submitters
62

« 1 Concurrency basics -- Basics of concurrent computing. Course materials 3 Atomic Integer -- Atomic operation basics using Atomic Integer. »