This course has been archived (Saturday, 17 December 2022, 00:00).

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

« Round 4 - Concurrency frameworks | Course materials | 2 Roundrobin -- Creating children and forwarding messages. »

CS-E4110 / Round 4 - Concurrency frameworks / 1 Calculator -- A simple calculator using Akka actors.

Assignment description | My submissions (1/10)

Calculator -- A simple calculator using Akka actors.

Calculator

So far we have been working with concurrent programming abstractions that assume the presence of shared memory. This assumption was important to ensure that the concurrency abstractions (facilities) are efficient. However, it also limits them from being applicable in a distributed system. Another programming model that is suitable for distributed systems is the actors model. In this model, a program is represented by a set of entities called actors that execute computations independently and communicate using message passing. Akka is a framework that implements such actors model.

Actors are an essential part of any message passing framework including Akka. Actors rely on messages to communicate and collaborate amongst themselves. Therefore message sending and receiving is an essential part of any program written in such a programming model (i.e. message passing programming model).

Code

Download the assignment template here

Task

In this exercise, we implement (define) a simple calculator using Akka actors. The calculator should have an initial state of zero. It handles the operations `Assign(), Add(), Multiply() and Clamp()`, which all alter the current state. It should send the result of every calculation back to the requester.

Note

Akka Classic actor APIs are used instead of the newer Akka Typed actor APIs in the exercise.

Hint

For more information on defining an Akka actor please see here.

Calculator.scala

Choose File No file chosen

Submit

Earned points
25 / 25

Exercise info

Assignment category
Programming exercises

Your submissions
1 / 10

Deadline
Wednesday, 1 December 2021, 14:00

Late submission deadline
Wednesday, 8 December 2021, 14:00 (-30%)

Total number of submitters
51

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