¡Insert Title¿
IN4355 - Functional Programming

David Hartveld - 1181092

Johan Laanstra - 1509268

Michael de Jong - 1314793

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1 Introduction

Functional programming is increasingly used in programming languages. Besides new functional languages such as Scheme, Haskell and Scala, functional programming concepts are also added to existing non-functional languages. An example of this is LINQ (Language Integrated Query) and its use of lambdas in C#, but there are lots of other non-functional languages who support some form of functional programming constructs. To get familiar with functional programming principles and languages we built a small grid computing framework to do map-reduce computations. MapReduce is in spired by the map and reduce functions commonly used in functional programming.

This article focuses on the functional aspects, details, pitfalls and shortcomings of languages we cam accross while building the grid computing framework with functional languages. We will discuss the implementation of a simple map-reduce algorithm and how we distributed the map and reduce steps over connected clients. We chose word count as the algorithm to implement, because of its simplicity and the clearly defined operations for the map and reduce steps. Johan

2 Map-Reduce

¡hoe werkt het wat is het¿ Michael

3 Grid computing

Grid computing is a form of distributed computing where clients donate computing power to solve problems that to big to solve for a single machine. One of the most famous grid computing projects is SETI@Home (Search for Extraterrestrial Intelligence), in which PC users donate unused CPU cycles to find signs of extraterrestrial life in signals from outer space. The grid exists of all participating client and can be seen as a super virtual computer. The clients in a grid are mostly not connected to each other.

Grid computing has several advantages compared to super computers. Since programs run on normal pc hardware, no special software is needed. Also debugging is a lot easier since this can be done on a single client. Grid computing eliminates the complexity of shared memory and shared storage space.

Johan

4 So we heard you like platforms.

4.1 Components

David

4.2   How does it work?

Johan

5   Fay: Fay ain't yavascript

Michael

6   Distributed sort

Johan

7   Scala

David Michael

8   Future work

David

References

9 Appendix A: Analysis of Game of Thrones word count