Proving Algebraic Properties with Stainless

Romain Ruetschi

June 9th, 2017

Contents

1 Introduction

2 Type classes

2.1 Definition

2.2 Type classes in Scala

2.3 Type classes in PureScala

3 Coherence

4 References

[1] Arvidsson, A. and Touche, R. 2016. *Proving Type Class Laws in Haskell*. Chalmers University of Technology, University of Gothenburg.

[2] Hall, C.V. et al. 1996. Type classes in haskell. *ACM Trans. Program. Lang. Syst.* 18, 2 (Mar. 1996), 109–138.

[3] Wadler, P. and Blott, S. 1989. How to make ad-hoc polymorphism less ad hoc. *Proceedings of the 16th acm sigplan-sigact symposium on principles of programming languages* (New York, NY, USA, 1989), 60–76.

5 Appendix