

An Agda Tutorial

Misao Nagayama
m-nagayama@aist.go.jp

Hideaki Nishihara
hide.a.kit@ni.aist.go.jp

Makoto Takeyama
makoto.takeyama@aist.go.jp

Research Center for Verification and Semantics (CVS)
National Institute of Advanced Industrial Science and Technology (AIST)
Japan

May 12, 2006

Contents

1	Introduction.	5
1.1	What is <code>agda</code> ?	5
1.2	A brief history of <code>agda</code>	5
1.3	Who reads this document?	5
1.4	Notations	5
1.5	Acknowledgement	6
1.6	New Features	7
1.6.1	Syntax	7
1.6.2	Commands	9
1.6.3	Libraries	9
2	A minimal set of commands – Start, load, and quit	10
3	Introduction to the Agda language	13
3.1	Data types	13
3.1.1	Examples	13
3.1.2	Typecheck	14
3.1.3	Syntax	14
3.1.4	Type notations	15
3.1.5	Identifiers	15
3.1.6	Exercises	15
3.2	Functions	16
3.2.1	Examples	16
3.2.2	Application	17
3.2.3	Typecheck	17
3.2.4	Computation	17
3.2.5	Definitions	19