



INTRODUCTION TO HASKELL PROGRAMMING

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INTENDED AUDIENCE: Any one interested in learning this language

INDUSTRY SUPPORT: Would be useful in any industry requiring a good understanding of programming, algorithms and data structures.

COURSE OUTLINE

Functional programming is an elegant, concise and powerful programming paradigm. This style encourages breaking up programming tasks into logical units that can be easily translated into provably correct code. Haskell brings together the best features of functional programming and is increasingly being used in the industry, both for building rapid prototypes and for actual deployment.

ABOUT INSTRUCTOR

Prof. S P Suresh studied at REC Trichy (MCA) and The Institute of Mathematical Sciences (PhD). He has been a faculty member at the Chennai Mathematical Institute since 2004, currently an Associate Professor. His main research interests are logic in computer science, formal methods for security and proof theory

COURSE PLAN

- Week 1** : Introduction to Haskell and the ghci interpreter
- Week 2** : Defining functions: guards, pattern matching and recursion
- Week 3** : Lists, strings and tuples
- Week 4** : Types and polymorphism
- Week 5** : Higher order functions on lists: map, filter, list comprehension
- Week 6** : Computation as rewriting, lazy evaluation and infinite data structures
- Week 7** : Conditional polymorphism and type classes
- Week 8** : User defined datatypes: lists, queues, trees
- Week 9**: Input/output and the ghc compiler
- Week 10**: Arrays