INTRODUCTION TO
HASSELL PROGRAMMING

PROF. S P SURESH
Department of Computer Science and Engineering
Chennai Mathematical Institute

TYPE OF COURSE : Rerun | Elective | UG/PG
INTENDED AUDIENCE : Any one interested in learning this language

COURSE DURATION : 8 weeks (26 Jul’21 - 17 Sep’21)
EXAM DATE : 26 Sep 2021

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