Week 1 – Introduction

Programming Domains

* Scientific applications – many floating point computations (Fortran)
* Business applications – reports, decimals and characters (COBOL)
* Artificial intelligence – symbols rather than numbers (Lisp)
* Systems programming – efficiency for continuous use (C)
* Web software – markup languages, scripting, etc (XHTML, JavaScript)\

Evaluation criteria

* Readability – how easy code is to read
* Writability – how easy code is to learn to write
* Reliability – code conforms to specifications in all scenarios
* Cost – how expensive the code is to implement and maintain.

Language characteristics

* Simplicity – finite, manageable set of features and constructs; less multiplicity and overloading
* Orthogonality – degree to which primitive constructs can be combined with other primitives
* Syntax design - Readability, Writability, Reliability
* Data types - Readability, Writability, Reliability
* Support for abstraction - Writability, Reliability
* Expressivity - Writability, Reliability
* Type checking - Reliability
* Exception handling - Reliability
* Restricted aliasing - Reliability
  + Note: cost has little to no influence on these factors