

Topics for Final Exam - I

- Introduction and Language Evaluation
- History and Evolution
- Name, Scope, and Binding
 - Variables
 - Binding - Type bindings, Type Checking, type conversion
 - Storage bindings
 - Scope, lifetime
 - Referencing Environments
- Expression Evaluation and Control Flow
 - Operator/ Operand evaluation order, Overloaded operators
 - Type conversions
 - Short-circuit evaluation of conditions
 - Control structures
- Programming Language Syntax
 - concepts, regular expression, context-free grammars
 - Lexical analysis – Scanner
 - Syntactic analysis – Parser

Topics for Final Exam - 2

- Programming Language Semantics
 - Static Semantics, attribute grammar, decoration of parse tree
 - Dynamic semantics, Operational semantics, Denotational semantics
- Functional Programming Foundations
 - Foundations, function application, functional forms
 - Functional programming
 - λ -calculus
 - LISP
 - Scheme
 - Common Lisp
- Logic Programming
 - Formal logic, Symbolic logic, propositions, resolution
 - Prolog
- Subprograms
 - Definitions, characteristics, formal/actual parameters
 - Positional parameters, keyword parameters, default parameters
 - Design issues for subroutines
 - Parameter passing modes and mechanisms, implementations

Topics for Final Exam - 3

- **Advanced subroutines**
 - Design issues – type check, reference environment
 - Generic subprograms
 - Overloaded subprograms
 - Coroutines
- **Implementing Subprograms**
 - General semantics of calls and returns
 - Implementing “simple” subroutines
 - Call Stack
 - Implementing subroutines with stack-dynamic local variables
 - Nested programs
- **In-classes**
 - Regex (Regular Expressions)
 - Prolog
 - Golang (Go Programming Language)
 - Lua
 - Common Lisp

I've opened all in-class activities for you to review. It is not for grading, DO NOT SUBMIT anything, it will not be graded.
- **Review all the assignments**