

Arbitrarily Long Data Structures:

Lists and Recursion

CMSC 11500

Introduction to Computer Programming

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Roadmap

- Recap: Compound Data & Abstraction
- Arbitrary Length Compound Data
 - Lists: Self-referential data structures
 - Definition, Constructors, and selectors
- Manipulating arbitrary length data
 - Recursion: Self-referential procedures
- Summary

Recap

- Compound Data & Abstraction
 - Beyond numbers
 - Structures combine facets of data
 - Example: (define-struct posn (x y))
 - Constructor: (make-posn x y)
 - Selectors: posn-x, posn-y
 - Establish abstraction barrier between users of data and implementors of data
 - Makes code easier to extend and maintain