Meta-Circular Evaluation: Functions

CMSC 11500
Introduction to Computer Programming
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Roadmap

- Recap: Meta-circular evaluation
- Extending the Evaluator
  - Representing functions
    - Functions as s-expressions
    - Function definitions
      - Data structure and definition
    - Evaluating with functions
      - From one to many
- Summary

Recap: Meta-circular Evaluation

- Writing scheme code to evaluate scheme code
- Representing scheme expressions:
  - A scheme-expression (s-exp):
    - 1) number
    - 2) symbol
    - 3) (make-add s-exp s-exp)
    - 4) (make-mull s-exp s-exp)
  - Template:
    - (define (fn-for-sexp sexp)
      - (cond ((number? sexp) ...
      - ((symbol? sexp)...
      - ((add? sexp)...(fn-for-sexp (add-left sexp))(fn-for-sexp (add-right sexp)
      - ((mul? sexp)..(fn-for-sexp (mul-left sexp))(fn-for-sexp (mul-right sexp)