

Abstraction: Procedures as Parameters

CMSC 11500

Introduction to Computer Programming

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Roadmap

- Motivation: Two too similar procedures?
- Procedural Abstraction
 - Laziness is a virtue
 - Procedures as parameters
 - Contracts
 - Unnamed procedures: Lambda
- Scope
 - Binding variables
 - Creating local variables: Let

Two Too Similar Procedures

```
(define (square x) (* x x))
(define (squarelist alon)
  (cond ((null? alon) '())
        (else (cons (square (car alon))
                      (squarelist (cdr alon))))))
```

```
(define (double x) (+ x x))
(define (doublelist alon)
  (cond ((null? alon) '())
        (else (cons (double (car alon))
                      (doublelist (cdr alon))))))
```