



CS3L: Introduction to Symbolic Programming

Lecture 5:
Difference Between Dates Case Study

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Colleen Lewis
colleenL@berkeley.edu



Today

- Helper Procedures
- Review Conditionals
- Difference Between Dates



Helper Procedures

- From Yesterday's Lecture:
 - Bake a cake
 - Make the batter
 - Bake the cake
 - Ice the cake
- Today – Build the house
 - Work with a partner on one piece of paper..
 - Make a high-level plan (with 2-4 helper monkeys)
 - Make a slightly lower-level plan for each helper monkey
 - Turn it in!



Predicates

```
(define (valid-date? day month year)
  (cond
    ((or (< day 1) (> day 31) (< month 1) (> month 12) (<= year 1582)) #f)
    ((= day 31) (member? month '(1 3 5 7 8 10 12)))
    ...
  )
)
```



IF & COND Statements

- return expressions can do “thinking”

```
(if <predicate>
  <>true case>
  <>false case>)
(cond
  (predicate1 return_expression1)
  (predicate2 return_expression2)
  (else      return_expression3))
```



Important Parts of Difference Between Dates

- Sometime solving it by hand is different than in a computer
- Check helper programs to make sure they work!!!! Don't propagate errors!
- Divide and Conquer
- Throw out code!
- Pseudo-code