

CS3L: Introduction to Symbolic Programming

Lecture 4:
Review Conditional & Word Stuff

Summer 2008

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Today

- Review Words and Sentences
- Review Conditionals
- Helper Procedures



Something we'll see a lot of...

- Constructors: procedures to make a piece of data
 - word and sentence
- Selectors: procedures to return parts of that data piece
 - first, butfirst, etc.



Sentence and Word Selectors

- These work on sentences and words
- butfirst
 - give you a sentence (for sentence)
 - give you a word (for a word)
- butlast
 - give you a sentence (for sentence)
 - give you a word (for a word)
- first
 - give you a (always)
- last
 - give you a (always)



Sentence and Word Selectors

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- butfirst
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 - give you a word (for a word)
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IF & COND Statements

```
(if <predicate>
  <true case>
  <false case>)

(cond
  (predicate1 return_expression1)
  (predicate2 return_expression2)
  (else      return_expression3))
```



and, or and not



- and - true only if all are true
- or - true if any are true
- not - true only if the *one* argument is false.

Helper Procedures



- Help make complicated programs simple
 - Believe
 - Make a cake
 - Prepare the cake batter
 - Bake the cake
 - Ice the cake
- ```
(define (make-cake x)
 (ice (bake (make-batter x)))
(define (bake x)
 'you baked))
```

## Prepare the cake batter



- Get Bowl
  - Get Beater
  - Get Ingredients
  - Measuring cups
  - Electricity
- 
- Get bowl
  - Get ingredients
  - Stir

## Bake the Cake



- Heat oven
- Put cake in oven
- Close door

## Prepare the cooked Cake



- Let cool
- Remove from pan
- Ice it