

Lecture 3: Conditionals

CS 51G
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Kim Bruce

Announcements

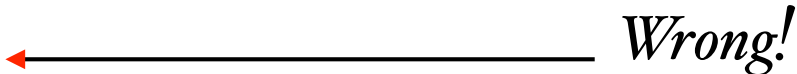
- Ask question when confused.
 - "Truth ariseth more readily from error than from confusion." Francis Bacon
 - Try experiments!
- Lab assignments normally posted by Wednesday morning.
- Discuss Exercise 2.7.7

Issues in Lab

- Scope!
 - Parameters only available in method they are defined in.
 - Disappear when method through executing
 - If need to save value, store in an instance variable.
- Questions?

Indenting

- All statements at the same level should be indented exactly the same amount
- What if too long?
 - Continue on next line, but indent by > 2 characters
 - ```
def x = 3 +
 7
```
  - ```
def x = 3  
+ 7
```

 *Wrong!*

Error if Inconsistent Indenting

- Example:
 - `print "hello"`
 `print "there"`
 - Treated as same as `print "hello" print "there"`
 - Error message:
Syntax error: there is no method `print(_)print(_)`. This statement spans multiple lines; is that what you intended?

Indenting in blocks

- Text in blocks is indented more than outside

```
method onMousePress (point: Point) -> Done {  
  nextLineStarts := point  
  currentColor := colorGen.random  
}
```

- See earlier programs
- Be consistent with indenting

Numbers

- Design a program that draws crosshairs over the current mouse location.

<http://www.cs.pomona.edu/classes/cs051G/demos/CrossHairs/CrossHairs.grace>

- Can do arithmetic

- Click counter example

<http://www.cs.pomona.edu/classes/cs051G/demos/ClickCounter/ClickCounter.grace>

- String interpolation:

- print “value is {x}”
 - Evaluates x, converts to string and inserts it in quoted string

<http://www.cs.pomona.edu/classes/cs051G/demos/MouseMeter/MouseMeter.grace>

Custom Colors

- The colorGen object (from objectdraw) can be used to generate colors
- Built-in: colorGen.red, colorGen.green
- Custom: provide red, green, and blue components between 0 and 255
 - `colorGen.r (255) g (0) b (0) // red`
 - `colorGen.r (250) g (115) b (10) // basketball orange`

Dragging

- Dragging done (too) simply:

<http://www.cs.pomona.edu/classes/cs051G/demos/SimpleDrag/SimpleDrag.grace>

- Dragging should require “grabbing” object:

<http://www.cs.pomona.edu/classes/cs051G/demos/BetterDrag/BetterDrag.grace>

Conditional Statement

- Control whether execute statement

```
if (condition) then {  
    do stuff  
}
```

```
if (condition) then {  
    do stuff  
} else {  
    do other  
}
```

Cond is expression that can be true or false

Building to Basketball

- Basketball with a simple press

- <http://www.cs.pomona.edu/classes/cs051G/demos/BasketBall/BasketBall.grace>

- Basketball with dragging

- <http://www.cs.pomona.edu/classes/cs051G/demos/BetterBasketBall/BetterBasketBall.grace>

Questions?