Outline for May 6, 2009

Reading: text, §8.4–8.6

1. Booleans
   a. Values are True, False
   b. Values considered False: None, False, 0 of any type, empty string, empty list, empty sequence; all others True
   c. Variable assignment
   d. Short-circuit evaluation

2. Operators and truth tables
   a. and, or, not
   b. A and B, A or B, not A
   c. Basic rules of Boolean algebra
      i. A and true == A, A and false == false
      ii. A or true == true, A or false == A
      iii. not (not A) == A
   d. Distributive laws
      i. A or (B and C) == (A or B) and (A or C)
      ii. A and (B or C) == (A and B) or (A and C)
   e. De Morgan’s Laws
      i. not (A or B) == (not A) and (not B)
      ii. not (A and B) == (not A) or (not B)

3. Combining operations
   a. Precedence: who “binds” more tightly
   b. Here, “not” highest precedence; then “and”; then “or”
      i. a or not b and c is (a or ((not b) and c))
   c. Relational operators have higher precedence
      i. a == b and c == d is ((a == b) and (c == d))
   d. Danger: response == "Y" or "y" doesn’t do what you think

4. Other types of loops
   a. break, continue (see loop1.py)
   b. Post-test (repeat … until); put test at bottom
   c. Loop and a half (see loop2.py)
   d. Example (see sent2.py)