

Comparisons

Thomas Schwarz, SJ

Conditions are Booleans

- Conditional expressions are either True or False
- This is called a Boolean
 - To create a Boolean variable:
 - Use the `True` or `False` keywords
 - ```
boolean_variable_one = True
boolean_variable_two = False
```
    - Use comparison operators
      - ```
boolean_variable_three = my_string == "hello world"
```
 - With equality operator `==` which binds stronger than the assignment operator `=`

Conditions

- You can combine boolean variables using the logic operations
 - `and` `&`
 - `or` `|`
 - `not`
- Prefer the English versions
- “Usual” precedence: not before and before or
- Can use parenthesis

Comparisons

- Python has a number of comparison operators
 - For strings:
 - Compare from left to right:
 - Until two characters differ
 - And then decides based on encoding
 - So in English:
 - Capital letters before lower case letters
 - Otherwise: alphabetical ordering

Comparisons

- Comparisons for strings
 - == Equality
 - < Before
 - > After
 - <=
 - >=
 - != inequality: but prefer not:
 - `not string1 == string2`

Comparisons

- Comparisons for numerical values
 - $==$
 - $<$
 - $>$
 - $<=$
 - $>=$
 - $!=$

Comparisons

- An abbreviation:
 - $a < b < c$
- is translated to
 - $a < b$ and $b < c$