DSFA

Lecture 3

Expressions, Functions, Tables

Announcements/Resources

- All Thurston 202 sections moved to Upson 202
- Are you on Piazza?
- Canvas, Website
- URL for website:
  http://www.cs.cornell.edu/courses/cs1380/2020sp
  - Demos!
  - Textbook!
- HW 01 due Friday (bonus point for early submission)
- Need Vocareum access? Post on Piazza

iClickers/REEF

Use your iClicker to answer the following:

A.   I have an iClicker/REEF.
B.   I don't have an iClicker/REEF.

Top Box Office Hit

The highest grossing movie of all time (domestic box office, as of 2017) is...?

A. Avatar
B. Jaws
C. Titanic
D. Star Wars: A New Hope
E. Star Wars: The Force Awakens
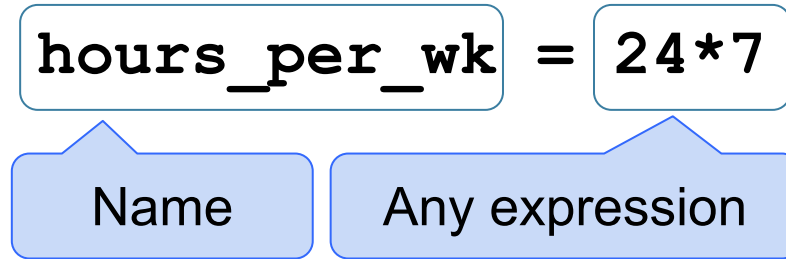
Programming Languages

- Python is popular both for data science & software development in general
- Mastering the language fundamentals is critical
- Learn through practice, not just reading or listening

(Demo)

Names

Assignment Statements

`hours_per_wk` = `24*7`

Name   Any expression

- Assignment statements don't have a value; they perform an action
- An assignment statement changes the meaning of the name to the left of the = symbol
- The name is bound to a value (not an equation)

Call Expressions

Anatomy of a Call Expression

What function to call

Argument to the function

f(27)

"Call f on 27."

Anatomy of a Call Expression

What function to call

First argument

Second argument

max (15 , 27)

Tables

Table Structure

- We organize our data in tables
- A Table is a sequence of labeled columns
- Data within a column should be of the same "type"

Label

Name	Code	Area (m2)
California	CA	163696
Nevada	NV	110567

Row

Column

(Demo)

Table Operations

- **`t.select(label)`** - constructs a new table with just the specified columns
- **`t.sort(label)`** - constructs a new table, with rows sorted by the specified column

(Demo)

Visualization

- **`t.barh(label)`** - horizontal bar chart with specified column as the y-axis categories

(Demo)

Table Operations

- **`t.where(label, condition)`** - constructs a new table with just the rows that match the condition

(Demo)