DSFA

Spring 2021

Lecture 3

Tables

Announcements/Resources

- URL for website: cornell-dsfa.org
  - Demos!
  - Textbook!
  - Videos!
- Lecture demos available via Canvas

Homework

HW 1 now out, due next Friday by 5:59PM.

- 1 bonus point for turning in by Thursday at 11:59PM
- Late policy: 7 slip days for the term
    - Can use at most 2 for this HW
    - Covers all standard reasons for being late (workload, exams, interviews, etc.), so use wisely!
- Getting help
    - Ask questions on Ed Discussions!
    - Come to office hours! (posted in Canvas/Zoom)

Top Box Office Hit

The highest grossing movie of all time is…?

- Avatar
- Avengers: Endgame
- Titanic
- Star Wars: A New Hope
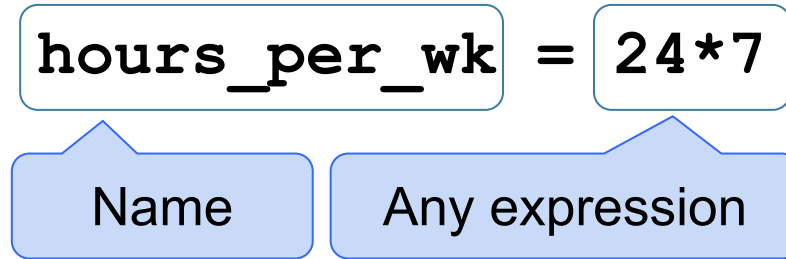- Star Wars: The Force Awakens

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

$$\text{hours\_per\_wk} = 24*7$$

Name — Any expression

- 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)

Functions (or 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

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)