DSFA
Spring 2018

Lecture 3

Tables

Announcements

- Easy URL for website: datascienceforall.org
  - Videos!
  - Demos!
  - Interactive textbook!
- Lab 02 available tonight
- HW 01 due Thursday (bonus point for early submission)
- Need Vocareum access? Fill out Google form at bottom of website
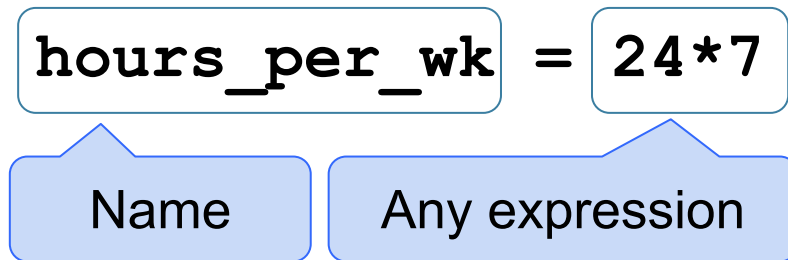
Top Box Office Hit

The highest grossing movie of all time is:

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

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)

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)