Lecture 3

Tables
Resources

- Piazza, Blackboard, Github, Website
- URL for website: http://www.cs.cornell.edu/courses/cs1380/2019sp
  - Demos!
  - Interactive textbook!
- Lab 02 available
- HW 01 due Thursday (bonus point for early submission)
- Need Vocareum access? Post on Piazza
The highest grossing movie of all time is…?

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

- 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)

```
hours_per_wk = 24*7
```

Name Any expression
Call Expressions
Anatomy of a Call Expression

What function to call

Argument to the function

"Call f on 27."
Anatomy of a Call Expression

max ( 15 , 27 )

What function to call
First argument
Second argument
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"

<table>
<thead>
<tr>
<th>Name</th>
<th>Code</th>
<th>Area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>CA</td>
<td>163696</td>
</tr>
<tr>
<td>Nevada</td>
<td>NV</td>
<td>110567</td>
</tr>
</tbody>
</table>
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)