Lecture 3

Tables
Announcements/Resources

● URL for website:  [cornell-dsfa.org](http://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)
The highest grossing movie of all time is…?

- Avatar
- Avengers: Endgame
- 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
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
Functions (or Call Expressions)
Anatomy of a Call Expression

- What function to call
- Argument to the function

"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"

<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.