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.
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
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

- 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).

```
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

- \texttt{t.where(label, condition)} - constructs a new table with just the rows that match the condition

(Demo)