



**BC COMS 1016:
Intro to Comp Thinking & Data Science**

**Lecture 9 – Randomness,
Iterations**



- HW04
 - Due Tuesday (03/01)
- Lab 4 this week (posted tonight)
- Checkpoint/Project 1:
 - Paired assignment that covers the previous section of the course material
 - Due Thursday 03/03



Control Statements



These statements *control* the sequence of computations that are performed

- The keywords **if** and **for** begin control statements
- The purpose of **if** is to define functions that choose different behavior based on their arguments



- treatment group
- control group
- How do we determine causality?

A blue-tinted photograph of a statue, likely a personification of Liberty or Justice, holding a torch aloft in its right hand. The statue is the central focus, with its head tilted slightly upwards. The background shows some foliage and a building, all rendered in shades of blue. Overlaid on the image is the text 'Random Selection' in a large, white, sans-serif font. Two short white horizontal lines are positioned above and below the text, centered horizontally.

Random Selection



`np.random.choice`

- Selects at random
- With replacement
- From an array
- A specific number of times

`np.random.choice(some_array, sample_size)`



Appending Arrays



- `np.append(array_1, value):`
 - new array with value appended to array_1
 - value has to be of the same type as elements of array_1

- `np.append(array_1, array_2):`
 - new array with array_2 appended to array_1
 - Elements of array_2 have to be of the same type as elements of array_1



Iteration



- `for` is a keyword that begins a control statement
- The purpose of `for` is to perform a computation for every element in a list or array