Announcements

● Prelim 1
  ○ Next Thursday 2/27, 7:30-9PM, Goldwin Smith G64
  ○ Practice questions posted on Piazza, review sheet coming
  ○ You will get a list of functions; you may bring a double-sided sheet of notes you make yourself.
Announcements

Project 1

- Part 1 due Friday 2/21 5:59PM, Part 2 due Friday 3/6 at 5:59PM.

- You may work together with a partner from your section

- Lab Next Week will be time to work on the Project
Boolean Operators
Boolean Values

| True | False |

Boolean Operators

| not | or | and |

(Demo)
Comparison Operators

The result of a comparison expression is a `bool` value

```
x = 2           y = 3
x > 1           x > y          y >= 3
x == y          x != 2         2 < x < 5
```

Assignment statements

Comparison expressions

(Demo)
Aggregating Comparisons

Summing an array or list of bool values will count the True values only.

\[
1 + 0 + 1 = 2 \\
\text{True} + \text{False} + \text{True} = 2 \\
\text{sum([1, 0, 1])} = 2 \\
\text{sum([True, False, True])} = 2
\]
Random Selection
Random Selection

```python
np.random.choice
```

- Selects at random
- with replacement
- from an array
- a specified number of times

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

(Demo)
Discussion Question

d6 = np.arange(1, 6+1)

What results from evaluating the following 2 expressions? Are they the same? Do they describe the same process?

np.random.choice(d6, 1000) + np.random.choice(d6, 1000)

2 * np.random.choice(d6, 1000)
Control Statements
Control Statements

These statements control the sequence of computations that are performed in a program

- The keywords `if` and `for` begin control statements
- The purpose of `if` is to define computations that can choose different behaviors
- The purpose of `for` is to perform a computation for every element in a collection

(Demo)