



DATA 8
Fall 2016

Lecture 13, September 23

Simulating Random Phenomena

Slides created by Ani Adhikari and John DeNero

Announcement

- Project 1 Checkpoint on Tuesday.
 - No homework today (but there will be homework next Friday). Instead:
 - **Read the text**
 - **Use the Interact feature and run the live notebooks; experiment on Python Playground**
 - **Summarize the concepts, not just the code**
-

Simulation

Using a computer to re-create random phenomena

Random Selection

`np.random.choice`

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

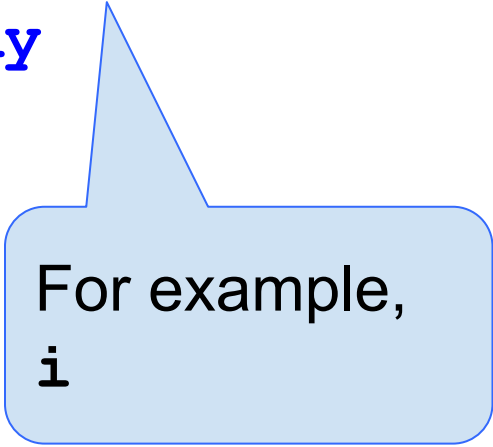
```
np.random.choice(array_name, sample_size)
```

Conditional Statement

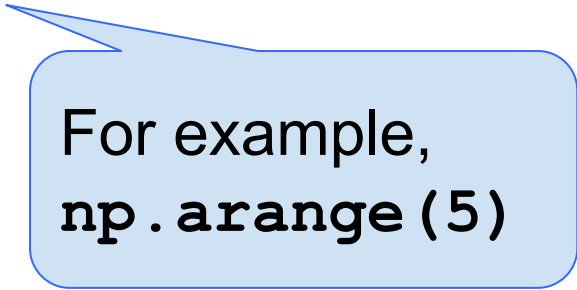
```
if <if expression>:  
    <if body>  
elif <elif expression 0>:  
    <elif body 0>  
elif <elif expression 1>:  
    <elif body 1>  
...  
else:  
    <else body>
```

for Statement (“loop”)

```
for item_name in sequence:  
    body
```



For example,
`i`



For example,
`np.arange(5)`

(Demo)

Caution ...



How many heads in 100 tosses?

50???

(Demo)

Monty Hall Problem

