

DS2000

1/24 - Tues.

Admin

- HW2 due Fri 9pm
- Quiz 2 4:30pm today - 4:50am Fri

Agenda

1. Conditionals
2. Boolean
3. Python

1. Conditionals

1. gather data

★ 2. Computation

3. Communication

→ Flow of control



m.py

w/conditionals



m.py

different result w/different data

A little in gather data

- user input
- read files
- * • generate random data

→ data scientists
run simulations!
make predictions

```
import random
```

```
r = random.randint(a, b)
```

↳ ints, range of
randomness
(inclusive)

Conditionals - decide which
pieces of code to run

```
if condition:  
    # do thing
```

→ very legit Python

If condition is True, do the thing
Otherwise, don't do the thing

```
if condition:  
    # do thing 1  
else:  
    # do thing 2
```

If condition is True, thing 1
Other wise, thing 2
exactly one thing happens

```

if condition :
    # do thing 1
elif condition:
    # do thing 2
else:
    # do thing 3
  
```

If condition is True, thing 1 stop

If condition is False,
then check second condition
if true, thing 2 stop

If both are False,
do thing 3 stop

```

if condition :
    # thing 1
elif condition :
    # thing 2
  
```

→ one or neither
thing can happen!
(not both)

```

if        :
    # thing 1
if        :
    # thing 2
  
```

} Two ifs are
independent,
thing 1 and thing 2
could both happen

Conditional structure:

- exactly one if
- zero or more elif
- zero or one else

Booleans

Data Types

- int
- float
- string

• Boolean

True / False

Conditions above

↳ boolean

(evaluates to True or False)
by doing comparisons

< <=

== (equal?)

> >=

!= (not equal?)

6 > 7 False

6 < 7 True

6 > 6 False

6 <= 6 True

5 == 5 True

5 != 7 True

5 != 5 False

$x > y$
 $x == y$ } usually
variable
names!

anywhere "condition"
appears above

Combine booleans to get another boolean

— and — → booleans

— or —

not —

_____ and _____

True and True
 ↳ True

True and False

False and True

False and False

 ↳ False

_____ or _____

False or False

 ↳ False

False or True

True or False

True or True

 ↳ True

→ 6 < 7 and 5 == 5

$x < y$ and $x < z$!!

$x < y$ and z !! ~~xx~~

not _____

not True (False)

not False (True)

Python

Simulation: rolling 2 six-sided dice

Rules of the game (Strange Dice)

- ex: If die 1 is 5 and die 2 is 6,
then Laney gets \$20