DS2000
1/31 - Tues.

Admin

- HW3 due Fri 9pm
- Quiz 3 4:30pm today → 9:50Am Fri

Agenda

1. Storing data from files
2. Python Lists
3. Python

Recap → How many times is the condition True?

① `i = 0` — 10 times
```
while i < 10:
    i += 1
```

② `i = 0` — 11 times
```
while i <= 10:
    i += 1
```

③ `i = 0` — 20 times
```
while i < 10:
    i = i * 2
```

④ `i = 0` — 0 times
```
while i > 10:
    i += 1
```

⑤ `i = 0` — 2 times
```
while i < 10:
    if i % 2 == 1:
        break
    i += 1
```

`i = 0`
`i < 10?` True
`i % 2 == 1?` False
no break
`i = 1`

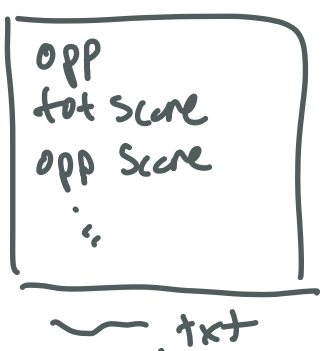
i < 10? True
i % 2 == 1? True
break → end of loop

Hw3 notes

- Code should work no matter what is in the files, as long as they have correct structure
- Conditional - which lines to run
- while loop - which lines to repeat

> if we have these and repeated code, maybe revisit!

1. Storing data from files



Last time...

- while loop to read the file
- read 3 lines at a time
- Did Tottenham win? If so, update num_wins += 1

```
opp = infile.readline()
tot = infile.readline()
opp_score = infile.readline()
```

So far...

```
x = 5
y = input("...")
z = infile.readlines()
w = random.randint(_, _)
```

ways we get data

`w` → label

`random.randint(_, _)` → value

one to one!

Today... what if need/want all the data from the file?

↳ Python list

one label, many values!

2. Python Lists

- A list is a data structure (one label, many values)
- Anytime we learn a new data structure, we need to know 4 things (and more we can google!)

1. Create → see [ ], think list.

```
lst = []      #creates an empty list
              # with label lst
```

2. Add things → use append once per new thing

every item has a position

```
lst.append(6)
lst.append(9)
lst.append(10)
```

pos	0	1	2
value	6	9	10

3. Look at one thing → lst[m] ↳ position

```
result = lst[0] + lst[1]      =15
          ↳6      ↳9

print(lst[2])      prints 10
```

4. Look at all the things → iterate over the list

```
for item in lst:
    print(item)
```

variable

item = 6 print 6

item = 9 print 9

item = 10 print 10