DS2000
10/22 - Tues.

Admin

- HW5 due Fri 9pm
  (last second-chance option)
- 10/29 mini exam #2!! :) → practice on website

Agenda

1. 2D List Review
2. 2D List code
3. Python (solving problem)

1. 2D List Review

↳ 2D list == list of lists == nested list
↳ data structure: one label, many values
↳ matrix/table with rows + columns
↳ rows first, cols second

create → empty

```
lst = []
```

add → append a row, not a value

```
lst.append(['a', 'b', 'c'])
```

How many rows, cols are in lst?
1 row
3 cols

```
print(lst) → [['a', 'b', 'c']]
len(lst) → 1 (bc 1 row)
lst[0].append('d') → [['a', 'b', 'c', 'd']]
```

`len(lst[0])` – length of row0 which is == #cols

Look at one thing → `[i]` → row i

→ `[i][j]` row col

`lst[0]` – `['a','b','c','d']`
`lst[0][0]` – `'a'`

Look at all the things

- nested loop to iterate
- iterate by value or position
- outer loop: row
  inner loop: col

```
for row in lst:
    for num in row:
        print(num)
```

print every value, one at a time

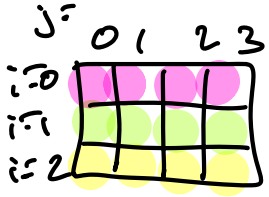
by position

1. to iterate over 2 corresponding lists
2. to modify the list!

by value

```
for i in range(len(lst)):
    for j in range(len(lst[i])):
        print(lst[i][j])
```

i – row #
j – col #



i=0
- j=0 [0][0]
- j=1 [0][1]
- j=2 ... [0][2]
- [0][3]

i=1
- j=0 [1][0]
- j=1 [1][1]
- j=2... [1][2]
- [1][3]

i=2
- j=0
- j=1
- j=2...

2. 2D List Code

- write functions!

print_raw_first

multiply_2D

weighted_avg

(extra for fun)

sum_rows

work on the functions

ignore main!

no big problem to solve,
just trying stuff