Agenda

• Announcements

• Dictionary – please snarf code for class today “DictionaryMyFirstSteps”

• More dictionary – a midterm 2 problem
Dictionary, proof reading and Taylor Mali

If you have been tasked with introducing Taylor, feel free to write your own introduction mixing whatever facts and anecdotes you would like. But if you are pressed for time and want something that will get the job done, use this:

“Our featured reader is New York City performance poet Taylor Mali, one of the most well-known poets to have emerged from the poetry slam movement and one of the original poets to appear on the HBO series “Def Poetry Jam.” A four-time National Poetry Slam champion, Mali is the author of two collections of poetry and, most recently, a book of essays called “What Teachers Make: In Praise of the Greatest Job in the World.”

https://www.youtube.com/watch?v=OonDPGwAyfQ
https://taylormali.com/introduction-cue-card
Problem of updating...

• How to easily update count of birds?
• How to easily update a patient record?
• How to easily update a client new buy?

birdNames = ["Cooper's Hawk", "Red-shouldered Hawk", "Golden Eagle"]
birdCount = [ 2, 12, 3 ]
birds = [("Cooper's Hawk",2), ("Red-shouldered Hawk",12), ("Golden Eagle", 3)]
Dictionary

- Works like a ‘normal’ dictionary
- A key is connected with a value
- You can easily get the value for any key and update it

```python
dictBirds = {
    "Cooper's Hawk": 2,
    "Red-shouldered Hawk": 12,
    "Golden Eagle": 3
}

dict_EngDK = {
    "Butt": "Numse",
    "Eyes": "Øjne",
    "Pretty": "Smuk"
}

name = {key:value, key:value, key:value}

dict_EngDK["Pretty"]
> Smuk

dictBirds["Cooper's Hawk"]
> 2
```
Dictionary

Two ways of getting the value out of a dictionary:

1. Use the square brackets `print dictBirds["Owl"]`
2. Use the `get()` method
   `print dictBirds.get("Owl")`

If the “Owl” is not there you get an error!

`get()` returns `None`

```
print dictBirds("Owl", "Bird NOT registered")
> "Bird NOT registered"
```
Dictionary

• Get person 2’s friends printed
• Get person 4’s friends printed OR 0 because he is not there
• Add person 4 with 12 friends
• Update person 4 to 13 friends
• Update person 2 with 1 extra friend
Dictionary

What is dictionary d created by the following code?

\[
\text{dict} = \{3:4\} \\
\text{d}[5] = \text{d}.\text{get}(4, 8) \\
\text{d}[4] = \text{d}.\text{get}(3, 9)
\]

A. \{3:4, 5:8, 4:9\}  
B. \{3:4, 5:8, 4:4\}  
C. \{3:4, 5:4, 4:3\}  
D. Error caused by get
Dictionary

For loop using the following functions:

- `.keys()` gives you all the keys in the dictionary.
- `.values()` gives you all the values in the dictionary.
- `.items()` gives you BOTH the keys and the values in the dictionary as a tuple.
Jaron Lanier is a computer scientist, composer, visual artist, and author. He coined the term ‘Virtual Reality’ … he co-developed the first implementations of virtual reality applications in surgical simulation, vehicle interior prototyping, virtual sets for television production, and assorted other areas.

In 2010 writes: “You are Not a Gadget”

"What's the difference between a bug and a variation or an imperfection? If you think about it, if you make a small change to a program, it can result in an enormous change in what the program does. If nature worked that way, the universe would crash all the time.”
Midterm 2, Fall 2012

Part B (8 points)

Suppose a student writes code to create a dictionary in which the key is an email address and in which
the corresponding value is a list of songs purchased by the person with the given email address. For the
data file shown the dictionary would be:

```python
{'rcd@yahoo.com': ['Ice Ice Baby', 'Raise Your Glass'],
 'ola@cs.duke.edu': ['Light My Fire', 'Landfill', 'Raise Your Glass'],
 'rbo@gmail.com': ['The Cave', 'Sleepyhead', 'Landfill', 'Raise Your Glass']}
```

Write a function `topsong` whose parameter is a dictionary in the format described; the function returns a
string: the song purchased by more people than any other song. Don’t worry about ties.

```python
def topsong(songd):
    
    songd is dictionary: key is email address
    corresponding value is list of song titles purchased
    by person with email address
    returns: song bought by most people
```