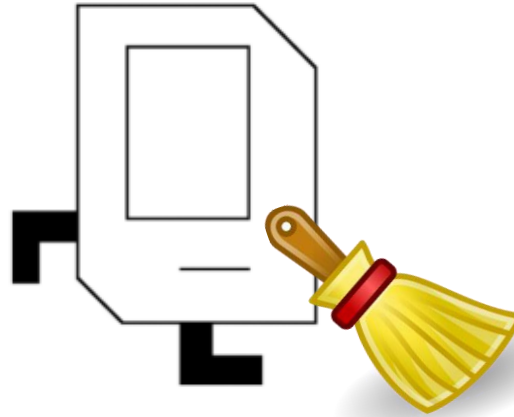


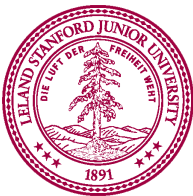
# Overview

## CS106A, Stanford University

# Housekeeping

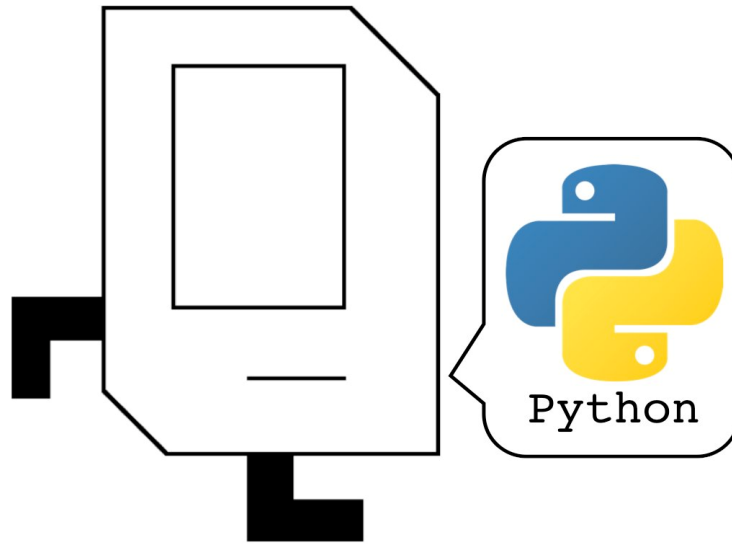


- Assignment #7 due today
- Final exam is Friday, June 3rd at 8:30-11:30am
- Location of the final exam is by first letter of your last name:
  - A-H: Bishop Auditorium (in Lathrop)
  - I-Z: CEMEX Auditorium (in Knight Management Center)
- OAE students should have received email with exam logistics
- Final exam is open book/note, but only printed materials
  - You cannot access the internet or files on your computer (similar to midterm)
- You will use BlueBook software to take the final exam
- Practice final exam and solutions are posted on website
- Final Review Session: Thursday at 1:30pm in Nvidia Auditorium

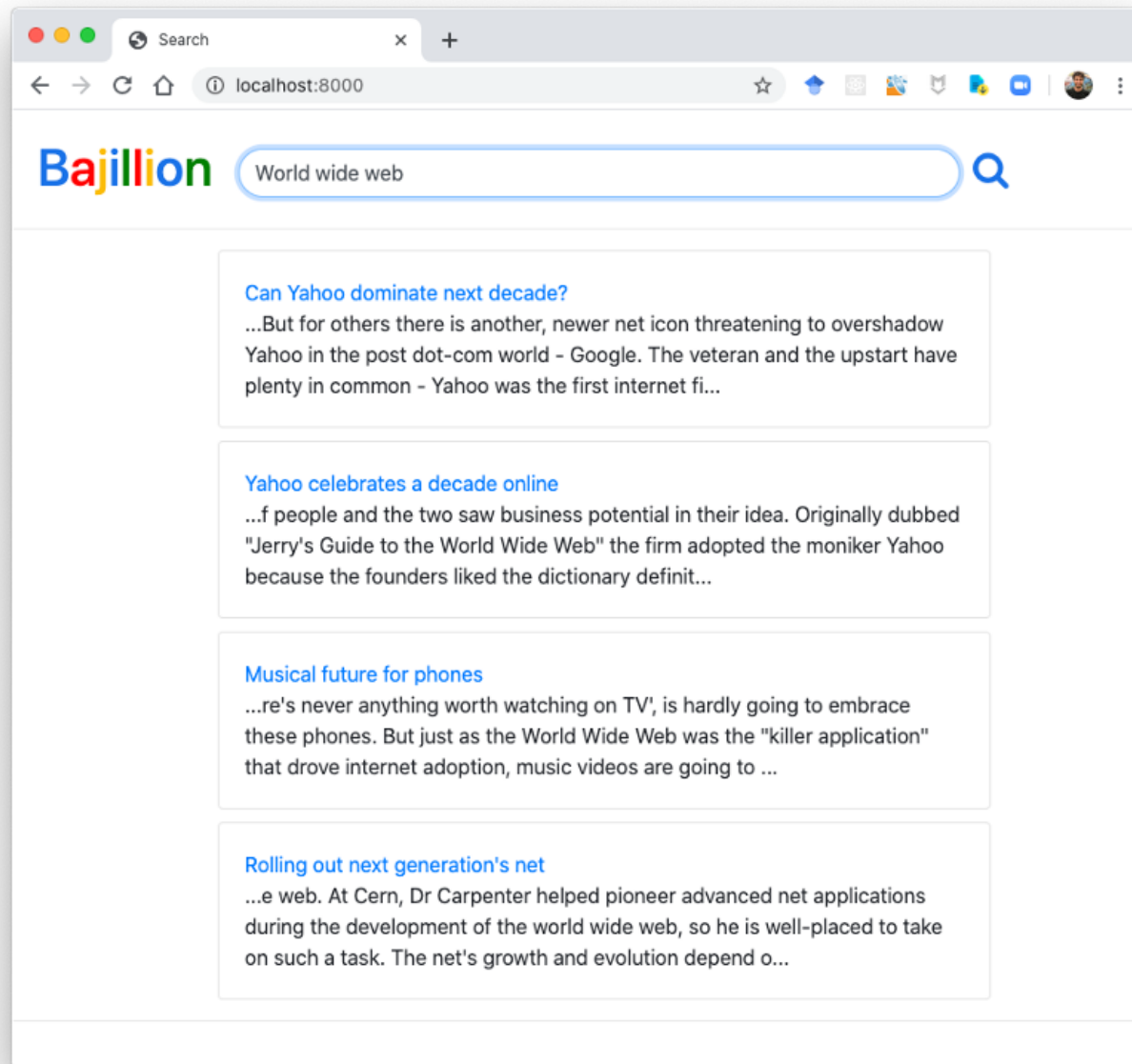


You have come a long way

# I Missed You



# I've Been Busy, Karel



# A Sampling of Where You've Been...

- Karel
- Core Python
  - Variables, expressions, control flow
- Functions and parameters
- Lists (including 2-dimensional)
- Random numbers
- Images
- Graphics
- Strings
- Files
- Dictionaries
- Nested structures
- Tuples
- Classes and objects
- The internet and servers
- List comprehensions and plotly

# So what is (NOT) on the Final?

## ~~Karel~~

- Core Python
  - Variables, expressions, control flow
- Functions and parameters
- Lists (including 2-dimensional)
- Random numbers
- Images
- Graphics
- Strings
- Files
- Dictionaries
- Nested structures

## ~~Tuples~~

- Classes and objects

## ~~The internet and servers~~

## ~~List comprehensions and plotly~~

# Let's Do An Example Problem

- Write a function `compile_dict(dict)` that is:
  - Given a dictionary of dictionaries where the *inner* dictionaries may have some matching keys
  - It should return a dictionary that contains all the keys of all the *inner* dictionaries where the value for each key is the *sum* over all the values in the inner dictionary with the same key.
- For example:

```
dict1 = {  
    'Mehran': {  
        'age': 52,  
        'height': 70,  
        'goatees': 1  
    },  
    'Juliette': {  
        'age': 23,  
        'height': 68  
    },  
}
```

Calling: `compile_dict(dict1)`

should return:

```
{  
    'age': 75,  
    'height': 138,  
    'goatees': 1  
}
```

Show me the code:  
`compiledict.py`

# Where You Could Be Going



# Where You Could Be Going

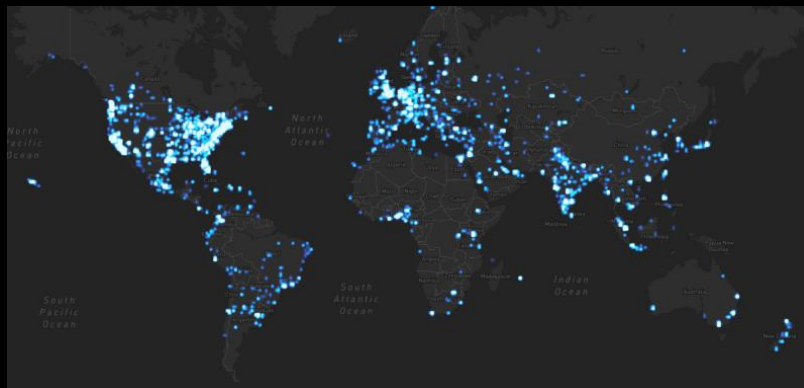


# Code in Place

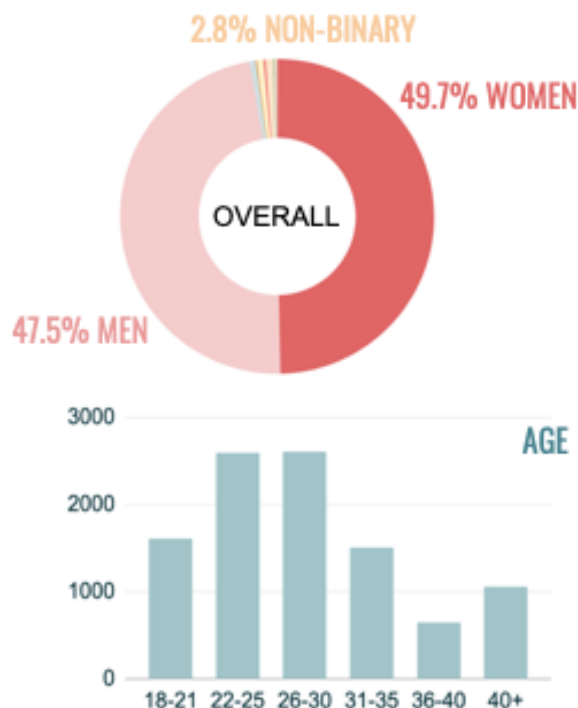


Chris Piech

**905** section leaders teach  
**10,000** students from around the world  
**First half of Stanford CS106A**



**20%** experienced job loss or home loss  
**10x** retention vs baseline MOOC  
**99%** wanted more (after first section)  
**6k** hours of live teaching  
**60k** hours of lecture watched  
Helped make CS106A better  
for **Stanford** students



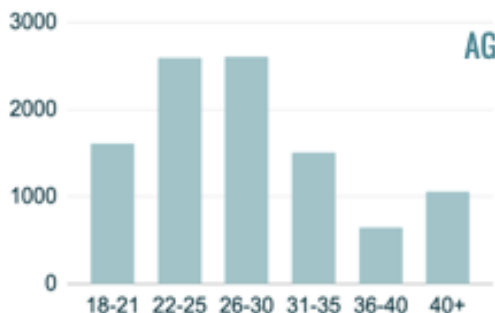
2.8% NON-BINARY

49.7% WOMEN

OVERALL

47.5% MEN

AGE



By the numbers

10 weeks

7 assignments

**27** lectures

# 50+ key concepts



25,000+ person hours  
of programming  
(collectively)

1 class

You have our respect

Why study CS?

# Joy of Building



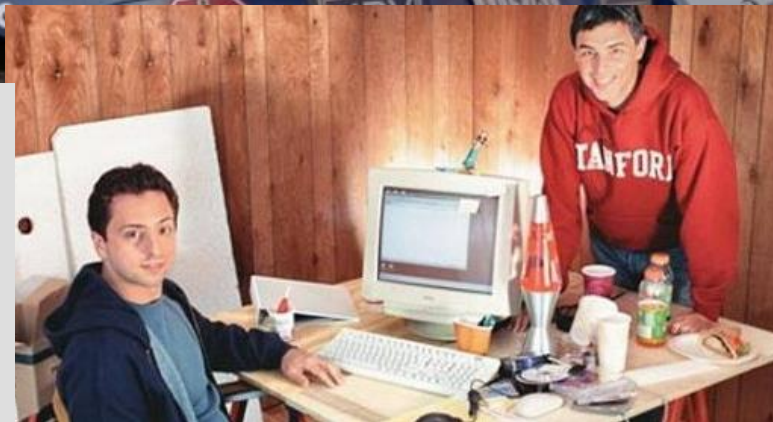
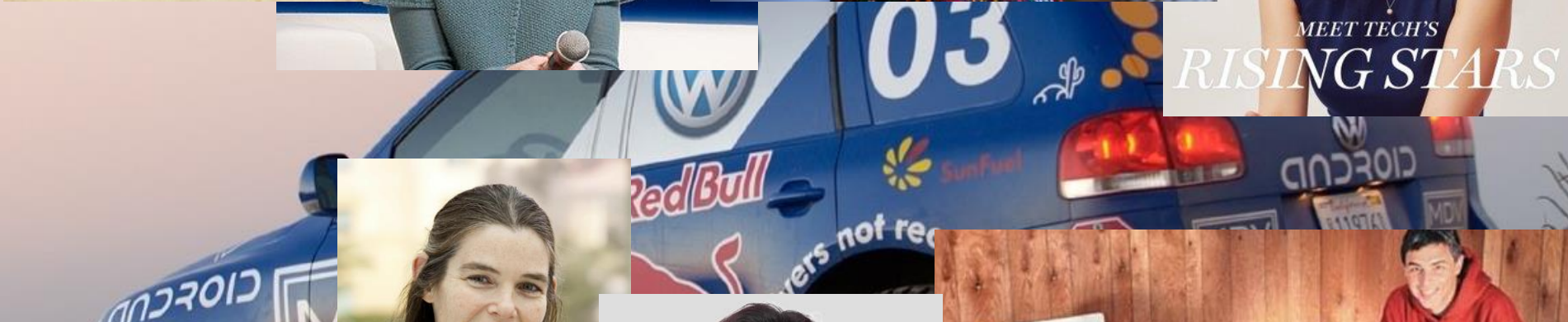
# Interdisciplinary



# Empowerment



# Now is the Time



# Everyone is Welcome



Thank you for taking  
the journey!