

## Review of Lab 9

- If the U.S. Census Bureau wanted you to figure out the most popular names in the U.S. or the most popular baby names for 2011, what would you need to do to change your program?
- Best practice: add user input last, if needed
  - Hard-code the inputs while you're developing
- Fully automated:

```
for filename in inputFileList:
    processNamesFile(filename)
```

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## New Trick: sorted function

- `sorted(...)`  
`sorted(iterable, key=None, reverse=False)`  
--> new sorted list
- Example:

```
>>> d = {0: 'a', 1: 'b', 2: 'c', 3: 'd'}
>>> sorted(d)
[0, 1, 2, 3]
>>> sortedKeys = sorted(d)
>>> sortedKeys
[0, 1, 2, 3]
```

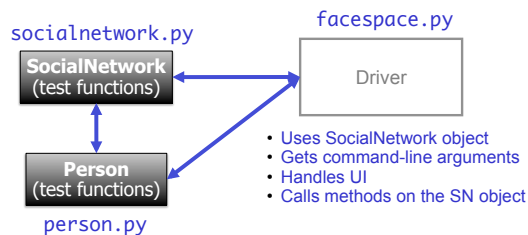
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## Lab 10 Design

- 3 files: `person.py`, `socialnetwork.py`, `facespace.py`



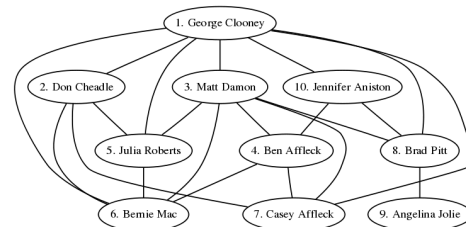
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## Goal Output

- You will create two graphs that look something like this and put them on a new web page for Lab 10



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## Towards a Solution and Hints

- Given "stubs" for each of the files
- `social.py` is the most filled out
  - Has the methods and docstrings defined
  - But still refer to the description in the lab for all information
- For whatever variable you're dealing with, think about its data type and API
  - SocialNetwork API handout
  - Add your Person class's API to the handout

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## UI Specification

- Checks if user entered command-line argument
  - Default files otherwise
- Read people, connections from files
- Repeatedly gets selected options from the user, until user quits
- Repeatedly prompts for new selection if invalid option
- Executes the appropriate code for the selection
- Stops when user quits
- Stores the social network into the file

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Write pseudocode

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## UI Pseudocode

```
Use default files if only one command-line argument
Read people, connections from files
while True:
    display menu options
    prompt for selection
    while invalid option
        print error message
        prompt for selection
    break if selected quit
    otherwise, do selected option
Store social network to designated file
```

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## Implementation Plan

1. Implement Person class
  - Test (write test functions, e.g., `testPerson()`)
2. Implement SocialNetwork class
  - Example runs in lab write up
  - Note: Methods for classes will **not** prompt for input; Use **input parameters**
  - Test
3. Implement driver program

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## Plan for Implementing a Class

- Write the constructor and string representation/print methods first
- Write function to test them
  - See `card.py` for example test functions
- While more methods to implement ...
  - Write method
  - Test
  - REMINDER: methods should not be using input function but getting the input as parameters to the method

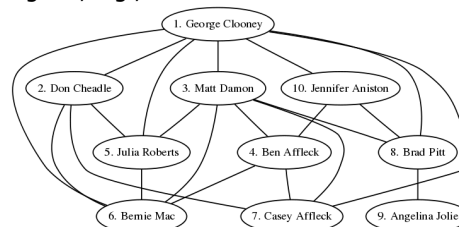
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## Writing Data To Dot File

- I provide a method that prints your social network to a file in a particular format (dot)
- Can display network graphically using **dot** program, e.g.,



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## Using dot

- Syntax:
  - `dot -Tfiletype -o outputname dotfile`
- Examples:
  - `dot -Tpng -o graphs/network.png graphs/network.dot`
  - `dot -Tpdf -o graphs/network.pdf graphs/network.dot`

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## Export SocialNetwork to Files

- I provide method to write connections to a file
  - Because only want connection once
- You handle writing to people file
  - Must be in **same format** that you read in
  - Just "undoing" the read
- Good test: if you read in a people file, export it
  - ➔ should look the same
  - If you read in that exported file, should see same social network
  - Files themselves may not be exactly the same because of order printed out

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## Test Data

- SocialNetwork requires: People file, Connections file
- Social Networks:
  - Simple
  - Hollywood
  - Randomly generated files
    - From W&L first and last names, randomly combined, connected
- Could combine different ones

## Notes

- Advice:
  - Read through entire lab to see where you are going
- A Person's *network* is different from the SocialNetwork
  - Person's network is just a `str`
    - Will do more with that later...
- Can have people in different networks in the same SocialNetwork