

Homework #4

DS 3001, D-term 2020

100 points + 30 bonus total [10% + 3% (bonus) of your final grade]

Due: May 10, 2020 by 11:59pm

[no submission will be accepted after May 13, 2020 at 11:59pm]

Delivery: Submit via canvas

For this assignment, you will implement the PageRank algorithm. Use Python version 3.

Part 0. Installing Python Libraries (optional)

You may need to install python libraries. To manage your Python installations, we recommend pip. Pip is a tool for installing and keeping track of python packages. It is a replacement for easy_install which is included with python. It's a bit smarter than easy_install, and gives better error messages, so you probably want to use it. You can install pip and the two packages we currently need by running these commands:

```
> easy_install pip
```

```
> pip install -r reqs.pip
```

Then, you may install other Python libraries such as NumPy by typing 'pip install numpy' and nosetests by typing 'pip install nose'.

Part 1. We provide the following files:

- problem1~5.py - You will implement several functions containing a comment "INSERT YOUR CODE HERE". Do not change the input and the output of the functions.
- test1~5.py - These files include unit tests. Run each file by typing 'nosetests -v \$filename\$' (e.g., nosetests - test1.py) in the terminal in order to check whether all of the functions are properly implemented. No modification is required.

Each number in the file name is corresponding each other. For example, test1.py contains unit tests of problem1.py.

problem1~4.py are mandatory assignment. problem5.py is bonus assignment (if you complete it you will get additional 30 points. i.e., 3% of your final grade).

What to turn in:

- Submit your problem1~5.py files to Canvas.
- This is an individual assignment, but you may discuss general strategies and approaches with other members of the class (refer to the syllabus for details of the homework collaboration policy).