

HCDE310: Interactive Systems Design & Technology

Human Centered Design & Engineering, University of Washington

Homework 8: Sorting and Filtering Lists

Due Wednesday, 18 November, 11a

but if you turn it in by Friday, 14 Nov, you'll get a graded version that Monday.

What to hand in:

- `hw8.py`: your Flickr app
- Screenshots or a text file of your program's output (in terminal and the web browser).

Part 0: Get the homework files

You'll need the homework files. Get them by typing the following lines in terminal:

```
cd ~  
./getHW.sh 8
```

Don't forget that if you already have Eclipse open, you may need to right click on the homeworks project and "refresh" it, to make the new folder `hw8` appear.

Part 1: Exercises. Ungraded

For practice with list comprehensions, filtering, and sorting, please review the exercises in S11's folder.

Part 2: Flickr App. Graded

In this assignment you will search for and process information about photos on Flickr. You will create three building blocks to search for Flickr photos and represent them as objects. In the main assignment, you will use these building blocks to search for a tag of your choosing, and sort the data in different ways. Finally, you will print out a list of the top users.

As with the last assignment, most of the instructions are located in the `hw8.py` file itself. The following provides additional background and screenshots.

Flickr API_Key

You will need to get your own API key from Flickr.com. Follow the process illustrated in the slides for session 10. Save the key as the value assigned to the variable `api_key` in the file `flickr_key.py`.

Building blocks

You will create three building blocks: (1) a function that uses the Flickr JSON API to search for photos with a certain tag, and returns a list of corresponding photo IDs; (2) a function that returns a dictionary containing information about a photo, using the Flickr API; (3) a class that represents a Photo.

The class gives you an easy way to access the title, author, tags, and the URL of the photo.

It also will include an easy way to print out information about the photo and open it in your web browser.

See hw8.py for full instructions and code to test your building blocks. Make sure your output matches screenshot (2). Include your screenshot of your terminal and web browser in hw8screenshots.pdf (or separate PNG or JPEG files).

Main Assignment

There are four parts:

1. Use building blocks (1-3) to generate a list of photos corresponding to a search term (tag) of your choosing.
2. (a) Print information about the top three most viewed photos, (b) the top three most tagged photos, and (c) the top commented photos.
3. Count the total number of views received by each author.
4. Print the top five most successful authors in terms of number of views.
If a user 'Johnny 5' authored four photos, which had 100, 200, 700, and 221 views, the total for that user would be 1221. If another user had many more photos, but fewer total views, they would go lower in the rankings.

Include a transcript of your program's output, like you see below, and a screenshot showing the web browser that is launched, and one of its tabs.

Part 3: Review, JFF. Ungraded

I've included a feed file (hw8-jff-feed.json) with recent data from our Facebook group. Write a program, possibly using your previous code (HW6), that will:

- Build an object for each post in the list
- Print the top 5 posters
- Print the top 5 like-getters
- Print the top 100 words, and a word count, that appear in the messages. As discussed in the FB group and in class, this will probably contain many boring, not very informative words ("stopwords"). I have included a list of such words from <http://www.lextek.com/manuals/onix/stopwords1.html> as [stopwords.txt](#). Modify your code to filter out these stop words.
- Repeat the previous for the comments. Are the lists different? How would you represent the differences?

Appendix: Sample Flickr Output

Note: your output will vary because we are using live data and your own search term!

Testing your building blocks

```
-----
[{'u': '15072411154', 'u': '15072411194', 'u': '15072410934', 'u': '15668642366'}]
{'u': 'people': {'u': 'haspeople': 0}, 'u': 'dateuploaded': '1288726568', 'u': 'owner': {'u': 'username': 'pyza*', 'u': 'realname': '', 'u': 'nsid': '89692371@N00', 'u': 'iconserver': '5450', 'u': 'location': '', 'u': 'path_alias': 'chmurka', 'u': 'iconfarm': 6}, 'u': 'publiceditability': {'u': 'canaddmeta': 0, 'u': 'cancomment': 1}, 'u': 'id': '5140736446', 'u': 'title': {'u': 'content': 'Food makes me lose my Mind ~ Migotka.'}, 'u': 'media': 'photo', 'u': 'tags': {'u': 'tag': [{'u': 'machine_tag': 0, 'u': 'content': 'migotka', 'u': 'author': '89692371@N00', 'u': 'raw': 'Migotka', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-8618113'}, {'u': 'machine_tag': 0, 'u': 'content': 'mimi', 'u': 'author': '89692371@N00', 'u': 'raw': 'Mimi', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-10160'}, {'u': 'machine_tag': 0, 'u': 'content': 'mima', 'u': 'author': '89692371@N00', 'u': 'raw': 'Mima', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-9112'}, {'u': 'machine_tag': 0, 'u': 'content': 'hamster', 'u': 'author': '89692371@N00', 'u': 'raw': 'hamster', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-16863'}, {'u': 'machine_tag': 0, 'u': 'content': 'hammie', 'u': 'author': '89692371@N00', 'u': 'raw': 'hammie', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-345921'}, {'u': 'machine_tag': 0, 'u': 'content': 'chomik', 'u': 'author': '89692371@N00', 'u': 'raw': 'chomik', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-6872352'}, {'u': 'machine_tag': 0, 'u': 'content': 'syrian', 'u': 'author': '89692371@N00', 'u': 'raw': 'syrian', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-127044'}, {'u': 'machine_tag': 0, 'u': 'content': 'girl', 'u': 'author': '89692371@N00', 'u': 'raw': 'girl', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-867'}, {'u': 'machine_tag': 0, 'u': 'content': 'animal', 'u': 'author': '89692371@N00', 'u': 'raw': 'animal', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-952'}, {'u': 'machine_tag': 0, 'u': 'content': 'pet', 'u': 'author': '89692371@N00', 'u': 'raw': 'pet', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-359'}, {'u': 'machine_tag': 0, 'u': 'content': 'rodent', 'u': 'author': '89692371@N00', 'u': 'raw': 'rodent', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-2197'}, {'u': 'machine_tag': 0, 'u': 'content': 'critter', 'u': 'author': '89692371@N00', 'u': 'raw': 'critter', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-5771'}, {'u': 'machine_tag': 0, 'u': 'content': 'cute', 'u': 'author': '89692371@N00', 'u': 'raw': 'cute', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-559'}, {'u': 'machine_tag': 0, 'u': 'content': 'adorable', 'u': 'author': '89692371@N00', 'u': 'raw': 'adorable', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-7664'}, {'u': 'machine_tag': 0, 'u': 'content': 'fat', 'u': 'author': '89692371@N00', 'u': 'raw': 'fat', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-5881'}, {'u': 'machine_tag': 0, 'u': 'content': 'chubby', 'u': 'author': '89692371@N00', 'u': 'raw': 'chubby', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-33363'}, {'u': 'machine_tag': 0, 'u': 'content': 'beige', 'u': 'author': '89692371@N00', 'u': 'raw': 'beige', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-2876'}, {'u': 'machine_tag': 0, 'u': 'content': 'flower', 'u': 'author': '89692371@N00', 'u': 'raw': 'flower', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-535'}, {'u': 'machine_tag': 0, 'u': 'content': 'colourful', 'u': 'author': '89692371@N00', 'u': 'raw': 'colourful', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-24773'}, {'u': 'machine_tag': 0, 'u': 'content': 'grumpy', 'u': 'author': '89692371@N00', 'u': 'raw': 'grumpy', 'u': 'authorname': 'pyza*', 'u': 'id': '5624345-5140736446-42011'}]}, 'u': 'comments': {'u': 'content': '19'}, 'u': 'secret': 'cc2d58c2f4', 'u': 'usage': {'u': 'canblog': 0, 'u': 'canshare': 1, 'u': 'candownload': 0, 'u': 'canprint': 0}, 'u': 'description': {'u': 'content': 'And lose her balance, too.'}, 'u': 'isfavorite': 0, 'u': 'views': '4728', 'u': 'farm': 5, 'u': 'visibility': {'u': 'isfriend': 0, 'u': 'isfamily': 0, 'u': 'ispublic': 1}, 'u': 'rotation': 0, 'u': 'dates': {'u': 'taken': '2010-10-10 19:28:14', 'u': 'lastupdate': '1353292885', 'u': 'takengrularity': '0', 'u': 'posted': '1288726568'}, 'u': 'license': '0', 'u': 'notes': {'u': 'note': []}, 'u': 'server': '4021', 'u': 'safety_level': '0', 'u': 'urls': {'u': 'url': [{'u': 'type': 'photopage', 'u': 'content': 'https://www.flickr.com/photos/chmurka/5140736446/'}]}, 'u': 'editability': {'u': 'canaddmeta': 0, 'u': 'cancomment': 0}}
title: Food makes me lose my Mind ~ Migotka.
```

author: pyza*
number of tags: 20
views: 4728
comments: 19
[u'migotka', u'mimi', u'mima', u'hamster', u'hammie', u'chomik', u'syrian', u'girl',
u'animal', u'pet', u'rodent', u'critter', u'cute', u'adorable', u'fat', u'chubby',
u'beige', u'flower', u'colourful', u'grumpy']

Top Three Photos by Views

title: The Vibrant Path
author: kwphotos.com
number of tags: 0
views: 32
comments: 1
title: Tinkham 108
author: Robert Patten Photography
number of tags: 28
views: 20
comments: 0
title: An older Narboo piece
author: evil robot 6
number of tags: 9
views: 19
comments: 0

Top Three Photos by Number of Tags

title: Fall Foliage (Portrait), Microsoft Campus, Bellevue
author: JigarBrahmbhatt
number of tags: 30
views: 8
comments: 0
title: Tinkham 082
author: Robert Patten Photography
number of tags: 28
views: 0
comments: 0
title: Tinkham 043
author: Robert Patten Photography
number of tags: 28
views: 17
comments: 0

Top Three Photos by Number of Comments

title: The Vibrant Path
author: kwphotos.com
number of tags: 0
views: 32
comments: 1
title: #troll #Seattle
author: jennlongg
number of tags: 2
views: 0
comments: 0
title: Fall Foliage (Portrait), Microsoft Campus, Bellevue
author: JigarBrahmbhatt
number of tags: 30
views: 8
comments: 0

Top five authors by number of views

Robert Patten Photography: 72

kexplive: 44

laviddichterman: 38

kwphotos.com: 32

evil robot 6: 19

Building block

