

1)Photo Search Engine

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Q1

I have a Question about the data structure that I'm going to use in the project. you have mention it before that the program should not going all of the data. I have a idea that maybe use hash in some how but I'm still have not idea how to write the program that able to list three most similar photos in efficient way

I think hash tables will be central for this project. This will allow you to quickly look up photos by a tag. Then you need to think about an algorithm that will find the intersection of multiple photo sets (that is, sets for each tag specified). I can make some suggestions but you should see what you can come up with.

Q2

I'm think using hash might be fast but It look like have to use a lot of the memory like

```
if photo1 have a tag (airplane,bird)
    photo3 have a tag (aircraft, zoo)
    photo2 have a tag (cat)
```

and hash function represent the first alphabetic of the tag

```
|a|-> &photo1 -> &photo3
|b|-> &photo1
|c|-> &photo2
.
.
.
|z|-> &photo3
```

I think it use a lot of memory because if the tag photo1 have a lot of tags It mean I have to add a lot of the tag.

A hash table can use the full tag as a key. I wouldn't use the letters of the alphabet. You'll also need to have a data structure to represent each photo that also stores the tags, because a hash table can have "collisions", that is, two different keys can end up in the same bin. So you'll need to verify that a photo found in the bin actually has that tag. I wouldn't worry about the memory; speed/efficiency is more of a concern.

Q3

from the instruction you said that use a browser to display the photograph So how I can display it. Is it a function in c that able to display pop up the photo in browser or what?

C has several functions, including system() and exec(), that you can use to run another program or an OS command from inside a program. You can use one of these (system() is easiest) to invoke the browser. The main problem is that you need to know the name of the browser program, since this will be different for different computers. One solution is to have the user provide this as a command line argument (or simply ask).
