

Project #3

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Points: _____ / 125

Objectives

- To apply grouping/classification and searching in classification problems
- To apply set theoretic operations

Instructions

An important area of computer science, graphics, and data science is that of **classification**. In other words, how do we organize entities to determine what they have in common, and so we can retrieve further information later.

For this project, you will read in a file, **image_info.txt** that indicates an **image name**, followed by a space, followed by a space-delimited list of **keywords** to help with classification of the image. You are to have your program keep image names organized in one or more of the following groups:

- animals
- flowers
- people
- buildings
- landscapes

The file will contain lines of the aforementioned format:

<code>some_image.png animals people</code>
--

An actual file may look like the following:

<code>me_and_sparky.png animals people house.jpg buildings camping.png landscapes people flowers farm.png landscapes buildings animals classroom.jpg people</code>
--

You may of course, place image strings or special objects of your own design in more than one ArrayList, or find another creative or interesting way to retrieve the images with reasonable efficiency.

You will provide user interaction with your application. The user should be able to issue a command such as the following:

What would you like to search for?
animals

me_and_sparky.png
farm.png

What would you like to search for?
animals or people

me_and_sparky.png
camping.png
farm.png

What would you like to search for?
animals and people

me_and_sparky.png

What would you like to search for?
Buildings and flowers

Your search returned no results.

...

Note the use of the reserved words **or** and **and**. If **or** is applied, this assumes that the image name(s) returned can possess either (or both) of the search terms. If **and** is applied, this assumes that the image name(s) returned must possess **both** of the search terms. To keep things reasonable, you can assume that only one logic connective can be applied per search (i.e., **the user cannot search** “animals and people and buildings” or “animals or buildings and people”, but only single terms, such as “animals”, or with single connectives, “animals or people”).

Note that the searches are case-insensitive. So, if the user searches for **people**, **PeOpLe**, **pEOPlE**, etc. – the search should still work.

Deliverables

- **Create a zip file** of your .java files (in PDF or Word format) and turn in the zip file. Name the zip file "Project3" and D2L will take care of putting your name in it.
- You will also need **screen shots of your program working**, pasted inside of a PDF or Word (.doc or .docx) document (you can create PDF from Word documents using the Save As... option)
- Also, make sure your name is in comments on **each** Java file that you turn in. For example:

```
// Al Gore-Rhythm  
// CIS 2353  
// Fall 2021  
// Prof. John P. Baugh
```