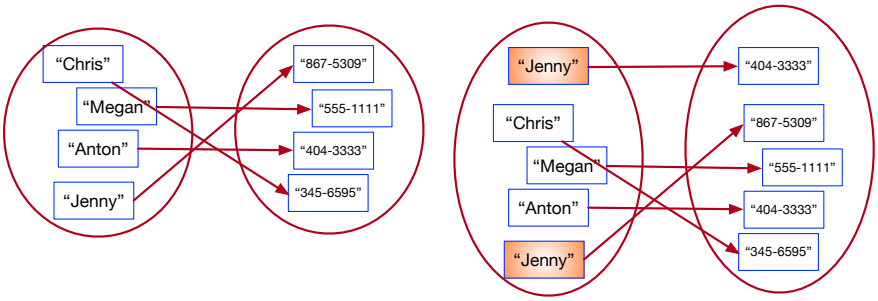
Visualization of map, to implement associative arrays.

Goal: Learn about STL map, multimap (associative arrays). May be useful for our last project.

map: Is a collection of pairs (*k*, *v*), sometimes called **key/value** pairs, where *v* can be found quickly if you know *k*. Other names for map: dictionary, associative array, hash.

A map is a generalization of an array, where the "**indexes**" need not be integers, it maps: **Keys** to **Values**.

Visualization: Example: Contact List (associations of **pairs**): **map** on left, **multimap** on right. For each mapping, keys are in the left set, and values in the right set.



A map enables you to get from one half of a pair to the other.
For example: assume the association from "Jenny" to "867-5309"

Prerequisite: #include <map>

Requires 2 type parameters: one for keys, one for values.
Examples:

```
// maps from string keys to integer values
map<string, int> votes;

// maps from double keys to Vector<int> values
map<string, Vector<string>> friendMap;
```

Our Code:

~ingrid/1730/tutorial12
~ingrid/1730/Lab13

Resources:

http://www.cplusplus.com/reference/map/map/?kw=map

http://www.cplusplus.com/reference/map/multimap/

http://www.cplusplus.com/reference/map/multimap/?kw=multimap

https://iq.opengenus.org/map-vs-multimap-cpp-stl/

https://www.geeksforgeeks.org/multimap-associative-containers-the-c-standard-template-library-stl/