

Sorting names with Mac and Mc

Let's make it possible to sort names in a way that we might call Celtic compliant. Many Scottish and Irish names begin with Mac or Mc. The conventional way to alphabetize names that start with these prefixes is to treat Mac and Mc the same. Names that start with Mc are treated as though they were spelled Mac. In effect, "Mc" has an invisible "a" between the "M" and "c". Unfortunately, the standard way we compare strings in computer programming ignores this convention. Let's fix this situation.

Write a compare function that takes two string parameters s1 and s2. Assume that s1 and s2 represent last names, or strings starting with a last name. This function should return an integer indicating how s1 and s2 compare lexicographically. As usual, it should return:

- A negative integer if s1 should appear before s2 in a sorted list.
- A positive integer if s1 should appear after s2 in a sorted list.
- Zero if the strings are to be treated equal.

When looking at strings s1 and s2, you will need to take note if they are Mac or Mc names. If the string begins with "Mc" followed by a capital letter, then you should insert an "a" before doing the comparison.

Finally, you should test your function. Create a list of names, and prepare them for sorting. Use the Comparator technique that you did in an earlier exercise. At some point, you will need to pass your new name comparing function as an argument. As an example, use your program to alphabetize the given list of names below.

Maddox

Macaroni

McCarthy

Maastricht

McAdoo

It's probably a good idea to ignore case while comparing, because of the sudden appearance of a capital letter in the middle of a name.