

Assignment 10

Due 25 November 7:59am

1 Problem 1

Cat Sort This assignment will use the file “cats.txt” that was posted on Black-Board and used in Assignment 9.

This week’s problem is:

- Read the entire file into two arrays. Use one array to store all the names. Use another array to store all the food amounts.
- Using the slides from lecture and the sample program “cat_sort.cxx” as a guide write two functions: One function to Bubble Sort the names and another function to Bubble Sort the numbers.
- Use these functions to sort the names and numbers in ascending order
- Write the sorted arrays to two files: “cats_sorted.txt” and “food_sorted.txt”.

2 Bonus: 10pts

Insertion Sort As mentioned in lecture, an intuitive way to sort is done via what is called an “Insertion Sort”. http://en.wikipedia.org/wiki/Insertion_sort This week’s Bonus problem is to implement this Insertion Sort in C++ and use it to sort the names. Do so as an additional function in your program with the following declaration.

```
void insertion_sort(string names[], int length);
```

The *pseudocode* for this algorithm is below.

```
for i = 1 to length(A)
  j = i
  while j > 0 and A[j-1] > A[j]
    swap A[j] and A[j-1]
    j = j - 1
```