CIS 1.5 Spring 2007 Lab 4, Part 2

Instructions

- This is the second part of the fourth homework/lab assignment for CIS 1.5. Read the first part of the assignment for complete instructions, due date and submission details.

1 Read some more strings

- The file `dna.txt` holds four strings.
- Write a program that reads in all four strings.
- The program should concatenate the first, second, and third strings, and call the result `dna1`.
- The program should concatenate the second, third and fourth strings, and call the result `dna2`.
- The program should print out `dna1` and `dna2`.
  (1 point)

2 A function that complements

- Write a function `complementary` which takes as arguments a string and the length of the string, and returns the complement of that string.
- `complementary` can do this by using the function `complement` that you wrote for Lab 4.Part 1.
- Use `complementary` to compute the complement of `dna2` and call the result `dna3`.
- Print `dna3`.
  (2 points)

3 A function that counts

- Write a function `countTheTs` that takes as its argument a string, and returns an integer that gives the number of `t`s in that string.
- Use `countTheTs` to print out the number of `t`s in the complement of `dna1`.
  (2 points)

4 Now hand it in

Save your working program as **hw4-2.cpp** and send it to me along with the program you wrote for Lab 4, Part 1.

5 Extra credit question

- Write a function that searches `dna1` and `dna2` for a sequence that starts with `gag` and ends `gcg`.
- If the function finds such a sequence, it should return the characters between `gag` and `gcg`.
- Save your working program as **hw4-3.cpp** and send it to me along with the programs you wrote for Lab 4, Parts 1 and 2.
  (1 point)