Assignment 5

Due Sunday, August 11, 2013

This assignment is worth 6% of your grade.

Submit your code on cuLearn in ONE file called a5.c Your code (that is a5.c) must compile (with a C complier), otherwise the assignment will be graded with mark 0. For that reason, if you run out of time and/or one of your answers contains code that does not compile, then comment out that section of code.

1. Write a program that solves question 3, in "Programming Projects" section of Chapter 10 of your text book (page 616) – except, you only need to write functions to compute sum and product (you do not need to write functions to compute difference and quotient).

2. Write a program that asks a user to enter two strings, first of length at most 100 and second of length at most 20. The program then checks to see whether or not the second string is a substring of the first (without using the `substr` function – or any other `string.h` library function). If it helps, you may assume that the first string is comprised of letters and numbers only. The same goes for the second string, except for one caveat. The second string may have up to two `*` symbols (you may assume `*`-s do not appear consecutively in the second string.) Think of `*` as a wild-card. Thus `*` in the second string can match zero or more characters in the first string. So, if the first string were `abcd` and the second were `a*c`, then the second string is considered a substring of the first. See below for more examples. End the end, your program should print the two strings and state whether or not the second is a substring of the first.

For bonus points, solve, with recursive function calls, the above problem where the 2nd string can have arbitrary many `*`.

Study the examples below to understand when the second string is a substring of the first.

FIRST STRING	SECOND STRING	substring?
abc	ac	NO
abc	a*c	YES
abc	bc	YES
abc	a*bc	YES
13579	159	NO
13579	1*59	NO
13579	1*5*9	YES
abccda	a*a	YES
abcc48a	*48	YES
237adhkhadad	3*k*ad	YES
237kadhad	3*ad*k	NO
1223134	*231*	YES
123134	*423*	NO
14ab222	14*222*ab	NO