Langara College
CPSC 2150

Assignment #1: Recursion

Assignment due with Brightspace at 11:00pm on Thursday September 12

Read in the textbook chapters 1 (skip §1.3, §1.5), chapter 5 (skip §5.9). Read the Concluding Remarks in §5.10 on pages 197 and 198 carefully.

Read the "Recursion Document" found in Brightspace under week I and week II.

Do from the "Recursion Document" (not from the textbook) the following

1. Exercise 3.8 toBinaryString on page 5
2. Exercise 3.9 toBitsString on page 6
3. Exercise 5.6 minimum positive number on page 11
4. Exercise 5.13 swapPairsRightToLeft on page 15
5. Exercise 7.3 equalsChar on page 19: do not allocate any extra memory as in extra variables

Test each function properly by writing appropriate google tests. We have started writing the tests in the file fcts_unittest.cpp

As shown in the lab, fill in the code of the file fcts.cpp and submit the following 4 files as a single compress (zipped) file:

- fcts.cpp (with YOUR code)
- fcts_unittest.cpp (adding YOUR tests … yes, marks are given for complete tests)
- fcts.h (leave as is)
- Makefile (leave as is)

Document the functions in the file fcts.cpp (not in the file fcts.h).

Clarification:

- No globals allowed.
- No static variables.
- You **can** overload the requested functions.
- You may implement helper functions to the required functions but place the code before they are called in the file fcts.cpp.
- fcts.cpp should include the provided fcts.h
- the file fcts.cpp should **not** have a main function.
- All the functions are to be implemented recursively but if the function requested calls a recursive (possibly overloaded) function, we say that the function is recursive.
- We should be able to compile your code fcts.cpp and fcts_unittest.cpp with the Makefile provided.