

Name \_\_\_\_\_

*Working with stdin and stdout, Operators, and Control Flow Again*

1. Write a function `decPre` that takes an integer type parameter and returns the result of decrementing the variable using the prefix shortcut autodecrement operator; e.g. `return(--myNum)`. Print the value of the result returned. Write a similar function `decPost` takes an integer type parameter and returns the result of decrementing the variable using the postfix shortcut autodecrement operator. Print the value of the result. What difference do you see in the results of these two functions? Can you explain the difference?
2. Write a C program that expands each TAB character in an input set into corresponding contiguous sets of space characters. Assume that a TAB is 5 characters wide.
3. Write a display program that prompts the user for a number and a base then displays that number in requested base. Assume the set of bases is {dec, oct, hex}. For this design, identify the possible error conditions. You do not have to correct them.
4. Write a program that prompts the user for two numbers, a base, and an arithmetic operation to perform on the two numbers. Write a function that accepts the user data as input, performs the requested operation in the specified base and returns the result. Display the result of the operation in the specified base.  
Assume the set of bases is {dec, oct, hex}, the arithmetic operations are {+, -, \*, and /} and that all numbers are positive.  
For this design, identify the possible error conditions. You do not have to correct them.
5. Write a program `Histogram` that prompts the user to enter a series of characters then keeps count of the number of alphas (letter or digit), digits (0..9), punctuation, and whitespace (`\t`, `\v`, `\f`, `\r`, or `\n`) characters in the input data set. When the user enters the EOF character, print out the number of entries in each category.