

University of Massachusetts Dartmouth
Department of Electrical and Computer Engineering

ECE 160

name: see below

Lab 11 plus extra credit

Due: see <http://ece160.org>

Below are three different problems. 100 points will be considered “done”. If you submit problem 4, you may NOT hand in problems 2 or 3. Hence, you may earn a maximum of 250 points out of a possible 100. Another way of saying is you can get 150 points of extra credit on homework by doing problems 1 and 4.

1. (100) Pig Latin

name: piglat.cpp

Write a program which prompts the user to enter a phrase. The entered phrase should be converted to pig Latin. The user should then be prompted to enter another phrase, which should also be translated to pig Latin. This should continue until the user just pressed “enter” (an empty string). See:

https://en.wikipedia.org/wiki/Pig_Latin#Rules

for specific rules of pig Latin. There is ambiguity regarding adding “way” or “ay” at the end of a word which begins with a vowel. Per the Chipoltle standard, use “way”. Also, vowels are defined as “a”, “e”, “i”, “o”, “u”, and “y”.

An example is available at `M:\ECE-160\public\PigLatin.exe`

2. (50 points) Conversion to Roman Numerals

name: dec2rom.cpp

Write a program which prompts a user to enter a decimal number. The program should print out the equivalent roman number. This should continue until the user enters 0. Your program only has to work for values 1 to 3999.

3. (50 points) Conversion FROM Roman numerals

name: rom2dec.cpp

Write a program which prompts a user to enter Roman number. The program should then display the equivalent decimal number. This should be repeated until “END” (in any combination of upper/lower case without quotes) is entered.

4. (150 points) Combine programs 2 and 3

name: translateask.cpp

Combine parts 2 and 3. There must only be one prompt routine (you are not allowed to ask if the user wants to enter a roman or decimal value. To restate: the program must detect (NOT ASK) whether the value entered is a roman number or a decimal number.

An example is available at `M:\ECE-160\public\RomanNumbers.exe`