

Your submission for this tutorial must include your full name and you nine-digit student number as a comment at the top of every source file you submit. All source code files must be written using the Python 3 programming language and must run on the course's official virtual machine.

Exercise A: "Recursive Design Practice, Part I"

For this exercise you will design and implement two functions for solving the following problem:

Given a list of integers as an argument, add 10 to every odd element and then return the list.

Your first function must approach this problem in an iterative style, walking through the elements of the list using a looping control structure, checking each one to see if it is an odd number (using modulation) and then adding 10 to each of the elements.

Your second function must accomplish the same task but be entirely recursive in nature. Answer (for yourself) any the questions about the base case(s) or how arguments should be simplified and what additional work will be incurred by simplification, and ensure that your approach does not use a looping control structure.

In order to complete this task, you will need to:

- assume that you are being given a list of integers

Your submission for this exercise:

- must be a source code file with filename¹ `'comp1405_f21_#####_tutorial_10_a.py'`
- must include both a recursive and a non-recursive function implementation, and test each one

Exercise B: "Recursive Design Practice, Part II"

For this exercise you will design and implement two functions for solving the following problem:

Given a list of characters as an argument, capitalize each vowel (a, e, i, o, u) and return the list.

Your first function must again approach this problem in an iterative style, and your second function must accomplish the same task but be entirely recursive in nature.

In order to complete this task, you will need to:

- assume that you are being given a list of characters

Your submission for this exercise:

- must be a source code file with filename² `'comp1405_f21_#####_tutorial_10_b.py'`
- must include both a recursive and a non-recursive function implementation, and test each one

¹ You must replace the number signs in the filename with your official nine-digit student identification number.

² You must replace the number signs in the filename with your official nine-digit student identification number.