

COMP 10280

Programming I (Conversion)

Practical Sheet 10

Déardain, 5 Deireadh Fómhair 2023

For each of the following questions, write an algorithm in pseudocode first before writing a Python program. Submit your algorithms in pseudocode as well as your Python programs.

1. Write a program that prompts the user for an integer and performs *exhaustive enumeration* to find the integer square root of the number. By “exhaustive enumeration”, we mean that we start at 0 and successively go through the integers, checking whether the square of the integer is equal to the number entered.

If the number is not a perfect square, the program should print out a message to that effect. The program should exit when a negative number is entered.

Save this program as p10p1.py.

2. Write a program that prompts the user for a series of integers and, for each of the numbers entered, performs *exhaustive enumeration* to find the integer cube root of the number.

If the number is not a perfect cube, the program should print out a message to that effect. Note that the program should work for negative numbers as well as positive numbers. The program should exit when a 0 is entered.

Save this program as p10p2.py.

3. Write a program that prompts the user for a series of strings and counts and prints out the number of vowels (letters 'a', 'e', 'i', 'o' or 'u') in each string. The program should exit when an empty string is entered.

Save this program as p10p3.py.

**Please upload your work to
the Brightspace site before Sunday
evening.**

**You should keep a copy of your programs
for your portfolio.**