DAY 1 OUTPUT

1. Given two strings “s” and “t”, determine if they are isomorphic. Two

strings “s” and “t” are isomorphic if the characters in “s” can be replaced to get “t”. All

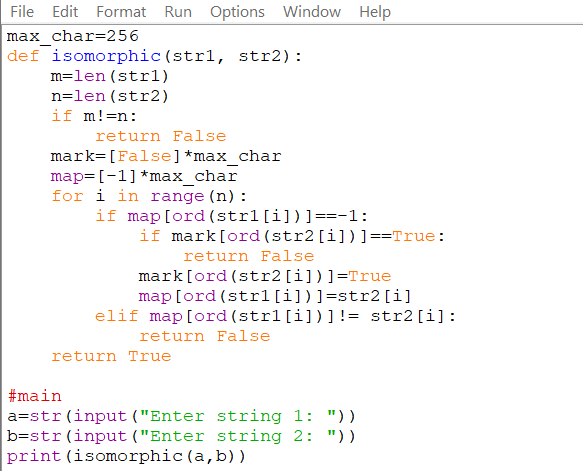
occurrences of a character must be replaced with another character while preserving the order

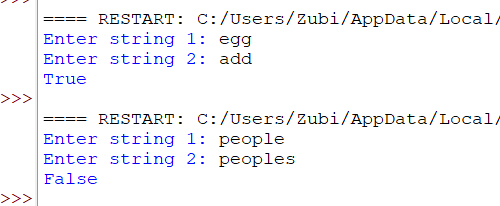
of characters. No two characters may map to the same character, but a character may map to

itself.

Constraints

 s and t consist of any valid ascii character.

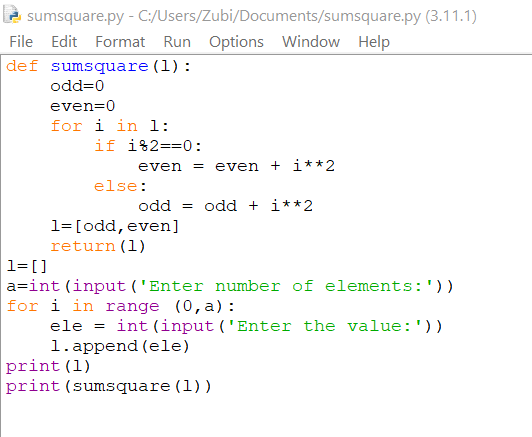


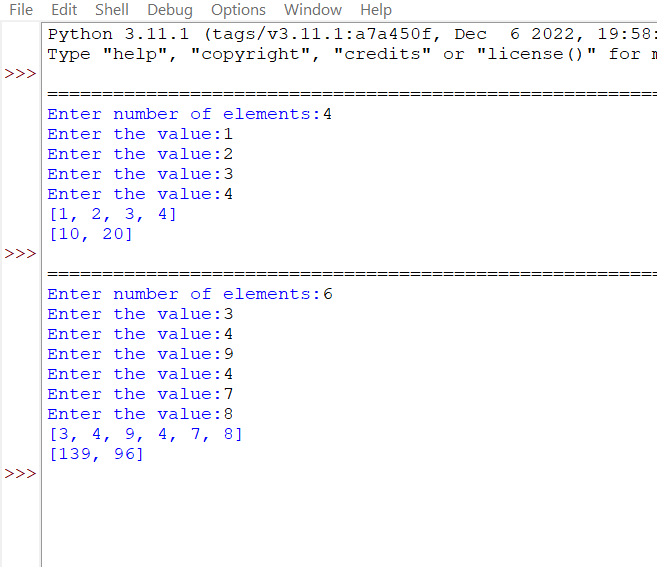


2. Write a Python function sumsquare(l) that takes a nonempty list of integers and returns a

list [odd,even], where odd is the sum of squares of all the odd numbers in l and even is the

sum of squares of all the even numbers in l.





3.Write an algorithm to determine if a number n is happy.

A happy number is a number defined by the following process:

Starting with any positive integer, replace the number by the sum of the squares of its

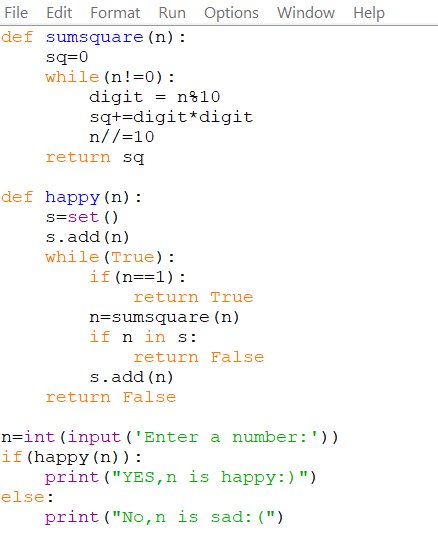
digits.

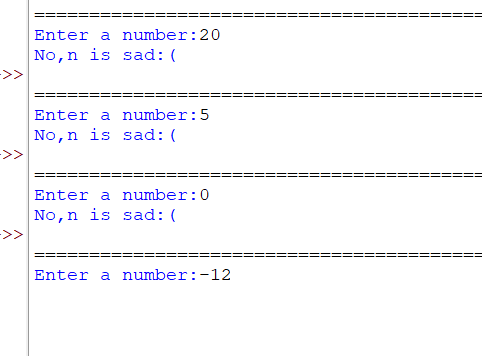
Repeat the process until the number equals 1 (where it will stay), or it loops endlessly

in a cycle which does not include 1.

Those numbers for which this process ends in 1 are happy.

Return true if n is a happy number, and false if not.

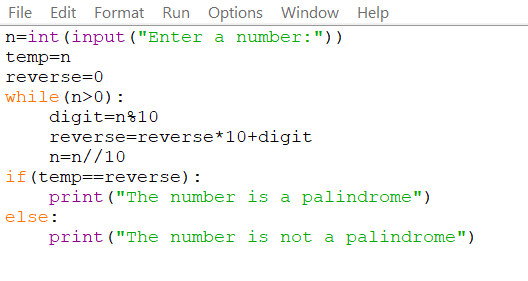


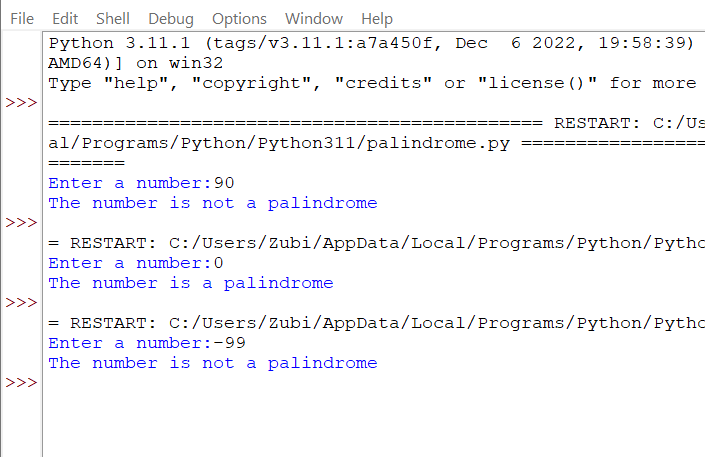


4.Given an integer x, return true if x is palindrome integer.

An integer is a palindrome when it reads the same backward as forward.

For example, 121 is a palindrome while 123 is not.





5. A bakery sells loaves of bread for 185 rupees each. Day old bread is discounted by 60

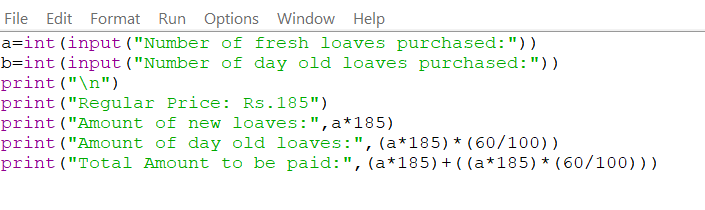
percent. Write a program that begins by reading the number of loaves of day old bread being

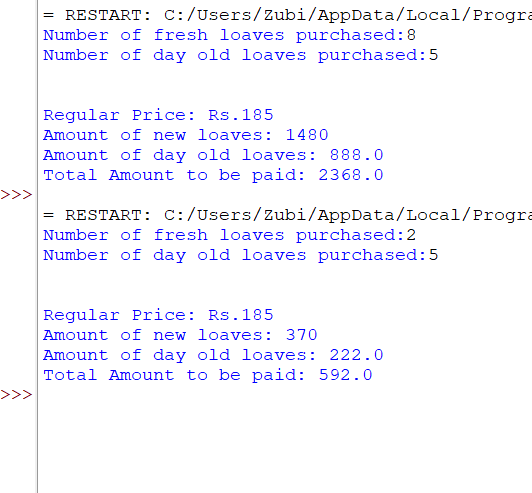
purchased from the user. Then your program should display the regular price for the bread,

the discount because it is a day old, and the total price. All of the values should be displayed

using two decimal places, and the decimal points in all of the numbers should be aligned

when reasonable values are entered by the user.





6. Given n non-negative integers a1,a2,a3,...an where each represents a point at coordinate (i,

ai) . „ n „ vertical lines are drawn such that the two endpoints of line i is at (i, ai) and (i,0).

Find two lines, which together with x-axis forms a container, such that the container contains

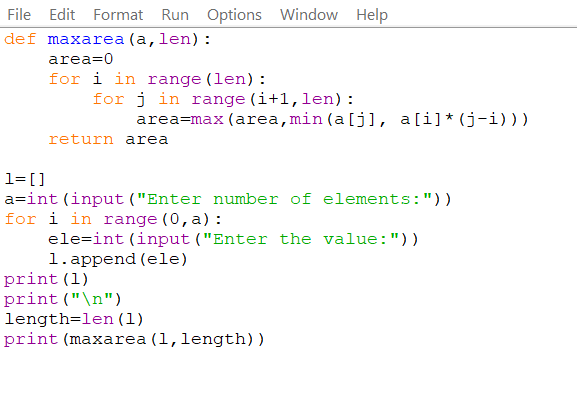
the most water.

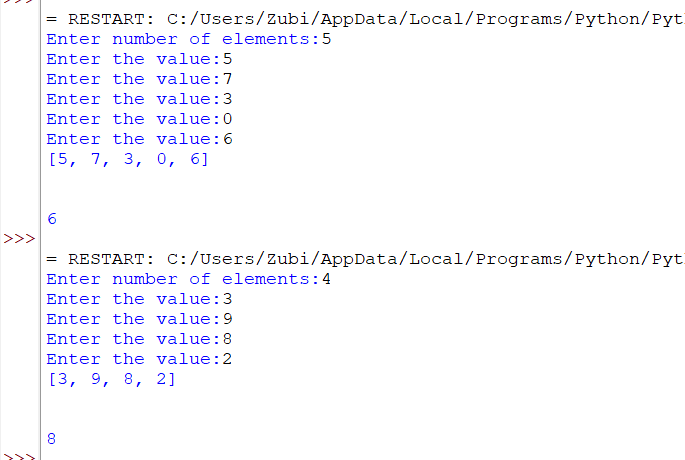
The program should return an integer which corresponds to the maximum area of water that

can be contained (maximum area instead of maximum volume sounds weird but this is the

2D plane we are working with for simplicity).

Note: You may not slant the container.



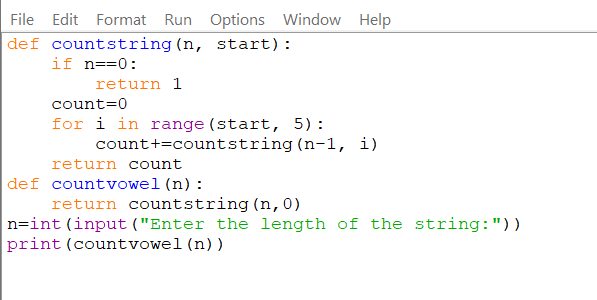


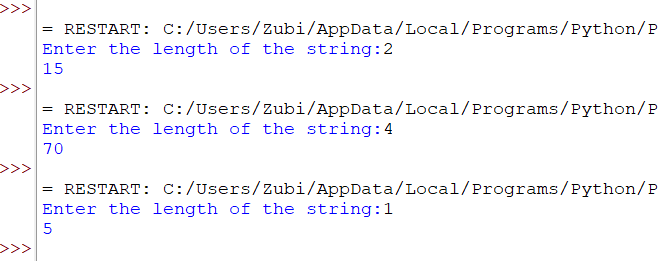
7. Given an integer n, return the number of strings of length n that consist only of vowels

(a, e, i, o, u) and are lexicographically sorted.

A string s is lexicographically sorted if for all valid i, s[i] is the same as or comes

before s[i+1] in the alphabet.





8. A valid number can be split up into these components (in order):

1. A decimal number or an integer.

2. (Optional) An 'e' or 'E', followed by an integer.

A decimal number can be split up into these components (in order):

1. (Optional) A sign character (either '+' or '-').

2. One of the following formats:

1. One or more digits, followed by a dot '.'.

2. One or more digits, followed by a dot '.', followed by one or more digits.

3. A dot '.', followed by one or more digits.

An integer can be split up into these components (in order):

1. (Optional) A sign character (either '+' or '-').

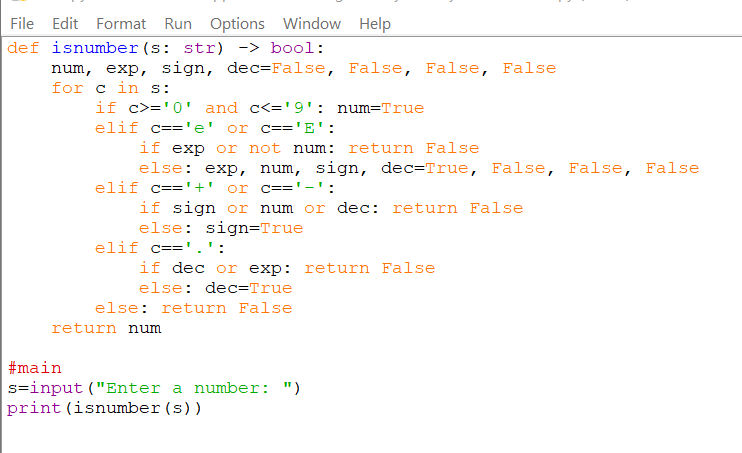
2. One or more digits.

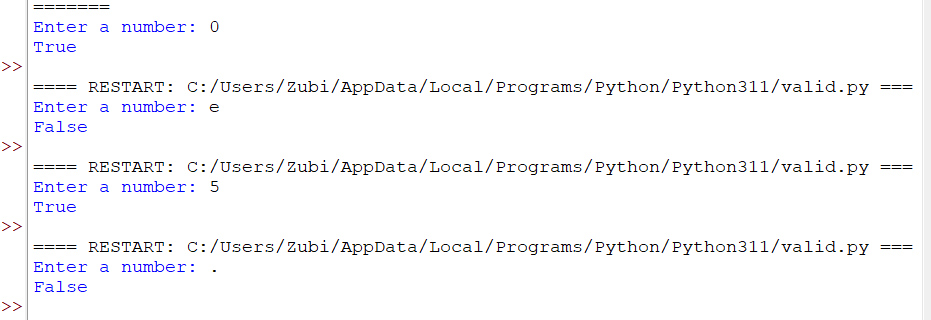
For example, all the following are valid numbers: ["2", "0089", "-0.1", "+3.14", "4.", "-.9",

"2e10", "-90E3", "3e+7", "+6e-1", "53.5e93", "-123.456e789"], while the following are not

valid numbers: ["abc", "1a", "1e", "e3", "99e2.5", "--6", "-+3", "95a54e53"].

Given a string s, return true if s is a valid number.



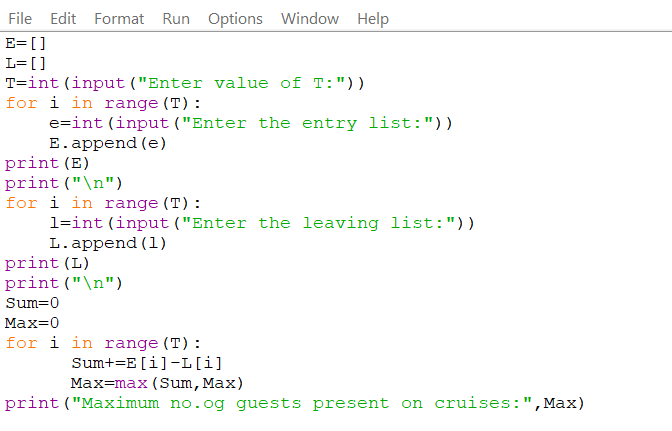


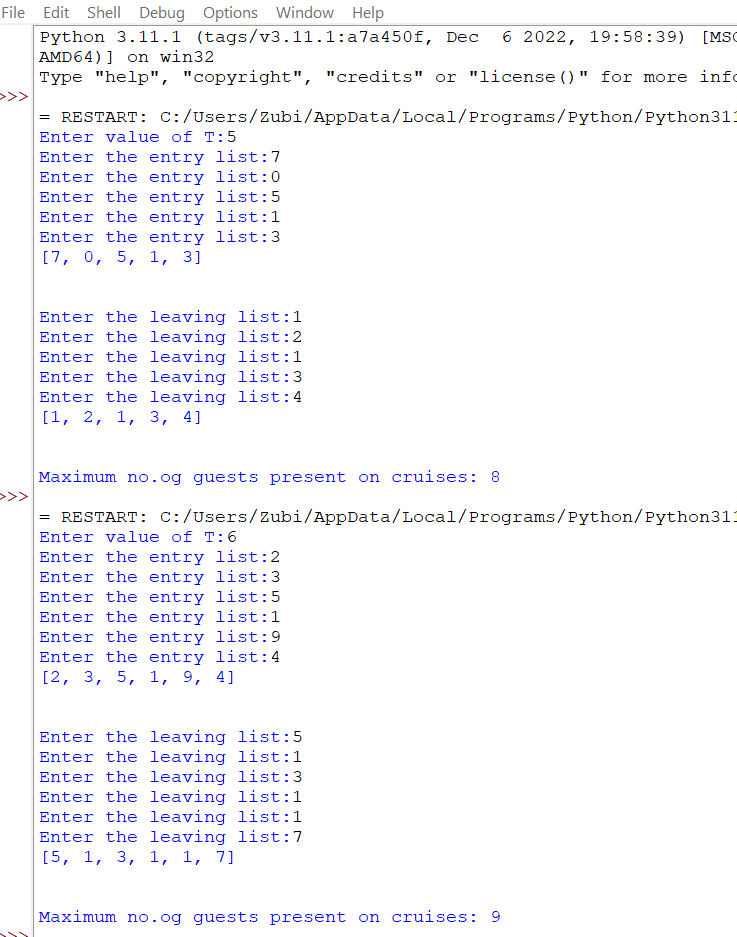
9. A party has been organised on a cruise. The party is organised for a limited time (T). The

number of guests entering (E[i]) and leaving (L[i]) the party at every hour is represented as

elements of the array. The task is to find the maximum number of guests present on the cruise

at any given instance within T hours.





10.Modify string by replacing characters by alphabets whose distance from that character is

equal to its frequency

Given a string S consisting of N lowercase alphabets, the task is to modify the string S by

replacing each character with the alphabet whose circular distance from the character is equal

to the frequency of the character in S.

