

Python – Assessment -2

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Write python programs for the following:

(Make all the programs as generic as possible)

ANSWER ANY 4 PROGRAMS OF YOUR CHOICE

1. Find a palindrome number closest to the given input. For eg: if 487 is the number given as input by the user, the closest palindrome will be 484.
2. Get two strings from the user as input and check whether they are anagrams. Anagrams are the strings which are formed using the same characters as that of another string. For eg: 'dear' and 'read' are anagrams whereas 'deer' and 'red' are not anagrams.
3. Write a function to encrypt a string using Caesar Cipher.

Caesar cipher is an encryption technique by which each character in the string will be shifted 3 times.

Eg: A will be encrypted as D

K will be encrypted as N and so on.

Sample: Hello this is a secret

Output: Khoor wklv lv d vhfuhw

4. Get a list of numbers from the user.

Numbers = [23,34,45,12,2,7,15,5,17,19]

Create a new list named 'new_list' which stores the position of prime numbers present in the above list 'numbers'

Sort and display the result.

5. Bus fare calculator:

You are provided with two lists

stops=["Tiruporur",'Kalavakkam','Kelambakkam','Navalur','Shollinganallur']

coupons=['10OFF','FLAT10','OFF10']

Assume the distance between two consecutive stops as 5 kms .(for example, Distance between Tiruporur and Kelambakkam is 10 kms)

Both onward and backward journey is possible (i.e., Travelling from Shollinganallur to Kalavakkam is also possible)

Get source and destination from the user and calculate the distance to be travelled. Source and destination can take any of the values from the list 'stops' mentioned above.

Get no of tickets also as input.

Now according to the distance and no of tickets, fare has to be calculated as follows:

Distance (in kms)	Rate per ticket(in Rs)
0 to 5	10
6 to 10	20
11 to 15	30
16 to 20	40

If the distance to be travelled is more than 10 kms, ask the user to enter coupon code if he has any

Validate the coupon using the list 'coupons' mentioned above.

If the coupon is valid, provide 10 percent discount on total fare and display the final amount to be paid by the user.