Practise Exercises - Test on Logic Ability

1.A bicyclist cycles around a circular park with a pathway connecting two opposite end points of the path of length 7kms. Develop a logic that computes the total distance covered by the cyclist for a given set of rounds cycled.

Solution:

a=int(input("Enter the no of rounds: "))

res=a\*14

print(res,"Kms travelled")

**output**

**Text

Description automatically generated**

2.A fixed set of positive integers is dictated by the mathematics professor during a puzzle contest. The professor asks the students to find a pair of numbers that result in a given sum. Code a logic that can automate this puzzle. Use the below input for your exercise

Solution:

l=list(map(int,input().split()))

s=int(input())

n=len(l)

c=None

for i in range (0,n):

for j in range (i+1,n):

if (l[i]+l[j]==s):

print("(",l[i],",",l[j],")",sep="")

c=1

break

if c==1:

break

if c!=1:

print('No Pairs found')

**output**

**A picture containing chart

Description automatically generated**

3.Alice is a cryptanalyst who is in charge of transmitting messages to bob without any intruder

getting hands on it. Alice thinks of transmitting the message by reversing it with a random

character appended as prefix to the encoded message.

Solution:

import random

a=input()

print(random.choice(list(a)).upper()+a[::-1])

**output**

Text

Description automatically generated

4.As a computer engineer, you are requested to reduce the storage space needed to store the textual content in the computer. Write a logic that can compress the content as given in the below example.

Solution:

s=input()

c=0

for i in range(0,(len(s)-1)):

if(s[i]==s[i+1]):

c=c+1

else:

if(c==0):

print(s[i],end="")

else:

c=c+1

print(s[i]+str(c),end="")

c=0

if(i==(len(s)-2)):

if(c==0):

print(s[i],end="")

else:

c=c+1

print(s[i]+str(c),end="")

**output**

Text

Description automatically generated

5.In a puzzle contest, the chairman of your English club posts a problem to compare a given pair of words and eliminate all common characters in them. To speed up the process of judging, thecomputer club head was requested to prepare computer logic. Please code a solution to theabove problem applying your own skillset.

Solution:

w1=input()

w2=input()

v= ''.join(sorted(set(w1) ^ set(w2)))

print(str(v))

**output**

Text

Description automatically generated7.The alphabetical value is represented from 1-26 for characters A-Z respectively. Using this

principle generate a crypto decoder that can generate the message for transmitted sequence of alphabetical values.

Solution:

a=list(map(int,input().split()))

for i in a:

print(chr(64+i),end='' “)

**output**

Text, letter

Description automatically generated