# 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.

**Input :** Enter No. of Rounds : 10

**Output : ‘x’** Kms travelled.

**Program**

n=float(input("Enter No.of Rounds"))

print(n\*7,"Kms travelled")

# #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.

# Case – 1

**Input :** arr = [1, 2, 3, 4, 6] & Sum = 8

**Output :** 2,6

# Case – 2

**Input :** arr = [1, 2, 3, 4, 9] & Sum = 8

**Ouput:** No Pairs found

**Program**

n=list(map(int,input("arr = ").strip().split(" ")))

s=int(input("Sum = "))

f=0

for x in range(0,len(n)-1):

for y in range(x+1,len(n)):

if(n[x]+n[y]==s):

print(n[x],",",n[y])

f=1

if(f==0):

print("No Pairs found")

# #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.

**Input :** Pentafox

**Ouput:** Oxofatnep

**Program**

import random

s=input()

s.lower()

n=random.randint(0,len(s)-1)

print(s[n].upper()+s[::-1])

# #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.

**Input :** All is well.

**Output :** Al2 is wel2 (Character followed by its number of occurrence)

**Program**

s=input()

c=1

ans=""

i=0

while(i<len(s)):

c=1

print(s[i])

f=0

ans+=s[i]

if s[i].isspace():

i+=c

continue

for j in range(i+1,len(s)):

if s[j].isspace():

break

if s[i]==s[j]:

f=1

c+=1

if(f==1):

ans+=str(c)

f=0

i+=c

print(ans)

# #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, the computer club head was requested to prepare computer logic. Please code a solution to the above problem applying your own skillset.

|  |  |  |
| --- | --- | --- |
| **Input Output** | **:** Word-1: Rajesh  **:** RjGn  **Program**  import math  s=input()  ss=input()  l=list(ss)  ans=""  for x in range(0,len(s)):  if s[x] not in l:  ans+=s[x]  l=list(s)  for x in range(0,len(ss)):  if ss[x] not in l:  ans+=ss[x]  print(ans) | Word-2: Ganesh |
| **#6** |  |  |

A school camp is organized by a school to support the process of preparing their students for an examination. They are in need of a study timetable that has following assumptions: **Assumptions:**

1. Total Days of Camp – 5 Days
2. Total Hours a day – 5 Days
3. Total Subjects – 5 Subjects

**Note:** The timetable should not follow the same order and should be in random everyday. Prepare code logic to help the School.

**Program**

for x in range(1,6):

i=x

for y in range(1,6):

print(i,end=" ")

i+=1

if(i>5):

i=1

print()

# #7

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.

**Input :** 1,2,3,4,26

**Output :** ABCDZ

**Program**

n=list(map(int,input().split(",")))

for x in n:

x+=64

print(chr(x),end="")

# #8

Implement CRUD operations as an API using Python Flask and a DB in backend (prefer MySQL or MariaDB).

Push your code into a Github Repo and share it with me (ID: sctaldo).