CSE110

IF THIS DOC IS SHARED WITH YOU THEN YOU CAN ADD MORE QUESTIONS TO THIS DOC FROM QUIZ 1 AND 2 THAT ARE NOT YET INCLUDED HERE.

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(If you see a question twice , add a comment)

**𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻: 1**

1. Sheldon Cooper once was knocking on the door of Penny. As we all know, he
2. goes like “Knock! Knock! Knock! Penny! Knock! Knock! Knock! Penny! …”. He
3. continues to knock on the door until Penny opens. It requires one second
4. for each word. If Penny opens the door after N(input) sec, then write a
5. python program to print out the whole sentence generated by that time.
6. Note: There will only be a single input N in your program.
7. ================================
8. Sample Input 1:
9. 4
10. Sample Output 1:
11. Knock! Knock! Knock! Penny!
12. Explanation1:
13. In 4 sec Sheldon can only deliver 4 words. Thus the output consists of 4
14. words.
15. ================================
16. Sample Input 2:
17. 6
18. Sample Output 2:
19. Knock! Knock! Knock! Penny! Knock! Knock!
20. Explanation2:
21. In 6 sec Sheldon can only deliver 6 words. Thus the output stops after 2
22. knocks on the second round.
23. ================================
24. Sample Input 3:
25. 9
26. Sample Output 3:
27. Knock! Knock! Knock! Penny! Knock! Knock! Knock! Penny! Knock!
28. Explanation3:
29. In 9 sec Sheldon can only deliver 9 words. Thus the output stops after a
30. single knock on the third round.

**Question :2**

Write a Python program that takes a list and a step size(integer number) as

inputs from the user. Your program should swap elements from the front and

back while maintaining the step size.

[You are not allowed to use built-in replace() function]

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Sample Input 1:5

A,B,C,D,E,F,G,H

2

Sample Output 1:

Before swap: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H']

After swap: ['H', 'B', 'F', 'D', 'E', 'C', 'G', 'A']

Explanation 01:

Here in the input, a list is given as input, and 2 is the step size.

‘A’(index0) swaps places with ‘H’(index -1). Then step size increments by

2. 0+2= 2. Swapping starts from index2. ‘C’(index2) swaps places with

‘F’(index -3).

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Sample Input 2:

A,B,C,D,E,F,G,H

5

Sample Output 2:

Step size is not suitable

Sample Output 2:

Step size is not suitable

Explanation 02:

Here in the input, a list is given as input, and 5 is the step size which

is greater than half of the list length. So swapping is not possible.

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Sample Input 3:

A,B,C,D,E,F,G,H,I,J,K

3

Sample Output3:

Before swap: ['A','B', 'C', 'D', 'E', 'F', 'G','H', 'I', 'J','K']

After swap: ['K', 'B', 'C', 'H', 'E', 'F', 'G', 'D', 'I', 'J', 'A']

Explanation 03:

Here in the input, a list is given as input, and 3 is the step size.

‘A’(index0) swaps places with ‘K’(index -1). Then step size increments by

3. 0+3= 3. Swapping starts from index3. ‘D’(index3) swaps places with

‘H’(index -4).

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**𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻:3**

Write a python program that takes a string as an input from the user. If

the sum of the first half of the input is equal to the sum of the last half

of the input, then it prints “You won the lottery!”, otherwise it prints

“You lost.”

The input can be digits only (0-9). If the length of the string is even,

then you need to consider all numbers. If the length is odd, you can ignore

the middle number.

[You are not allowed to use the built-in sum() and slice() for this task]

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Sample Input 1:

37938725

Sample Output 1:

You won the lottery!

Explanation 01:

The first half of the input = 3+7+9+3 = 22.

The last half of the input = 8+7+2+5 = 22.

The summation is equal. Since the length of the string is even, we

considered all numbers.

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Sample Input 2:

7357314

Sample Output 2:

You lost.

Explanation 02:

The first half of the input = 7+3+5 = 15

The last half of the input = 3+1+4 = 8

The summation is not equal. Since the length of the string is odd, we

ignored the middle number, 5.

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**𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻: 4**

Blissful number: a number where every digit is greater than its immediate

left digit is called a Blissful number. (e.g. 12345 is a blissful number).

A single digit number is not a blissful number.

Now write a python program that takes a number from the user and checks

whether it is a blissful number or not.

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Sample Input1

35789

Sample Output1

35789 is a blissful number

Explanation1:

5 is greater than 3. 7 is greater than 5. 8 is greater than 7. And 9 is

greater than 8. In other words, every digit is greater than its immediate

left digit. Therefore, 35789 is a blissful number

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Sample Input2

11

Sample Output2

11 is a normal number

Explanation2:

Here, 1 is not greater than 1. That is why it is not a blissful number.

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Sample Input3

5

Sample Output3

5 is a normal number

Explanation3:

Single digit number is not blissful number

You forwarded a message

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**𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻:5**

Write a Python program that asks the user for the value of n as input

and then prints the value of y as follows.

y = -3 + 5 - 7 + 9 ….. nth term

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Sample Input 1:

1

Sample Output 1:

For n = 1, y = -3

Explanation 1:

If the user gives n = 1, it prints -3.

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Sample Input 2:

2

Sample Output 2:

For n = 2, y = 2

Explanation 2:

If the user gives n = 2, it prints 2 i.e. -3+5 = 2

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Sample Input 3:

7

Sample Output 3:

For n = 7, y = -9

Explanation 3:

If the user gives n = 7, it prints -9 i.e. -3+5-7+9-11+13-15 = -9

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**𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻:6**

Write a python program that takes N student ids as input from the user (N

is an input). Then calculates the sum of digits for each student id.

Finally, print the statements from the following chart.

If the digit total is from 5 to 10 (inclusive), then print “Ciao”.

If the digit total is from 11 to 15(inclusive), then print “Hello”.

If the digit total is from 20 to 25(inclusive), then print “Hola”.

If the digit total is from 30 to 35(inclusive), then print “Salut”.

For any other valid number, print “ByeBye”.

Assume, the user will give valid student ids with 8 digits. You are not

allowed to use lists for this task.

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Sample Input 1:

2

21101710

15929010

Sample Output 1:

Hello

ByeBye

Explanation 1:

For 21101710, the total of the digits is 13 which falls in the range of 11

to 15, so it prints “Hello”.

For 15929010, the total of the digits is 27 which does not fall in any

specified range, so it prints “ByeBye”.

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Sample Input2:

4

20202020

10909010

17030050

13535059

Sample Output2:

Ciao

Hola

ByeBye

Salut

Explanation2:

For 20202020, the sum of the digits is 8 which falls in the range of 5 to

10, so it prints “Ciao”.

For 10909010, the sum of the digits is 20 which falls in the range of 20 to

25, so it prints “Hola”.

For 17030050, the sum of the digits is 16 which does not fall in any

specified range, so it prints “ByeBye”.

For 13535059, the sum of the digits is 31 which falls in the range of 30 to

35, so it prints “Salut”.

You forwarded a message

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**Question : 7**

Write a Python program that takes a list and a step size(integer number) as

inputs from the user. Your program should swap elements from the front and

back while maintaining the step size.

[You are not allowed to use built-in replace() function]

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Sample Input 1:

A,B,C,D,E,F,G,H

2

Sample Output 1:

Before swap: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H']

After swap: ['H', 'B', 'F', 'D', 'E', 'C', 'G', 'A']

Explanation 01:

Here in the input, a list is given as input, and 2 is the step size.

‘A’(index0) swaps places with ‘H’(index -1). Then step size increments by

2. 0+2= 2. Swapping starts from index2. ‘C’(index2) swaps places with

‘F’(index -3).

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Sample Input 2:

A,B,C,D,E,F,G,H

5

Sample Output 2:

Step size is not suitable

Sample Output 2:

Step size is not suitable

Explanation 02:

Here in the input, a list is given as input, and 5 is the step size which

is greater than half of the list length. So swapping is not possible.

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Sample Input 3:

A,B,C,D,E,F,G,H,I,J,K

3

Sample Output3:

Before swap: ['A','B', 'C', 'D', 'E', 'F', 'G','H', 'I', 'J','K']

After swap: ['K', 'B', 'C', 'H', 'E', 'F', 'G', 'D', 'I', 'J', 'A']

Explanation 03:

Here in the input, a list is given as input, and 3 is the step size.

‘A’(index0) swaps places with ‘K’(index -1). Then step size increments by

3. 0+3= 3. Swapping starts from index3. ‘D’(index3) swaps places with

‘H’(index -4).

**Question 8:**

Write a python program that will take a string as input from the user. The

input string should have a combination of BOTH the alphabets and the

digits. Then, your task is to identify the digits from that input string

and store those digits in a list. Finally, sort the list and print the

sorted list and the sum of digits as output to the user.

Note: You are allowed to use the built-in sort() or sorted() function here.

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Sample Input 01:

m4gt567q09y2

Sample Output 01:

['0', '2', '4', '5', '6', '7', '9']

33

Explanation 01:

Here from the given input string, the digits are stored in a list. After

sorting the digits, the sorted list is printed to the user. Then, the sum

of the digit which is 33 is printed.

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Sample Input 02:

954217

Sample Output 02:

There is no alphabet in the string

Explanation 02:

Here from the given input string, there is no alphabet in the string. That

is why it is printing “There is no alphabet in the string”

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Sample Input 03:

abcdefgh

Sample Output 03:

There is no digit in the string

Explanation 03: Here from the given input string, there is no digit in the

string. That is why it is printing “There is no digit in the string”

**𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻:9**

Write a python program that will take a sentence as an input from the user

where each word is separated by a space. Your task is to print the words

present in the sentence in a list format and finally print the sentence by

reversing each word.

[You are NOT allowed to use built-in reverse() or reversed()]

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Sample Input 1:

This is the list string quiz

Sample Output 1:

['This', 'is', 'the', 'list', 'string', 'quiz']

sihT si eht tsil gnirts ziuq

Explanation 01: Here, we have 5 words in the given sentence separated by

space. Then, those words have been printed in list format. Then each word

had been reversed and printed in the string format. “sihT’ is the reverse

of 'This' and so on.

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Sample Input2:

CSE110 is the first course of CSE

Sample Output 2:

['CSE110', 'is', 'the', 'first', 'course', 'of', 'CSE']

011ESC si eht tsrif esruoc fo ESC

Explanation 02: Here, we have 7 words in the given sentence separated by

space. Then, those words have been printed in list format. Then each word

had been reversed and printed in string format. “011ESC’ is the reverse

of 'CSE110' and so on.

**Question :10**

Write a python program that asks the user for a range (a starting

number(inclusive) and an ending number(inclusive)). Then take another input

to check, if the product of all the digits of each number is divisible by

this input or not. If it is divisible, then print it.

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Sample Input 1:

25

30

4

Sample Output 1:

12 16 0

Explanation 1:

The product of all the digits of each number from 25 to 30 is 2x5, 2x6,

2x7, 2x8, 2x9, 3x0. The final product is 10,12,14,16,18,0 respectively. Out

of these numbers only 12, 16 and 0 is divisible by 4 and therefore it is

printed.

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Sample Input 2:

351

356

9

Sample output 2:

45 90

Explanation2:

The product of all the digits of each number from 351 to 356 is 3x5x1,

3x5x2, 3x5x3, 3x5x4, 3x5x5, 3x5x6. The final product is 15, 30, 45, 60, 75,

90 respectively. Out of these numbers, only 45 and 90 are divisible by 9

and therefore it is printed.

**Question :11**

𝗤𝘂𝗲𝘀𝘁𝗶𝗼𝗻:

Write a python program that will take a sentence as an input from the user.

Assume the sentence will always contain only the alphabet and numbers. You

have to find the words from the sentence whose ASCII values sum up to an

EVEN number. Make a list of those words and print the list.

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Sample Input1

The first course of CSE is CSE110

Sample Output1

All words: ['The', 'first', 'course', 'of', 'CSE', 'is', 'CSE110']

Words with even ASCII sum: ['first', 'is']

Explanation 01:

Summation of ‘first’ is (f)102 + (i) 105 + (r) 114 + (s) 115 + (t) 116 =

552 which is even. Summation of ‘is’ is (i)105+(s)115 =220 which is even.

So, these two words have been added to the answer list.

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Sample Input 2

This is CSE110 2nd quiz

Sample Output 2

All words: ['This', 'is', 'CSE110', '2nd', 'quiz']

Words with even ASCII sum: ['This', 'is', '2nd']

Explanation 02: Summation of ‘this’ is (T)84+(h)104+(i)105+(s)115 = 408

which is even. Summation of ‘is’ is (i)105+(s)115 =220 which is even. The

summation of ‘2nd’ is (2)50+(n)110+(d)100=260 which is even. So, these

three words have been added to the answer list.

**Question :12**

Write a Python program that asks the user for quantity and takes some marks out of 100 as input. Valid marks are 0 to 100. However, due to user error, some marks may fall outside that range, say 101 or -5 (minus five). Print average of valid marks and percentage of invalid marks (Error Rate). Assume there is at least one valid mark and at least one invalid mark. ========================================================

Sample Input 1:

5

20

-3

105

70

100

Sample Output 1:

Average: 63.333333333333336

Error Rate (%): 40.0

Explanation 1:

5 means there are 5 inputs.

Average of valid marks is (20+70+100)/3 =190/3 = 63.333333333333336

-3 and 105 are invalid. So, there are 2 numbers out of 5 that are invalid.

Hence the percentage = 2/5x100 = 40.0

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Sample Input 2:

3

500

3

100

Sample Output 2:

Average: 51.5

Error Rate (%): 33.33333333333333

Explanation 2:

3 means there are 3 inputs.

Average of valid marks is (3+100)/2 = 103/2 = 51.5

500 is invalid. So, there is 1 number out of 3 that is invalid.

Hence the percentage = 1/3x100 = 33.33333333333333

**Question :13**

Write a python program that will take a string, a starting index, and an ending index as inputs from the user. The program will print the second next character from the starting index to the ending index of the string. If the ending index is not valid, then print “Invalid Index”.

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Sample Input 1:

bangladesh

2

7

Sample Output 1:

pincfg

Explanation1:

Here the given string length is 10 and from index 2 to index 7 the characters will be “nglade”. Then it will print the second next character “pincfg”.

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Sample Input 2:

science

1

7

Sample Output 2:

Invalid Index

Explanation2:

Here the end index is not valid. That is why it is printing Invalid Index”

**Question : Image**



