

Abhinav Srivatsa

21BDS0340

Computer Science Lab

FAT Exam

Question 1:

Raj has n pens. If Raj keeps percentage p of the pens, the remaining will be shared among his friends. Write a Python program to read the total number of pens, say it n . Also read the percentage (p) of pens that Raj will keep with him. Create a function[named share_YourRegistrationNumber] to Calculate the number of remaining pens (r) that will be shared among his friends.

If no pen is left for sharing display "No pens left to share".

If percentage of pens fractional part is ≥ 0.5 then raise the value to its higher integer and if it is < 0.5 then lower the value to its lower integer.

Input:

First line contains the value of n

Second line contains the value of p

Output:

The value of remaining pens(r)

Constraints:

$0 \leq p \leq 100$ Otherwise print "Percentage should be 0 to 100"

$n \geq 0$ Otherwise print "Pens should be ≥ 0 "

Code:

```
def share_21BDS0340(total_p, p_share):
    r = total_p - round(total_p * p_share / 100)
    if r == 0:
        r = 'No pens left to share'
    return r

n = int(input())
if n < 0:
    print('Pens should be  $\geq 0$ ')
else:
    p = int(input())
    if p < 0 or p > 100:
        print('Percentage should be 0 to 100')
    else:
        print(share_21BDS0340(n, p))
```

Algorithm:

share_21BDS0340(N , P):

Calculate R as $N - \text{rounded } N * P / 100$

If R is 0, display 'No pens left to share'

Return R

Read N

If $N < 0$, then display 'Pens should be ≥ 0 '

Else

Read P

If $P < 0$ or $P > 100$, then display 'Percentage should be 0 to 100'

Else, display share_21BDS0340(N, P)

Output:

	Test	Input	Expected	Got	
✓	1	30 14	26	26	✓
✓	2	30 90	3	3	✓
✓	3	30 100	No pens left to share	No pens left to share	✓

Passed all tests! ✓

Question 2:

Write a function `anaconda_code(your_input)` to convert the given input to word "Anaconda". The function accepts a single parameter. The parameter value is to be converted to bits i.e., 8 bits. The bits should be mapped to "Anaconda" which is also 8 characters length. When there is '1', the character should be of capital-case letter; if '0' then small-case letter.

Input:

A single line contains the value of n

Output:

A single line contains 'Anaconda' code

Constraint:

If the input is a number, then $0 \leq \text{input_number} \leq 255$ otherwise print "Number should be ≤ 255 "

Code:

```
def translator_21BDS0340(n):
    word = 'anaconda'
    letters = list(word)
    bin_arr = []
    try:
        n = int(n)
        n = str(bin(n))[2:]
        bin_arr = [n]
    except:
        n = n
        bin_arr = [format(ord(i), 'b') for i in n]
    output = []
    for i in bin_arr:
        index = 7
        for j in range(len(i) - 1, -1, -1):
            if i[j] == '1':
                letters[index] = letters[index].upper()
            index -= 1
        output.append(''.join(letters))
        letters = list(word)
    return output

word = input()
print(' '.join(translator_21BDS0340(word)))
```

Algorithm:

translator_21BDS0340(N):

 Initialise Word as 'anaconda'

 Initialize Letters as a list of Word

 Initialise Bin_Arr as list

 Try casting N as integer

 If $N < 0$ or $N > 255$, then return 'Number should be ≤ 255 '

 Calculate N as string of binary of N but slicing the first 2 characters

 Except initialise Bin_Arr as binary version of the characters of N

 Initialise Output as list

 Loop through Bin_Arr as I

 Initialise Index as 7

 Loop through length of I backwards with J

 If I of J is 1, then make Letters of Index upper case

 Decrement Index by 1

 Append Letters to Output

 Initialize Letters as a list of Word

 Return Output

Read Word

Initialise Output as translator_21BDS0340(Word)

If Output's type is list, then display Output joined by spaces

Else, display Output

Output:

	Test	Input	Expected	Got	
✓	1	12	anacONda	anacONda	✓
✓	2	is	aNAcOndA aNAConDA	aNAcOndA aNAConDA	✓

Passed all tests! ✓