Question1

Create a function that takes a string and returns a string in which each character is repeated once.

**Examples**

double\_char("String") ➞ "SSttrriinngg"

double\_char("Hello World!") ➞ "HHeelllloo WWoorrlldd!!"

double\_char("1234!\_ ") ➞ "11223344!!\_\_ "

**Ans:**

def double\_char(string):

new\_string=""

for s in string:

new\_string+=s+s

print(new\_string)

double\_char("1234!\_ ")

Question2

Create a function that reverses a boolean value and returns the string "boolean expected" if another variable type is given.

### Examples

reverse(True) ➞ False

reverse(False) ➞ True

reverse(0) ➞ "boolean expected"

reverse(None) ➞ "boolean expected"

**Ans:**

def reverse(val):

if type(val)==bool:

result=not(val)

print(result)

else:

print("boolean expected")

reverse(None)

Question3

Create a function that returns the **thickness (in meters)** of a piece of paper after folding it n number of times. The paper starts off with a thickness of **0.5mm**.

### Examples

num\_layers(1) ➞ "0.001m"

# Paper folded once is 1mm (equal to 0.001m)

num\_layers(4) ➞ "0.008m"

# Paper folded 4 times is 8mm (equal to 0.008m)

num\_layers(21) ➞ "1048.576m"

# Paper folded 21 times is 1048576mm (equal to 1048.576m)

**Ans:**

def num\_layers(a):

res = 0.5

for \_ in range(a):

res \*= 2

print("{}m".format(res / 1000))

num\_layers(21)

Question4

Create a function that takes a single string as argument and returns an ordered list containing the indices of all capital letters in the string.

### Examples

index\_of\_caps("eDaBiT") ➞ [1, 3, 5]

index\_of\_caps("eQuINoX") ➞ [1, 3, 4, 6]

index\_of\_caps("determine") ➞ []

index\_of\_caps("STRIKE") ➞ [0, 1, 2, 3, 4, 5]

index\_of\_caps("sUn") ➞ [1]

**Ans:**

def index\_of\_caps(string):

l=[]

index=0

for s in string:

if str(s).isupper():

l.append(index)

index+=1

print(l)

index\_of\_caps("sUn")

Question5

Using list comprehensions, create a function that finds all even numbers from 1 to the given number.

### Examples

find\_even\_nums(8) ➞ [2, 4, 6, 8]

find\_even\_nums(4) ➞ [2, 4]

find\_even\_nums(2) ➞ [2]

**Ans:**

def find\_even\_nums(n):

print([i for i in range(1, n+1) if i%2==0])

find\_even\_nums(2)