**BASIC PROGRAMMING ASSIGNMENT\_19 -SUBMITTED BY SAMUEL DEVDAS**

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):

repstring=''

for char in range(len(string)):

repstring=''.join([repstring,2\*string[char]])

return repstring

double\_char("Hello World!")

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(bool1):

if bool1 is (True):

print(not bool1)

elif bool1 is (False):

print(not bool1)

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(folds):

thickness=0.005

for fold in range(folds):

thickness=2\*thickness

return (thickness)

num\_layers(20)

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):

caps=[]

for char in string:

if char.isupper():

caps.append(string.index(char))

return caps

index\_of\_caps("STRIKE")

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):

e=[num for num in range(n+1) if num%2==0]

return e

find\_even\_nums(12)