Question 1

Create a function that takes a number as an argument and returns True or False depending on whether the number is symmetrical or not. A number is symmetrical when it is the same as its reverse.

**Examples**

is\_symmetrical(7227) ➞ True

is\_symmetrical(12567) ➞ False

is\_symmetrical(44444444) ➞ True

is\_symmetrical(9939) ➞ False

is\_symmetrical(1112111) ➞ True

Sol:-

def is\_symmetrical(n):

return str(n) == str(n)[::-1]

Question 2

Given a string of numbers separated by a *comma and space*, return the product of the numbers.

### Examples

multiply\_nums("2, 3") ➞ 6

multiply\_nums("1, 2, 3, 4") ➞ 24

multiply\_nums("54, 75, 453, 0") ➞ 0

multiply\_nums("10, -2") ➞ -20

Sol:-

def multiply\_nums(nums):

# Split the string into a list of numbers

nums\_list = nums.split(', ')

# Convert each number in the list to an integer

nums\_int = [int(num) for num in nums\_list]

# Calculate the product of the numbers using a loop

product = 1

for num in nums\_int:

product \*= num

return product

Question 3

Create a function that squares every digit of a number.

### Examples

square\_digits(9119) ➞ 811181

square\_digits(2483) ➞ 416649

square\_digits(3212) ➞ 9414

### Notes

The function receives an integer and must return an integer.

Sol:-

def square\_digits(num):

# Convert the number to a string

num\_str = str(num)

# Square each digit and concatenate the results into a string

result\_str = ''

for digit in num\_str:

digit\_int = int(digit)

digit\_squared = digit\_int \*\* 2

result\_str += str(digit\_squared)

# Convert the string back to an integer and return it

result\_int = int(result\_str)

return result\_int

Question 4

Create a function that sorts a list and removes all duplicate items from it.

### Examples

setify([1, 3, 3, 5, 5]) ➞ [1, 3, 5]

setify([4, 4, 4, 4]) ➞ [4]

setify([5, 7, 8, 9, 10, 15]) ➞ [5, 7, 8, 9, 10, 15]

setify([3, 3, 3, 2, 1]) ➞ [1, 2, 3]

Sol:-

def setify(lst):

# Sort the list and remove duplicates using a set

sorted\_set = sorted(set(lst))

# Convert the set back to a list and return it

result = list(sorted\_set)

return result

Question 5

Create a function that returns the mean of all digits.

### Examples

mean(42) ➞ 3

mean(12345) ➞ 3

mean(666) ➞ 6

### Notes

* The mean of all digits is the sum of digits / how many digits there are (e.g. mean of digits in 512 is (5+1+2)/3(number of digits) = 8/3=2).
* The mean will always be an integer.

Sol:-

def mean(num):

# Convert the number to a string

num\_str = str(num)

# Calculate the sum of digits and the number of digits

digit\_sum = sum([int(digit) for digit in num\_str])

num\_digits = len(num\_str)

# Calculate the mean and return it

mean = digit\_sum // num\_digits

return mean