**Question 1**

**Create a function that takes a list of non-negative integers and strings and return a new list without the strings.**

**Examples**

**filter\_list([1, 2, "a", "b"]) ➞ [1, 2]**

**filter\_list([1, "a", "b", 0, 15]) ➞ [1, 0, 15]**

**filter\_list([1, 2, "aasf", "1", "123", 123]) ➞ [1, 2, 123]**

def filter\_list(lst):

result = []

for elem in lst:

if isinstance(elem, int):

result.append(elem)

return result

**Question 2**

**The "Reverser" takes a string as input and returns that string in reverse order, with the opposite case.**

### Examples

**reverse("Hello World") ➞ "DLROw OLLEh"**

**reverse("ReVeRsE") ➞ "eSrEvEr"**

**reverse("Radar") ➞ "RADAr"**

def reverse(string):

reversed\_string = ""

for i in range(len(string)-1, -1, -1):

if string[i].isupper():

reversed\_string += string[i].lower()

else:

reversed\_string += string[i].upper()

return reversed\_string

**Question 3**

**You can assign variables from lists like this:**

**lst = [1, 2, 3, 4, 5, 6]**

**first = lst[0]**

**middle = lst[1:-1]**

**last = lst[-1]**

**print(first) ➞ outputs 1**

**print(middle) ➞ outputs [2, 3, 4, 5]**

**print(last) ➞ outputs 6**

**With Python 3, you can assign variables from lists in a much more succinct way. Create variables first, middle and last from the given list using destructuring assignment (check the Resources tab for some examples), where:**

**first ➞ 1**

**middle ➞ [2, 3, 4, 5]**

**last ➞ 6**

**Your task is to unpack the list writeyourcodehere into three variables, being first, middle, and last, with middle being everything in between the first and last element. Then print all three variables.**

lst = [1, 2, 3, 4, 5, 6]

first, \*middle, last = lst

print(first) #outputs 1

print(middle) #outputs [2, 3, 4, 5]

print(last) #outputs 6

**Question 4**

**Write a function that calculates the factorial of a number recursively.**

### Examples

**factorial(5) ➞ 120**

**factorial(3) ➞ 6**

**factorial(1) ➞ 1**

**factorial(0) ➞ 1**

def factorial(n):

if n == 0:

return 1

else:

return n \* factorial(n-1)

**Question 5**

**Write a function that moves all elements of one type to the end of the list.**

### Examples

**move\_to\_end([1, 3, 2, 4, 4, 1], 1) ➞ [3, 2, 4, 4, 1, 1]**

**# Move all the 1s to the end of the array.**

**move\_to\_end([7, 8, 9, 1, 2, 3, 4], 9) ➞ [7, 8, 1, 2, 3, 4, 9]**

**move\_to\_end(["a", "a", "a", "b"], "a") ➞ ["b", "a", "a", "a"]**

# loop through the list

for i in lst:

# if element is same as el

if i == el:

# append to back\_list

back\_list.append(i)

else:

# append to front\_list

front\_list.append(i)

# concatenate both lists and return the result

return front\_list + back\_list