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**תרגיל 1:** קוד:

# 1-

def length\_of\_string(s):

""" Function length\_of\_string gets a string and return the size of it."""

# calling the same function with size -1 of "s" every summon.

return 1 + length\_of\_string(s[1:]) if s != "" else 0

def main():

text = "Experimental text to test recursive function."

print("Length of string:\n%s\n is %d."% (text,length\_of\_string(text)))

main()

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**פלט:**

**תרגיל 2:** קוד:

# 2-

def recursive\_has\_prefix(str1, prefix):

""" Function recursive\_has\_prefix gets two string and checks

if the "prefix" is prefix to the other and return a boolean answer.

"""

# if "str1" is larger by size than the "prefix".

if len(str1) >= len(prefix):

# empty string always prefix to any string.

if prefix == "":

return 1

# checking if first char in both string are equal.

if str1[0] == prefix[0]:

# calling my self if there is left to check in "prefix".

return recursive\_has\_prefix(str1[1:], prefix[1:]) \

if len(prefix) > 1 else 1

def main():

isPrefix = True

while isPrefix:

str1 = input("Please enter a string: ")

pref = input("Please enter a prefix string: ")

isPrefix = recursive\_has\_prefix(str1, pref)

if isPrefix:

print("The text has the prefix")

else:

print("No prefix")

print()

main()

פלט:

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**תרגיל 3:** קוד:

# 3-

def is\_palindrome(arr):

""" Function is\_palindrome gets a list and returns whether

the list is palindrome or not.

"""

# if list contains one element or less it's a palindrome by definition.

if len(arr) > 1:

if arr[0] == arr[-1]:

# calling the function again in order to check

# if all the rest of the element are equal.

return is\_palindrome(arr[1:-1])

else:

return False

return True

def main():

""" Function main gets a list from the user and

checks if the list is palindrome by calling a util function.

"""

while True:

palindrome\_list = []

# gets a string with "," separating the numbers.

string = input("Enter numbers separated by comma: ")

# splitting the string into list of string numbers

list\_of\_string = string.split(",")

# converting the string numbers into integers.

for i in range(len(list\_of\_string)):

if list\_of\_string[i] != "":

palindrome\_list.append(int(list\_of\_string[i]))

# prints the result to the user according to the returned value of "is\_palindrome"

print("The array is", "" if is\_palindrome(palindrome\_list)

else "not", "a palindrome")

is\_retry = input("Try again? (y/n): ")

# checking if to stop the endless loop

if is\_retry == "N" or is\_retry == "n":

print("Finish")

break

main()

פלט:

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