***Python Task Assignment***

Q1. Create a function which will take a list as an argument and return the product of all the numbers

after creating a flat list.

Use the below-given list as an argument for your function.

list1 = [1,2,3,4, [44,55,66, True], False, (34,56,78,89,34), {1,2,3,3,2,1}, {1:34, "key2": [55, 67, 78, 89], 4: (45,

22, 61, 34)}, [56, 'data science'], 'Machine Learning']

def product\_of\_numbers(lst):

flat\_list = []

for item in lst:

if isinstance(item, (list, tuple, set)):

flat\_list.extend(item)

else:

flat\_list.append(item)

product = 1

for item in flat\_list:

if isinstance(item, (int, float)):

product \*= item

return product

list1 = [1,2,3,4, [44,55,66, True], False, (34,56,78,89,34), {1,2,3,3,2,1}, {1:34, "key2": [55, 67, 78, 89], 4: (45, 22, 61, 34)}, [56, 'data science'], 'Machine Learning']

print(product\_of\_numbers(list1))

Output:5531944716339200

Q2. Write a python program for encrypting a message sent to you by your friend. The logic of encryption

should be such that, for a the output should be z. For b, the output should be y. For c, the output should

be x respectively. Also, the whitespace should be replaced with a dollar sign. Keep the punctuation

marks unchanged.

Input Sentence: I want to become a Data Scientist.

Encrypt the above input sentence using the program you just created.

Note: Convert the given input sentence into lowercase before encrypting. The final output should be

Lowercase.

def encrypt\_message(msg):

msg = msg.lower()

encrypted\_msg = ''

for char in msg:

if char.isalpha():

encrypted\_char = chr(219 - ord(char))

encrypted\_msg += encrypted\_char

elif char == ' ':

encrypted\_msg += '$'

else:

encrypted\_msg += char

return encrypted\_msg.lower()

# Example usage:

message = "I want to become a Data Scientist."

encrypted\_message = encrypt\_message(message)

print(encrypted\_message)

Output: r dznv gl yvfnzh z wztz hvxlmwvg.