Problem Question 1 (Loop)

Question 1

Write a python program that takes a number(Integer) as an input from the user. Then print a square and a right angle triangle alternatively till the given number.

==========

Sample Input 1:

5

Sample Output 1:

=== Iteration 1 ===

1

=== Iteration 2 ===

X
XX

=== Iteration 3 ===

123
123
123

=== Iteration 4 ===

X
XX
XXX
XXXX

=== Iteration 5 ===

12345
12345
12345

12345

Explanation 01:

Since the input is 5, a total of 5 patterns have been printed.
In iteration-1, a square with height and width 1 has been printed. In iteration-2, a right-angle triangle with height 2, has been printed. In iteration-3, a square with height and width 3 has been printed. In iteration-4, a right-angle triangle with height 4, has been printed. In iteration-5, a square with height and width 5 has been printed.

Sample Input 2:

3

Sample Output 2:

=== Iteration 1 ===

1

=== Iteration 2 ===

X
XX

=== Iteration 3 ===

123
123
123

Explanation 02:

Since the input is 3, a total of 3 patterns have been printed.
In iteration-1, a square with height and width 1 has been printed. In iteration-2, a right-angle triangle with height 2, has been printed. In iteration-3, a square with height and width 3 has been printed.

Problem Question 2

Write a python function that takes a number(integer) as an argument and\
generates a pattern according to the outputs shown below.\
==========

Function call1:
function_name(4)

Sample Output 1:

###AAAA
##A** A
#A**A
AAAA

==========\

Function call2:

function_name(3)
Sample Output 2:
##AAA
#A*A
AAA

==========\

Function call2:

function_name(5)
Sample Output 2:
####AAAAA
###A***A
##A***A
#A***A
AAAAA

Problem Question 3

Assume you have been given a dictionary named cast where the keys are the names of different series and the values are the list of tuples, where each tuple represents a pair of characters and the actors who played the characters. You need to write a code that will take the name of a character as input and print his/her information according to the output samples.

cast = {'Friends': [('Joey', 'Matt'), ('Chandler', 'Matthew')],

'BBT': [('Penny', 'Kaley'), ('Sheldon', 'Jim')],

'Breaking Bad': [('Jesse', 'Aaron'), ('Walter', 'Bryan')]}

Input sample 1:

Joey

Output sample 1:

Joey was played by Matt in Friends

Input sample 2:

Jesse

Output sample 2:

Jesse was played by Aaron in Breaking Bad

Problem Question 4

Question-1: Assume, you have been given a dictionary where the keys present the name of the father and the value is a list of names of the sons of that person. For

example A has 3 sons namely X, Y, and Z. Again X has three sons namely E,

F, and G. So, A is the grandfather of E, F, and G.

family = {"A" : ["X", "Y", "Z"], "B": ["M", "N"], "W" : ["A", "B"], "X" :

["E", "F", "G"]}

You need to write a code which takes an input and prints the names of all

his grandsons in the format shown in output samples. If he does not have

any grandchildren just print “Get your sons married first! Wanna_be_grandpa!!”

You can assume the input will always be a key from the dictionary. But we

will check your code with a different dictionary. So do not write a code

for this particular dictionary only.

==========

Input sample 1:

A

Output sample 1:

E, F, and G

Explanation1:

A has three sons X, Y, and Z but only one of them namely X has sons. So the

sons of X will be the grandsons of A. So the output is E, F, and G.

==========

Input sample 2:

W

Output sample 2:

X, Y, Z, M, and N

Explanation2:

Since W has two sons A and B and each of them has sons in return. The sons

of A namely X, Y, and Z, and the sons of B namely M and N are the grandsons

of W.

==========

Input sample 3:

B

Output sample 3:

Get your sons married first! Wanna_be_grandpa!!

Explanation3:

B has sons M and N but none of them have sons. So no grandsons for B.

Problem Question 5

Write a Python program that will take N Student IDs from the user.

[First, take N, then take N number of student IDs as input from the user.]

Create a dictionary from the N IDs that will hold the IDs in separate keys based on

the admitting semester.

Explanation: 3rd digit of the ID denotes semester.

1 = Spring
3 = Summer
2 = Fall

For example, 18101202 is from the Spring semester because the 3rd digit is 1.

==========

Sample Input1:

18101202

18204354

20101457

19303372

20201999

STOP

Sample Output1:

{'Spring': ['18101202', '20101457'], 'Fall':

['18204354', '20201999'], 'Summer': ['19303372']}

==========

Sample Input2:

18201202

18104354

20101457

19203372

STOP

Sample Output2:

{'Fall': ['18201202', '19203372'], 'Spring': ['18104354', '20101457']}