INTERNSHIP TASKS

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Course : Python

Org : IGIAT – VSKP

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Day 12: EXERCISE – 12

Exercise Level 1

#Task 1:

#Write a function which generates a six digit/character

from random import random, randint;

import string as st;

def random\_user\_id():

    characters = st.ascii\_letters + st.digits*;*

    i = 0*;*

    random\_string\_user\_id = ""

    while (i < 6):

        random\_index = randint(0, len(characters)-1)*;*

        random\_string\_user\_id += characters[random\_index]*;*

        i += 1*;*

    return random\_string\_user\_id*;*

print("Task 1: Random 6 Digit/Character string --> ", random\_user\_id())*;*

#Task 2:

#Modify the previous task. Declare a function named user\_id\_gen\_by\_user. It doesn't take any parameters but it takes two inputs using input(). One of the inputs is the number of characters and the second input is the number of IDs which are supported to be generated.

def user\_id\_gen\_by\_user():

    length\_of\_each = int(input("Enter the length of each ID : "))*;*

    how\_many = int(input("Enter how many IDs do you need : "))*;*

    characters = st.ascii\_letters + st.digits*;*

    random\_string\_user\_ids = []*;*

    i = 0*;*

    id = ''

    while (i < how\_many):

        j = 0*;*

        while (j < length\_of\_each):

            random\_index = randint(0, len(characters)-1)*;*

            id += characters[random\_index]*;*

            j += 1*;*

        random\_string\_user\_ids.append(id)*;*

        id = ''

        i += 1*;*

    for i in random\_string\_user\_ids:

        print(i)*;*

print("Task 2: Random N ids with N length ---> As Follows")*;*

user\_id\_gen\_by\_user()*;*

#Task 3:

#Write a function named rgb\_color\_gen. It will generate rgb colors (3 values ranging from 0 to 255 each).

def rgb\_color\_gen():

    value\_1 = randint(0, 255)*;*

    value\_2 = randint(0, 255)*;*

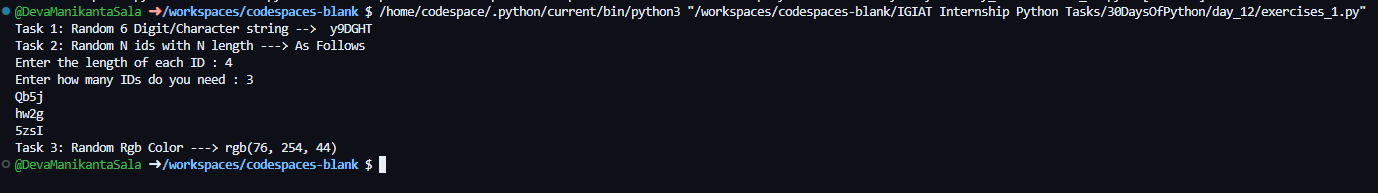
    value\_3 = randint(0, 255)*;*

    print(f"rgb({value\_1}, {value\_2}, {value\_3})")*;*

print("Task 3: Random Rgb Color ---> ", end = "")*;*

rgb\_color\_gen()*;*

**Outputs:**

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Exercise Level 2

#Task 1:

#Write a function list\_of\_hexa\_colors which returns any number of hexadecimal colors in an array (Six hexadecimal numbers written after #. Hexadecimal numerical system is made out of 16 symbols

#0-9 and first 6 letters of the alphabet -- a-f.)

from random import random, randint;

import string as st;

def list\_of\_hexa\_colors():

    n = int(input("Enter the number of colors do you want? : "))*;*

    characters = st.digits + st.ascii\_lowercase[0:6] + st.ascii\_uppercase[0:6]*;*

    i = 0*;*

    hexa\_colors\_list = []

    while(i < n):

        j = 0*;*

        color = "#"

        while (j < 6):

            random\_index = randint(0, len(characters)-1)*;*

            color += characters[random\_index]*;*

            j += 1*;*

        hexa\_colors\_list.append(color)*;*

        i += 1*;*

    print("Hexa Colors : ", hexa\_colors\_list)*;*

print("Task 1: Hexa Colors list.")*;*

list\_of\_hexa\_colors()*;*

#Task 2:

# Write a function list\_of\_rgb\_colors which returns any number of RGB colors in an array

def list\_of\_rgb\_colors():

    n = int(input("Enter the number of colors do you want? : "))*;*

    rgb\_colors\_list = []

    for i in range(n):

        value\_1 = randint(0, 255)*;*

        value\_2 = randint(0, 255)*;*

        value\_3 = randint(0, 255)*;*

        string = f'rgb({value\_1}, {value\_2}, {value\_3})'*;*

        rgb\_colors\_list.append(string)*;*

    print("RGB colors : ", rgb\_colors\_list)*;*

print("Task 2: RGB Colors List")*;*

list\_of\_rgb\_colors()*;*

#Task 3:

# Write a function generate\_colors which can generate any number of hexa or rgb colors.

def generate\_colors(color\_code, n):

    if(color\_code.lower() != 'hexa' and color\_code.lower() != 'rgb'):

        print(f"Invalid Color Code or {color\_code} is not available!")*;*

        return*;*

    elif(color\_code.lower() == 'hexa'):

        hexa\_colors\_list = []*;*

        print("Printing Hexa Colors --", n)*;*

        characters = st.digits + st.ascii\_lowercase[0:6] + st.ascii\_uppercase[0:6]*;*

        i = 1*;*

        while(i <= n):

            j = 0*;*

            color = '#'*;*

            while(j < 6):

                random\_index = randint(0, len(characters)-1)*;*

                color += characters[random\_index]*;*

                j += 1*;*

            hexa\_colors\_list.append(color)*;*

            i += 1*;*

        print(hexa\_colors\_list)*;*

        return*;*

    else:

        rgb\_color\_list = []*;*

        i = 1;

        print("Printing RGB Colors --", n)*;*

        while(i <= n):

            value\_1 = randint(0, 255)*;*

            value\_2 = randint(0, 255)*;*

            value\_3 = randint(0, 255)*;*

            string = f'rgb({value\_1}, {value\_2}, {value\_3})'*;*

            rgb\_color\_list.append(string)*;*

            i += 1*;*

        print(rgb\_color\_list)*;*

        return*;*

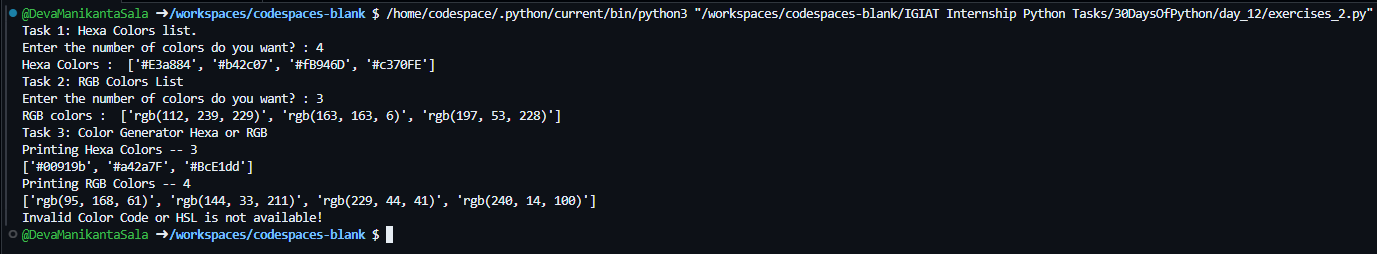
print("Task 3: Color Generator Hexa or RGB")*;*

generate\_colors('hexa', 3)*;*

generate\_colors('RGB', 4)*;*

generate\_colors('HSL', 3)*;*

**Output:**

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Exercise Level 3

#Task 1:

#Call your function shuffle\_list, it takes a list as a parameter and it returns a shuffled list.

import random as r;

def shuffle\_list(list\_of\_items):

    i = 0*;*

    random\_index = []*;*

    shuffled\_list = []*;*

    while (i < len(list\_of\_items)):

        random\_index\_var = r.randint(0, len(list\_of\_items)-1)*;*

        if random\_index\_var in random\_index:

            continue*;*

            i -= 1*;*

        else:

            shuffled\_list.append(list\_of\_items[random\_index\_var])*;*

        random\_index.append(random\_index\_var)

        i += 1*;*

    return (shuffled\_list)*;*

print("Task 1: The Shuffled List of ['Hi', 'This', 'is', 'Deva Manikanta'] -->",shuffle\_list(['Hi', 'This', 'is', 'Deva Manikanta']))

print("Task 1: The Shuffled List of [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] -->",shuffle\_list([1, 2, 3, 4, 5, 6, 7, 8, 9, 10]))*;*

print("Task 1: The Shuffled List of [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] -->",shuffle\_list([1, 2, 3, 4, 5, 6, 7, 8, 9, 10]))*;*

#Task 2:

#Write a function which returns a array of seven random numbers in a range of 0-9. All the numbers must be unique.

def array\_of\_seven\_random\_numbers():

    i = 0*;*

    seven\_random\_numbers = []*;*

    added = []*;*

    while (i < 7):

        random\_number = r.randint(0,9)*;*

        if random\_number in added:

            continue*;*

            i -= 1*;*

        else:

            seven\_random\_numbers.append(random\_number)*;*

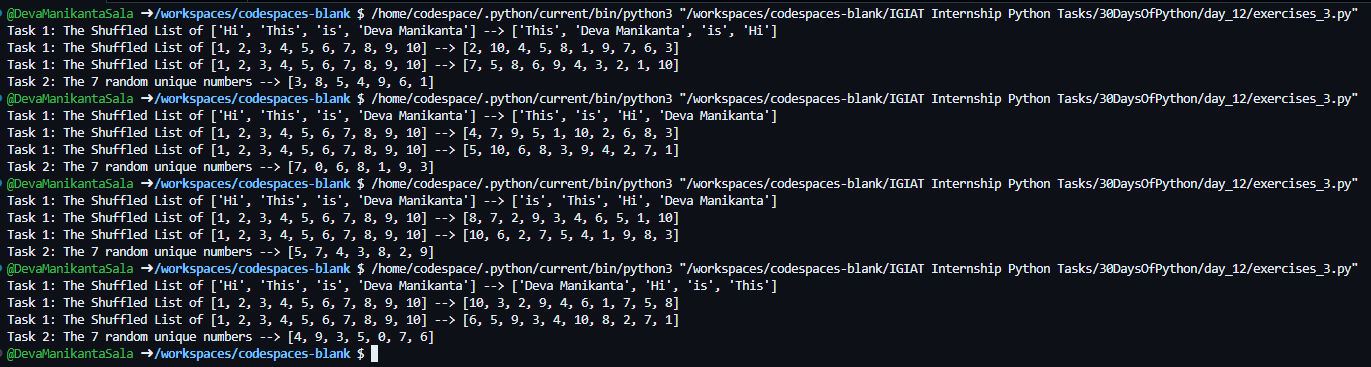
        added.append(random\_number)*;*

        i += 1*;*

    return seven\_random\_numbers*;*

print("Task 2: The 7 random unique numbers -->", array\_of\_seven\_random\_numbers())*;*

**Output:**

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