INTERNSHIP TASKS

Day 10:
EXERCISE – 10

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Course : Python

Org : IGIAT – VSKP

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Exercise Level 1

```
#Task 1
#Iterate 0 to 10 using for loop, do the same using while loop
#For Loop
print("Using For Loop : ", end = " ");
for i in range(0, 11):
    if(i == 10):
        print(i);
    else:
        print(i, end=",");
#While Loop
i = 0;
print("Using While Loop : ", end = " ");
while(i <= 10):
    if(i == 10):
        print(i);
    else:
        print(i, end=",");

    i += 1;

#Task 2:
#Iterate 10 to 0 using for loop and while loop
print("Using for loop : ", end="");
for i in range(10 , -1, -1):
    if(i == 0):
        print(i);
    else:
        print(i, end = ",");


i = 10;
print("Using while loop : ", end="");
while(i >= 0):
    if(i == 0):
        print(i);
    else:
        print(i, end = ",");
    i -=  1;

#Task 3: Write a loop that makes seven calls to print(), so we get traingle pattern:
i = 1
while(i <= 7):
    for j in range(1, i+1):
        print("#", end = "");
    print();
    i += 1;

#Task 4:
# Use nested loops to create the following
```

```
for i in range(1, 9):
    for j in range(1, 9):
        print("# ", end = "");
    print();

#Task 5:
#Print the following pattern
for b in range(0, 11):
    print(b,"x", b, "=", (b*b));

#Task 6:
#Iterate through the list ['Python', 'Numpy', 'Pandas', 'Django', 'Flask'] using for loop and
print out the items:
for i in ['Python', 'Numpy', 'Pandas', 'Django', 'Flask']:
    print(i);

#Task 7:
#Use for loop to iterate from 0 to 100 and print only even numbers
print("Even Numbers from 0 to 100:");
for i in range(0, 101):
    if(i % 2 == 0):
        if(i == 100):
            print(i);
        else:
            print(i, end=",");
    else:
        continue;
#Task 8:
#Use for loop to iterate from 0 to 100 and print only odd numbers
print("Odd Numbers from 0 to 100:");
for i in range(0, 101):
    if(i % 2 != 0):
        if(i == 99):
            print(i);
        else:
            print(i, end=",");
    else:
        continue;
```

Outputs:

```
/home/codespace/.python/current/bin/python3 "/workspaces/codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_10/exercises_1.py"
@DevaManikantaSala ➜/workspaces/codespaces-blank $ /home/codespace/.python/current/bin/python3 "/workspaces/codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_10/exercises_1.py"
Using For Loop :  0,1,2,3,4,5,6,7,8,9,10
Using While Loop :  0,1,2,3,4,5,6,7,8,9,10
Using for loop : 10,9,8,7,6,5,4,3,2,1,0
Using while loop : 10,9,8,7,6,5,4,3,2,1,0
#
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0 x 0 = 0
1 x 1 = 1
2 x 2 = 4
3 x 3 = 9
4 x 4 = 16
5 x 5 = 25
6 x 6 = 36
7 x 7 = 49
8 x 8 = 64
9 x 9 = 81
10 x 10 = 100
Python
Numpy
Pandas
Django
Flask
Even Numbers from 0 to 100:
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72,74,76,78,80,82,84,86,88,90,92,94,96,98,100
Odd Numbers from 0 to 100:
1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59,61,63,65,67,69,71,73,75,77,79,81,83,85,87,89,91,93,95,97,99
@DevaManikantaSala ➜/workspaces/codespaces-blank $
```

Exercise Level 2

```python
#Task 1
#Use for loop to iterate from 0 to 100 and print the sum of all numbers
sum = 0
for i in range(0, 101):
    sum += i;

print("The Sum of all numbers from 0 to 100: ", sum);

#Task 2
#Use for loop to iterate from 0 to 100 and print the sum of all evens and odds seperately
sum_of_even = 0
sum_of_odd = 0
for i in range(0, 101):
    if(i % 2 == 0):
        sum_of_even += i;
    else:
        sum_of_odd += i;

print("Sum of Even numbers from 0 to 100: ", sum_of_even, "\nSum of Odd numbers from 0 to 100: ", sum_of_odd);
```

Output:

```
@DevaManikantaSala →/workspaces/codespaces-blank $ /home/codespace/.python/current/bin/python3 "/
sOfPython/day_10/exercises_2.py"
The Sum of all numbers from 0 to 100:  5050
Sum of Even numbers from 0 to 100:  2550
Sum of Odd numbers from 0 to 100:  2500
@DevaManikantaSala →/workspaces/codespaces-blank $
```

Exercise Level 3

Step 1: Create a folder 'data' and download 'countries.py' click on this link to download the file and paste it in 'data' folder.
Try this link if it doesn't download:
https://drive.google.com/uc?export=download&id=19FKmSln0zclQ97yUkFponmuWvyO4OGe9

Step 2: Now, download this file and paste it in 'data' folder 'countries_data.py' click on this link to download the file.

Try this link if it doesn't download:
https://drive.google.com/uc?export=download&id=1aumrIQiumLBau9hTUPNEQBYqxZp-MwAo

```
#Task 1
#Go to the data folder and use the countries.py file. Loop through the countries and extract all the countries containing the word 'land'.
from data import countries as c;
countries_ends_with_land = []
for country in c.countries:
    if(country.endswith("land")):
        countries_ends_with_land.append(country);

print("Countries ends with land : ", countries_ends_with_land);

#Task 2
#This is a fruit list, ['banana', 'orange', 'mango', 'lemon'] reverse the order using loop
fruits = ['banana', 'orange', 'mango', 'lemon']
reversed_fruits = []
for i in range(-1, -(len(fruits)+1), -1):
    reversed_fruits.append(fruits[i]);

fruits = reversed_fruits;
print("Reversed : ", fruits);


#Task 3
#Go to data folder and use the countries_data.py file
from data import countries_data as cd;

#1. What are the total number of languages in the data
languages = 0;
for item in cd.countries_data:
    languages += len(item['languages'])
```

```
print("The Total number of languages : ", languages);

#2. Find the ten most spoken languages from the data
languages_spoken = []
for item in cd.countries_data:
    for language in item['languages']:
        languages_spoken.append(language);

unique_languages = set(languages_spoken);
counts_of_unique_languages = {}
for language in unique_languages:
    counts_of_unique_languages[language] = languages_spoken.count(language);
counts = list(counts_of_unique_languages.values());
counts.sort();
counts.reverse();
counts = counts[0:10];
i = 0;
ten_most_spoken_languages = []
while(i < len(counts)):
    for language, count in counts_of_unique_languages.items():
        if(count == counts[i]):
            ten_most_spoken_languages.append(language);
    i += 1;
print("Ten Most spoken languages : ", ten_most_spoken_languages);

#3. Find the ten most populated countries in the world
population_of_countries = []
for item in cd.countries_data:
    population_of_countries.append(item['population'])

population_of_countries.sort();
population_of_countries.reverse();
population_of_countries = population_of_countries[0:10];

i = 0;
ten_most_populated_countries = [];
while(i < len(population_of_countries)):
    for item in cd.countries_data:
        if(item['population'] == population_of_countries[i]):
            ten_most_populated_countries.append(item['name']);
    i += 1;

print("Ten Most Populated Countries: ", ten_most_populated_countries);
```

Output:

```
/home/codespace/.python/current/bin/python3 "/workspaces/codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_10/exercises_3.py"
@DevaManikantaSala ➜/workspaces/codespaces-blank $ /home/codespace/.python/current/bin/python3 "/workspaces/codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_10/exercises_3.py"
Countries ends with land :  ['Finland', 'Iceland', 'Ireland', 'New Zealand', 'Poland', 'Swaziland', 'Switzerland', 'Thailand']
Reversed :  ['lemon', 'mango', 'orange', 'banana']
The Total number of languages :  368
Ten Most spoken languages :  ['English', 'French', 'Arabic', 'Spanish', 'Russian', 'Portuguese', 'Russian', 'Portuguese', 'Dutch', 'German', 'Chinese', 'Swahili', 'Italian', 'Serbian']
Ten Most Populated Countries:  ['China', 'India', 'United States of America', 'Indonesia', 'Brazil', 'Pakistan', 'Nigeria', 'Bangladesh', 'Russian Federation', 'Japan']
@DevaManikantaSala ➜/workspaces/codespaces-blank $
```