Assignment - 3

3 Feb 2023

(1) Which keyword is used to create a function? create a function to return a list of odd numbers in the range of 1 to 25.

Ans → The def keyword

```
list 1 = [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25]

for num in list 1:
    if num % 2 != 0:
        print(num, end = " ")
```

APPOINTMENT NOTES

JUL

JUNE 26
TUESDAY
WK 26 • 177-188

APPOINTMENT/MEETING

Q.2 Why *args and **kwargs is used in some functions? Create a function each for *args & *kwargs to demonstrate their use.

→ *args & **kwargs a Python function flexible so it can accept a variable number of arguments and keywood arguments.

*args (Non-keyword Arguments)
**kwargs (Keyword Arguments)

① def myFun(*argv):
    for arg in argv:
        print(arg)

myFun('Hello', 'Welcome', 'to', 'GeeksforGeeks')

② def myfun(**kwargs):
    for key, value in kwargs.items():
        print("%s == %s" %(key, value))

myfun(first='Geeks', mid='for', last='Geeks')

27 JUNE WEDNESDAY
178-187 • WK 26

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APPOINTMENT/MEETING

Q.3 (i) iterator in python

An iterator is an object that contains a countable number of values

→ An iterator is an object that can be iterated upon, meaning that you can traverse through all the values.

→ An iterator is an object which implements the iterator protocol, which consist of the method __iter__() and __next__()

(II) Name the Method used to initialize the iterator object & the method used for iteration.

1. __iter__() ⇒ The iter() method is called for the initialization of an iterator. This returns an iterator object.

2. __next__() : The next method returns the next value for the iterable. When we use a for loop to traverse any iterable object internally it uses the iter() method to get an iterator object, which further uses the next() method to iterate over. this method raises a StopIteration to signal the end of the iteration.

APPOINTMENT NOTES

Q) print the first five elements of the given list [2, 4, 6, 8, 10, 12, 14, 16]

```
# print first 5 elements
i = 2
while i <= 10
    print(i)
    i += 2
```

Q. 4. What is a generator function in python.

A generator is a function that returns an iterator that produces a sequence of values when iterated over. generators are useful when we want to produce a large sequence of values, but we don't want to store all of them in memory at once.

Q. Why yield keyword is used? Give an example.

→ the yield keyword will convert an expression that is specified along with it to a generator and return it to the caller. if you want to get the values stored inside the generator object, you need to iterate over it. you can iterate over it using for loops or special function like next().

→

```
def plain_old_func():
    my_list = [1,2,3]
    for i in my_list:
        return i*2
```

29 JUNE FRIDAY

130-135 • 26

APPOINTMENT/MEETING

Q.5 create a generator function for prime numbers less than 1000. Use the next() method to print the first 20 prime numbers.

```
import math
def main():
    count = 3
    one = 1
while one == 1
for x in range(2, int(math.sqrt(count)+1)):
    if count % x == 0:
        continue
    if count % x != 0:
        print count

def isPrime(n):
    if (n==1 or n==0):
        return false

for i in range(2,1000):
# if (n%i == 0):
        return false

return True
```

APPOINTMENT NOTES

JUL
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1 2 3 4 5 6 7 8
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23 24 25 26 27 28 29 30 31

JUNE 30
SATURDAY

APPOINTMENT/MEETING 4 feb Assignment

Q1. Create a python program to sort the given list of tuples based on integer value using a lambda function

```
Subject_marks = [('English', 88), ('Science', 90),
('Maths', 97), ('Social Sciences', 82)]
print("original list of tuples:")
print(Subject_marks)
Subject_marks.sort(key = lambda x: x[1])
print("\n Sorting the list of Tuples:")
print(Subject_marks)
```

```
Cricket_Score = [('Sachin Tendulkar', 34357),
('Ricky Ponting', 27483), ('Jacques Kallis' 25534
, ('Virat Kohli', 24936)]
print("original list of tuples:")
print(Cricket_Score)
Cricket_score.sort(key = lambda x: x[1])
print("\n Sorting the list of Tuples:")
print(Cricket_Score)
```

Q.2 Write a Python Program to find the Squares of all the numbers in the given list of integers using lambda & map function.

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

```
nums = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
print("original list of Integers:")
print(nums)
```

APPOINTMENT NOTES

```
print ("In Square even number of the said list:")
Square_nums = list(map(lambda x: x ** 2, nums))
print(Square_nums)
```

Q.3 write a python program to convert the given list of integers into a tuple of strings. Use map & lambda functions.

Given string [1,2,3,4,5,6,7,8,9,10]

```
num_list = [1,2,3,4,5,6,7,8,9,10]
print ("original list:")
print(nums_list)
result_list = list(map(str, num_list))
print ("In list of strings:")
print(result_list)
```

Q.4 Write a python program using reduce function to compute the product of a list containing number 1 to 25.

→

```
numbers = [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,
           18,19,20,21,22,23,24,25]
product = 1
for num in numbers:
    product *= num
    product
my_product(1, 2)
reduce(my_prod, numbers)
```