

ASSIGNMENT-1

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CSE section I (G1)

1. What is the difference between a parameter and an argument?

The parameters are what are used inside the function and the arguments are the values passed when the function is called. Let's visualize with example:

```
def prakash(a, b):  
    pass  
sharda = 2  
university = 3  
prakash(sharda, university)
```

so in here a and b are parameter and sharda and university are arguments

2. All functions in python by default return...?

Python has a different way of representing syntax and default values for function arguments. Default values indicate that the function argument will take that value if no argument value is passed during the function call. The default value is assigned by using the assignment (=) operator of the form *keywordname*=value.

Let's understand this through a function *student*. The function *student* contains 3-arguments out of which 2 arguments are assigned with default values. So, the function *student* accepts one required argument (*firstname*), and rest two arguments are optional

```
def student(firstname, lastname='chand', standard='thakuri'):  
    print(firstname, lastname, 'studies in', standard, 'Standard')
```

3. What are keywords arguments and when should we use them?

When calling functions in python, we often have to choose between using keywords arguments or positional arguments. Keywords arguments can often be used to make function calls. A keyword argument is where we provide a name to the variable as we pass it into the function.

This is the example of passing arguments in 2 different ways:

```
def name(a,b,c):
    print('wellcome',a,b,c)
name('prakash','chand','thakuri') #one way to pass argument
name(a='prakash',b='chand',c='thakuri') #another way to pass argument
```

4. How can we make a parameter of a function optional?

To make parameter optional we can use *args parameter, which allow us to pass as many as we want. Let's look at example:

```
def test(a,*args):
    print(a,*args)
test('prakash','chand')

test('prakash') #print even without passing second argument
```

5. What happens when we prefix a parameter with an asterisk(*)?

When we prefix a parameter with an asterisk it will pass all the value if value isn't present on the argument. refer to question no 4.

6. What about two asterisk(**)?

Two asterisk(**) is used to address the elements in list.

7. What is scope?

Variables can only reach the area in which they are defined, which is called scope. By default, all variables declared in a function are local variables. We can further clear the concept of this with local and global variable which has its certain scope (local variable)

8. What is the difference between local and global variables?

Local variable is defined as type of variable declared within programming block or subroutines. It can only be used inside the subroutine or code block in which it is declared.

Global variable is defined outside the subroutine or function which means it holds its value throughout the lifetime of the program.

9. Why is using the global statement a bad practice?

The reason global variables are bad practice is that they enable functions to have hidden (non-obvious, surprising, hard to detect, hard to diagnose) side effects which leads to an increase in complexity of code

PROGRAMMING QUESTIONS

```
'''1. Write a function that returns the maximum of two numbers.
'''
def func(a,b):
    if a>b:
        print(a,'is maximum')
    else:
        print(b,'is maximum')
func(3,5) #cc@prakash_chand
```

output:
5 is maximum

```
'''
2. Write a function called fizz_buzz that takes a number.
If the number is divisible by 3, it should return "Fizz".
If it is divisible by 5, it should return "Buzz".
If it is divisible by both 3 and 5, it should return "FizzBuzz"
'''
def check(n):
    if n%3==0 and n%5==0:
        print("FizzBuzz")
    elif n%3==0:
        print("FIzz")
    elif n%5==0:
        print("Buzz")
num=int(input("Enter the number:")) #cc@prakash_chand
check(num)
```

Output:
Enter the number:15
FizzBuzz

```
'''
3. Write a function for checking the speed of drivers. This function should
have one parameter: speed.
1. If speed is less than 70, it should print "Ok".
2. Otherwise, for every 5km above the speed limit (70), it should give the
driver one demerit point and print
the total number of demerit points. For example, if the speed is 80, it
should print: "Points: 2".
3. If the driver gets more than 12 points, the function should print:
"License suspended"
'''
def speed(n):
    count=0
    if n <=70:
        print("OK")
    else:
        count= int((n-70)/5)
```

```
print("Points:",count)
if count>=12:
    print("License Suspended")
num=int(input("Enter speed: "))
speed(num) #cc@prakash_chand
```

Output:
Enter speed: 80
Points: 2

```
'''
4. Write a function called showNumbers that takes a parameter called limit.
It should print all
the numbers between 0 and limit with a label to identify the even and odd
numbers. For example, if the limit is 3, it should print:
1. 0 EVEN
2. 1 ODD
3. 2 EVEN
4. 3 ODD
'''
def shownumbers(limit):
    for i in range(limit+1):
        if i%2==0:
            print(i,"even")
        else:
            print(i,'odd')
num=int(input("set the limit: "))
shownumbers(num) #cc@prakash_chand
```

output:

set the limit: 5

0 even
1 odd
2 even
3 odd
4 even
5 odd

```
'''
5. Write a function that returns the sum of multiples of 3 and 5 between 0
and limit (parameter).
For example, if limit is 20, it should return the sum of 3, 5, 6, 9, 10, 12,
15, 18, 20.
```

```
'''
def limit(n):
    for i in range(n+1):
        sum=0
        if i%3==0 or i%5==0:
            print(i,end=',')
            sum=sum+i
        print("\nthe sum is",sum)
num=int(input("set the limit: "))
limit(20) #cc@prakash_chand
```

Output:

```
set the limit: 20
0,3,5,6,9,10,12,15,18,20,
the sum is 20
```

6. Write a function called `show_stars(rows)`. If rows is 5, it should print the following:

```
1. *
2. **
3. ***
4. ****
5. *****
```

```
'''
def show_stars(rows):
    for i in range(rows+1):
        for j in range(i):
            print('*',end='')
        print('\n')
num=int(input("enter the number of rows:"))
show_stars(num) #cc@prakash_chand
```

Output:

```
enter the number of rows:5
```

```
*
**
***
****
*****
```

7. Write a function that prints all the prime numbers between 0 and limit where limit is a parameter.

```
'''
def prime(n):
    for num in range(1, n + 1):
```

```
    if num > 1:
        for i in range(2, num):
            if (num % i) == 0:
                break
            else:
                print(num,end=' ')
num=int(input("set the limit: "))
prime(num) #cc@prakash_chand
```

Output:

```
set the limit: 20
2 3 5 7 11 13 17 19
```