CHAPTER-04

FUNCTION:

```
# def keyword is used to define function.

def add_two(a,b):
    return a+b

# print 2+3:
total=add_two(2,3)
print(total)

# take input and print a+b:
a=int(input("enter first number: "))
b=int(input("enter second number: "))
total=add_two(a,b)
print(total)

# It can also add characters:
first_name=(input("enter first namne: "))
second_name=(input("enter second name: "))
total=add_two(first_name,second_name)
print(total)
```

FUNCTION PRACTICE 01:

```
###
def last_char(name):
    return name[-1]

print(last_char("Abrar"))

###
def odd_even(num):
    if num%2==0:
        return "even"
    else:
        return "odd"
```

```
print(odd_even(9))

###
def odd_even(num):
    if num%2==0:
        return "even"

    sreturn "odd"
print(odd_even(9))

###
def is_even(num):
    if num%2==0:
        return True
    else:
        return False
print(is_even(9))

###
def is_even(num):
    return num%2==0

print(is_even(9))

###
def song():
    return "happy birthday song"

print(song())
```

EXERCISE 01:

```
# Find the greater number:
###
def compare(a,b):
    if a>b:
        return "a is greater than b"
    elif a<b:
        return "b is greater than a"
    else:
        return "a and b are equal"

num1=int(input("Enter a: "))
num2=int(input("Enter b: "))

print(compare(num1,num2))

###
def greater(a,b):
    if a>b:
        return a
    else:
        return b

num1=int(input("Enter first number: "))
num2=int(input("Enter second number: "))

bigger= greater(num1,num2)
print(f"{bigger} is greater")
```

GREATEST OF THREE:

```
def greatest(a,b,c):
    if a>b and a>c:
        return a
    elif b>a and b>c:
        return b
    else:
        return c

print(greatest(10,40,20))
```

PRINT VS RETURN:

```
# Using return:
def add_three(a,b,c):
    return a+b+c

print(add_three(2,3,4))

# Using print:
def sum_three(a,b,c):
    print(a+b+c)

add_three(2,3,4)
```

FUNCTION INSIDE FUNCTION:

```
# Find greatest from three numbers using function:

def greater(a,b):
    if a>b:
        return a
    return b
def greatest(a,b,c):
    bigger=greater(a,b)
    return greater(bigger,c)
print(greatest(100,20,30))
```

EXERCISE 02:

```
# Define is_palindrome function that take one word in string as input
# and return True if it is palindrome else return False
# palindrome---> word that reads same backwards as forwards

###
def is_palindrome(name):
    if name==name[::-1]:
        return True
    return False

name=input("Enter a name: ")
print(is_palindrome(name))

###
def is_palindrome(word):
    return word==word[::-1]

word=input("Enter a name: ")
print(is_palindrome(word))
```

FIBONACCI SERIES:

```
# Fibonacci series:
# 0 1 1 2 3 5 8 13 21 34

def fibonacci(n):
    a=0
    b=1
    if n==1:
        print(a)
    elif n==2:
        print(a,b)
    else:
        print(a,b,end=" ")
        for i in range(n-2):
            c=a+b
            a=b
```

```
            b=c
            print(b, end=" ")
fibonacci(10)
```

DEFAULT PARAMETERS:

```
def user_info(first_name='unknown', last_name='unknown', age=None):
    print(f"Your first name is {first_name}")
    print(f"Your Last name is {last_name}")
    print(f"Your age is {age}")

user_info('Abrar','Haider',23)
user_info()
```

VARIABLE SCOPE:

```
a=3 #global variable
def func():
    global a
    x=a #local variable
    return x
print(func()) #will print 3
print(x) #will give error #we cannot print local variable
```