FUNCTIONS

→A function is a group of related statements that performs a specific task.
→in python a function is defined using 'def' keyword.
there are two types of functions:
(a)built-in functions: These functions are part of the python programming. there are 68 built-in functions.
Example:
print(), dir(), abs(), length()……
(b)user-defined functions:
these functions are made by user as there requirement.

Advantages:

- code reusability
- reducing duplication of code
- decomposing complex problems into smaller pieces.
- abstraction

Syntax:

```
def <function_name>(Arguments):
    statements
    ……..
  return statement
```

- 'def' is a keyword used to define a function
- 'def' keyword is followed by a function
- function can contain parameters or without parameters.
- return statement is optional
- the return statement is used to return the value. A function can have only one return.
- by using return statement we can return multiple values.

function calling:
A function must be defined before the function call, otherwise the python interpreter gives an error.
after the function is created , we can call it from another function.
Example:

```
def hello():#function definition
  print("today we are discussing functions concept")
hello()#function calling
```

return statement:
→it terminates the function execution and transfers the result where the function is called.
→the return statement cannot be used outside of the function.

Syntax:
return[expression_list]
→it contain expression which gets evaluated and value is returned to the caller function.
→if return statement has no expression (or) does not exist itself in the function then it returns None object.
Example:
creating a function without return statement

```
def mul():#function definition
   a=34
   b=89
   c=a*b
print(mul()) #function calling
```

output:
None

Example: (with return statement)

```
def mul():#function definition
   a=34
   b=89
   c=a*b
   return c
print(mul()) #function calling
```

Example-2:

```
def arth():#function definition
   a=34
   b=89
   c=a*b
   d=a+b
   e=a-b
   f=a/b
   g=a%b
   return c,d,e,f,g
print(arth()) #function calling
```

Note:
in C, C++, JAVA, .net, return statement can return only one value at a time.

Example-3:

```
def arth():#function definition
   a=34
   b=89

   return a+b,a*b,a-b,a/b,a%b
```

print(arth()) #function calling