

PROGRAMMING IN Python

By – Rajesh Kumar Uke
KV 1STC Jabalpur

FUNCTIONS IN Python

Why Functions

Advantage of functions

Reusability of code

Manageability

Easy debugging

efficient

FUNCTIONS

Definition:

A function is a named, independent section of Python code(collection of python code) that performs a specific task and optionally returns a value to the calling program or/and receives values(s) from the calling program.

- **Basically there are two categories of function:**

- 1. Predefined functions:** available in Python like `input()`, `len()`, `random()`

- 2. User-defined functions:** functions that programmers create for specialized tasks such calculating area, circumference etc.

INPUT()

This function enable us to accept an input string from the user.

e.g. (1)

```
>>>name=input('Enter your name')
```

e.g.(2)

```
>>>price=int(input('Enter price:'))
```

randrange()

This function/method generates a random integer number between its lower limit and upper limit.

e.g. (1)

```
>>>import random
```

```
>>>random.randrange(1,25)
```

```
>>>random.randrange(20)
```

LET EXERCISE OF BRAIN

What will be the output of following.

```
import random
sub=['CS','Physics','Chemistry','Math']
rn=random.randrange(3)
print(sub[rn])
```


randint()

This function/method generates a random integer number from its lower limit to upper limit. (lower n upper limit is included).

e.g. (1)

```
>>>import random
```

```
>>>r=random.randint(1,3)
```

```
>>>print(r)
```

random()

This function/method generates a Random number from its 0 to 1.(float values) (it takes no parameter).

e.g. (1)

```
>>>import random
```

```
>>>r=random.random()
```

```
>>>print(r)
```

Basic Terminology of function

Name of function: A function can have any legal identifier name like **sum1,calc** etc

Basic Terminology of function

Arguments: The argument of a function represent the value received by the function.
the input given to a function

Basic Terminology of function

Return Value: The Function may or may not
return a value.

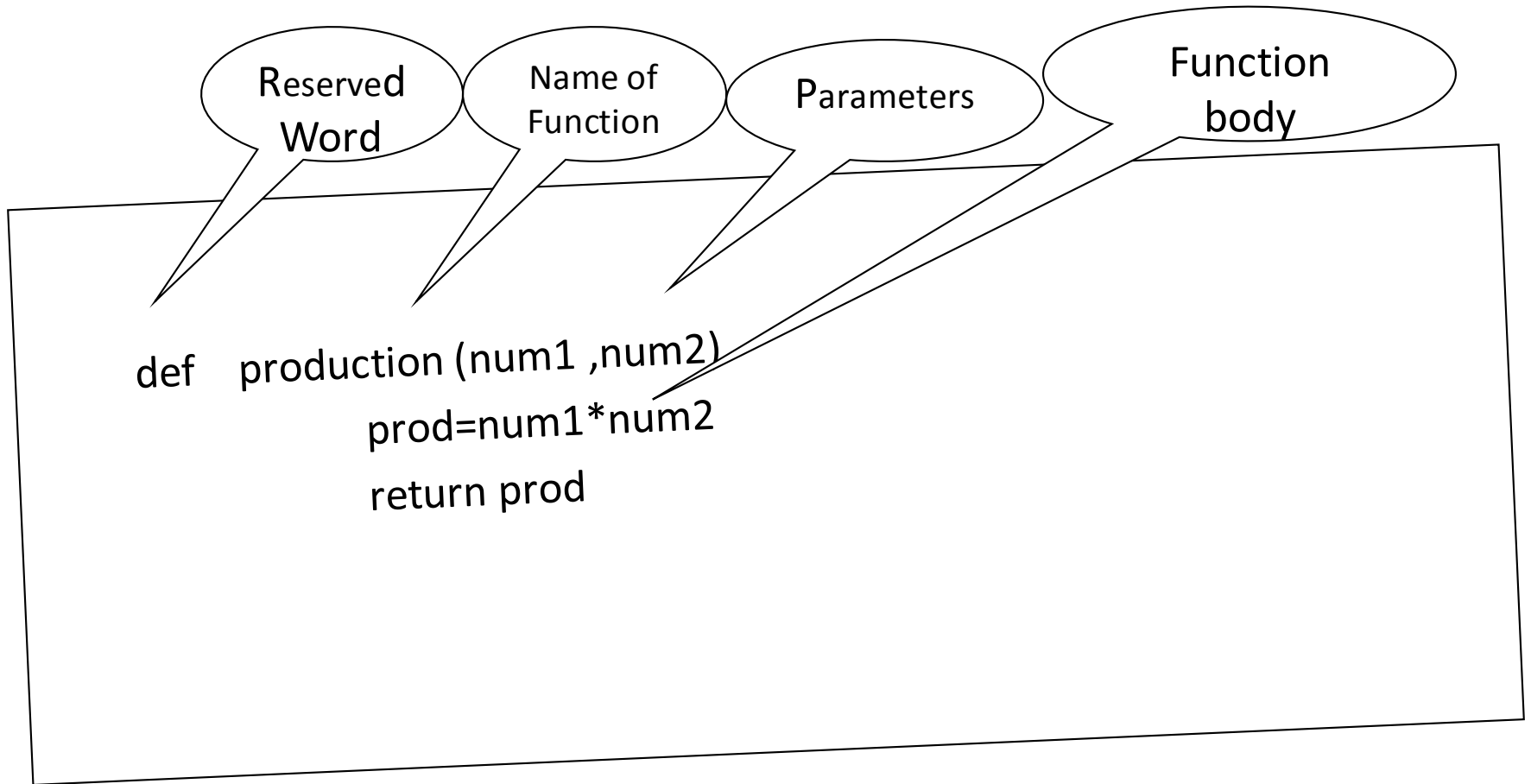
the input given to a function

Syntax of a function

```
def <name of function>(parameters ):  
    <statements of the function>  
    return value ← optional
```

Parameters are also optional

Example of User-defined Python Function



```
def xiicomputer()  
    print("We are learning Python")
```



```
def addition(num1,num2)
    sum=num1+num2
    print("The sum of two no is",sum)
```

Call a function(involve a function)

Simply by writing the name of function

e.g.

(1)p=prod(n1,n2)

(2)xiicomputer()

(3)addition(n1,n2)

(4)s=sum()

Demonstration of a program using function

```
def arearect(length,breadth):  
    area=length*breadth  
    return area
```

```
ar=arearect(30,20)  
print("the area of rectangle is ",ar)
```

Demonstration of a program using function

```
def product(num1,num2):
```

```
    prod=num1*num2
```

```
    return prod
```

```
num1=int(input("Enter the first no"))
```

```
num2= int(input("Enter the Second no"))
```

```
p=product(num1,num2)
```

```
print("the product of two no is ",p)
```

Demonstration of a program using function

```
def interest():
```

```
    p=int(input("Enter the Principle"))
```

```
    r=int(input("Enter the Rate of Interest"))
```

```
    t=int(input("Enter the Time Period"))
```

```
    si=p*r*t/100
```

```
    print(si)
```

```
print("the simple interest is")
```

```
interest()
```

Defining(Writing) a function;

Example 1:

Write a Program to add two number,using function.

The function will not take any parameter and

Will not return anything.

```
def sum1():  
    num1=int(input('Enter the first number'))  
    num2=int(input('Enter second number'))  
    sum=num1+num2  
    print('The sum of the numbers is',sum)  
print('This is Demo Program')  
sum1()
```

Example 1:

Write a Program to add two number,using function.

The function will take parameter and

Will not return anything.

```
def sum2(num1,num2):  
    sum=num1+num2  
    print('The sum of the numbers is',sum)  
print('This is Demo Program')  
num1=int(input('Enter the first number'))  
num2=int(input('Enter second number'))  
sum2(num1,num2)
```


Example 1:

Write a Program to add two number,using function.

The function will take parameter and

Will return sum.

```
def sum3(num1,num2):  
    sum=num1+num2  
    return (sum)  
print('This is Demo Program')  
num1=int(input('Enter the first number'))  
num2=int(input('Enter second number'))  
s=sum3(num1,num2)  
print('The sum is',s)
```

- **Thank you**