PYTHON FOR COMPUTATIONAL PROBLEM SOLVING

Functions: Positional and Keyword Arguments

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Function Call: Keyword and Positional Arguments

When we call a function in Python, we can pass in two different types of arguments:

1. **Keyword arguments (named arguments) –** Arguments passed to a function or method which is preceded by a keyword (parameter_name) and an equals sign. Argument name must be same as the parameter name in the function definition.

2. **Positional arguments –** Arguments that need to be included in the proper position or order.

Note: If there are both keyword and positional arguments, **keyword arguments must follow positional arguments.**

Function Call: Keyword and Positional Arguments

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Differences

Keyword arguments	Positional arguments
Parameter names are used to pass the argument during the call	Arguments are passed in the order of parameters. The order defined in the order function declaration.
Order of parameter Names can be changed to pass the argument(or values).	Order of values cannot be changed to avoid the unexpected output.
Syntax : – FunctionName(paramName=value,…)	Syntax : – FunctionName(value1,value2,value3…)

Function Call: Keyword and Positional Arguments

Keyword arguments (named arguments)

Example 1: -

```
def nameAge(name, age):
    print("Hi, I am",name)
    print("My age is ",age)
nameAge(name="Rajeev", age=26)
nameAge(age=26, name="Rajeev")
```

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Positional arguments

Example 2: -

```
def minus(a,b):
    return a-b

X=20;Y=10
print("Difference between two numbers is=",minus(X,Y))
```

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Combination of both Positional and keyword arguments

Rule: All keyword arguments must follow positional arguments

Example 3:-

```
def f1(x, y, z, a, b):
    print(a, b, x, y, z)
f1(3,5,z = {4,5},b = [12,7,8,4], a = 99.7)     # 99.7 [12, 7, 8, 4] 3 5 {4, 5}
f1(3,5,x = {4,5},b = [12,7,8,4], a = 99.7) #TypeError: f1() got multiple values for argument 'x'
f1(x = 9, y = 99,2,3,b = 22) #SyntaxError: positional argument follows keyword argument
```

Function Call: Default Parameters

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Default parameters are always a part of the symbol table which is added during the leader processing phase. If the user did not send any argument, then this default parameter is used in the processing.

Example 4:-

```
def f1(a,b=5):
    print(a,b)
f1(4)
f1(4,13)
```

```
C:\Users\Dell>python notes_functions.py
4 5
4 13

C:\Users\Dell>
```

Example 5:-

```
x=12
def f1(a,b=x):
    print(a,b)
f1(4)
f1(4,13)
```

```
C:\Users\Dell>python notes_functions.py
4 12
4 13

C:\Users\Dell>
```

THANK YOU

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