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## \*args and \*\*kwargs in Python

### \*args

The special syntax `*args` in function definitions in python is used to pass a variable number of arguments to a function. It is used to pass a non-keyworded, variable-length argument list.

- The syntax is to use the symbol `*` to take in a variable number of arguments; by convention, it is often used with the word args.
- What `*args` allows you to do is take in more arguments than the number of formal arguments that you previously defined. With `*args`, any number of extra arguments can be tacked on to your current formal parameters (including zero extra arguments).
- For example : we want to make a multiply function that takes any number of arguments and able to multiply them all together. It can be done using `*args`.
- Using the `*`, the variable that we associate with the `*` becomes an iterable meaning you can do things like iterate over it, run some higher order functions such as map and filter, etc.
- **Example for usage of \*arg:**

```
# Python program to illustrate
# *args for variable number of arguments
def myFun(*argv):
    for arg in argv:
        print (arg)

myFun('Hello', 'Welcome', 'to', 'GeeksforGeeks')
```

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### Output:

```
Hello
Welcome
to
GeeksforGeeks
```

```
# Python program to illustrate
# *args with first extra argument
def myFun(arg1, *argv):
```

```

print ("First argument :", arg1)
for arg in argv:
    print("Next argument through *argv :", arg)

myFun('Hello', 'Welcome', 'to', 'GeeksforGeeks')

```

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## Output:

```

First argument : Hello
Next argument through *argv : Welcome
Next argument through *argv : to
Next argument through *argv : GeeksforGeeks

```

## \*\*kwargs



The special syntax `**kwargs` in function definitions in python is used to pass a keyworded, variable-length argument list. We use the name `kwargs` with the double star. The reason is because the double star allows us to pass through keyword arguments (and any number of them).

- A keyword argument is where you provide a name to the variable as you pass it into the function.
- One can think of the `kwargs` as being a dictionary that maps each keyword to the value that we pass alongside it. That is why when we iterate over the `kwargs` there doesn't seem to be any order in which they were printed out.
- **Example for usage of `**kwargs`:**

```

# Python program to illustrate
# *kargs for variable number of keyword arguments

def myFun(**kwargs):
    for key, value in kwargs.items():
        print ("%s == %s" %(key, value))

# Driver code
myFun(first ='Geeks', mid ='for', last='Geeks')

```

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## Output:

```

last == Geeks
mid == for
first == Geeks

```

```

# Python program to illustrate  **kargs for
# variable number of keyword arguments with
# one extra argument.

```



```
def myFun(arg1, **kwargs):
    for key, value in kwargs.items():
        print ("%s == %s" %(key, value))

# Driver code
myFun("Hi", first ='Geeks', mid ='for', last='Geeks')
```

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## Output:

```
last == Geeks
mid == for
first == Geeks
```

## Using \*args and \*\*kwargs to call a function

### Examples:

```
def myFun(arg1, arg2, arg3):
    print("arg1:", arg1)
    print("arg2:", arg2)
    print("arg3:", arg3)

# Now we can use *args or **kwargs to
# pass arguments to this function :
args = ("Geeks", "for", "Geeks")
myFun(*args)

kwargs = {"arg1" : "Geeks", "arg2" : "for", "arg3" : "Geeks"}
myFun(**kwargs)
```

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## Output:

```
arg1: Geeks
arg2: for
arg3: Geeks
arg1: Geeks
arg2: for
arg3: Geeks
```

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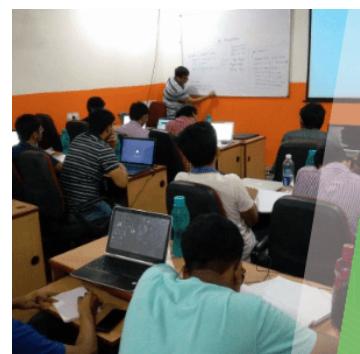
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