Python Bootcamp & Masterclass

range

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In Python, **range(start,stop,step)** is a constructor method of the range class that creates an iterable of subsequent integers within a given range of values. It represents an immutable sequence of integers that start at the optional **start** and up to (not including) the **stop** with a step size of optional **step**. If the step is omitted, it defaults to **1**. If the start argument is omitted, it defaults to `0`. If step is zero, **ValueError** is raised. The required argument (**stop**) and optional arguments (**start** & **step**) should be integers or equivalent (range( ) returns a new range object)

range(start, stop, step)

default 0 **required** 1

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```
range(10)                   # range object
print(*range(10))           # * is to force the range to unpack, so the entire sequence can be seen
print(*range(2, 10))        # range with start 2 & stop 10
print(*range(2, 10, 2))     # range with start 2, stop 10 & step 2
print(*range(10, 0, -1))  # range with start 10, stop 0 & step -1
```

```
0 1 2 3 4 5 6 7 8 9
2 3 4 5 6 7 8 9
2 4 6 8
10 9 8 7 6 5 4 3 2 1
```

```
range(10)                # range object
list(range(10))          # list() is to force the items range would generate to show as a list
list(range(2, 10))       # range with start 2 & stop 10
list(range(2, 10, 2))    # range with start 2, stop 10 & step 2
list(range(10, 0, -1)) # range with start 10, stop 0 & step -1
```

```
range(0, 10)

[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]

[2, 3, 4, 5, 6, 7, 8, 9]

[2, 4, 6, 8]

[10, 9, 8, 7, 6, 5, 4, 3, 2, 1]
```

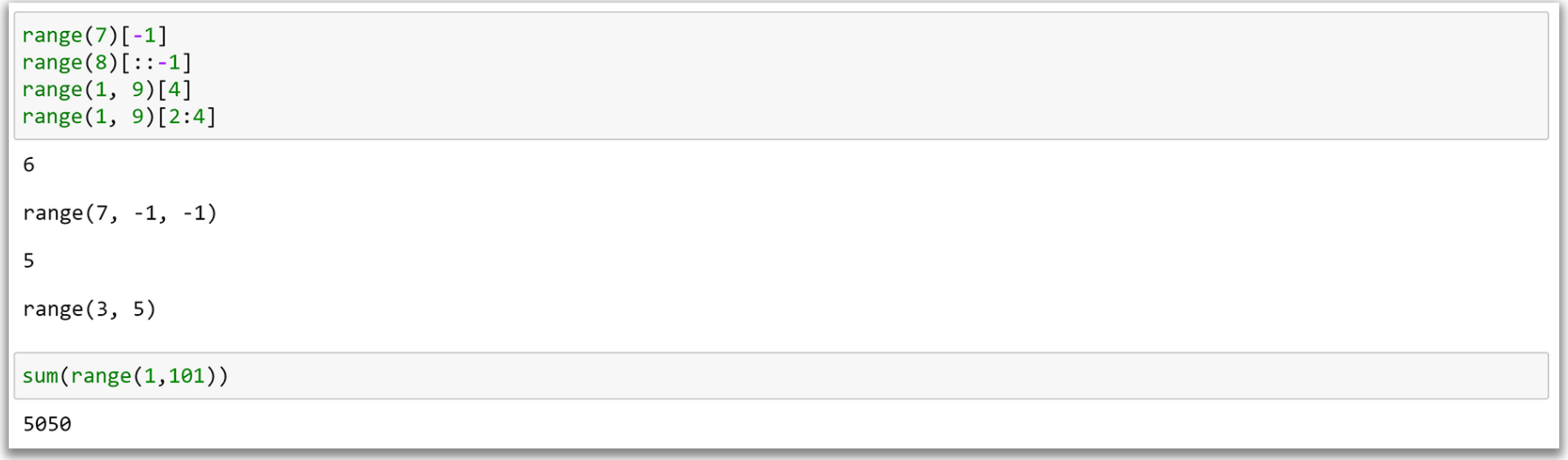
```
list(range(0))
list(range(0, 1))
#list(range(0, 1, 0))       # step cannot be zero or False
#list(range(2, 0.5))        # start, stop & step should be integers or equivalent
list(range(-2, True))       # True equivalent to 1
```

```
[]

[0]

[-2, -1, 0]
```

```
range(0.5)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_14056/153232996.py in <module>
----> 1 range(0.5)

TypeError: 'float' object cannot be interpreted as an integer
```

Since range() is a sequence, the elements of range() can be accessed by index. Slicing a range() just returns another range() as per the slicing.



```
range(7)[-1]
range(8)[::-1]
range(1, 9)[4]
range(1, 9)[2:4]
```

```
6

range(7, -1, -1)

5

range(3, 5)
```

```
sum(range(1,101))
```

```
5050
```

Online Resources

For best python resources, please visit:

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