

# exercise\_02\_for\_loops

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## 1 Exercise 02 - practicing for loops

Have a go at the problems below.

### 1.0.1 From 1 to N

Python has a built-in function called `range()` that creates a sequence of numbers. `range` can accept 1, 2, or 3 parameters.

- If one parameter is given, `range` creates an array of that length, starting at zero and incrementing by 1. For example, `range(3)` produces the numbers 0, 1, 2.
- If two parameters are given, `range` starts at the first and ends just before the second, incrementing by one. For example, `range(2, 5)` produces 2, 3, 4.
- If `range` is given 3 parameters, it starts at the first one, ends just before the second one, and increments by the third one. For example `range(3, 10, 2)` produces 3, 5, 7, 9.

Using `range`, write a loop that uses `range` to print 0 , 1, 2. fill in the blanks in the code cell to do this

```
for ___ in ____:
    print(_____)
```

```
[1]: # answer to breakout question 1
```

```
for banana in range(3):
    print(banana)
```

```
0
1
2
```

### 1.1 Computing Powers With Loops

Exponentiation is built into Python using `**` for the exponent

```
[2]: print(5 ** 3)
```

```
125
```

Write a loop that calculates the same result as `5 ** 3` using multiplication (and without exponentiation). *hint* use a loop and the `range()` function:

```
exp = 1

for __ in ____:
    exp = exp __ __

print(exp)
```

[3]: *# answer to breakout question 2*

```
exp = 1

for n in range(3):
    exp = exp*5

print(exp)
```

125

## 1.2 Reverse a String

knowing that strings can be concatenated using the +, write a loop that takes a string, and produces a new string with the characters in reverse order, so 'Newton' becomes 'notweN'

```
newstr = ''
oldstr = 'Newton'

for ___ in ____:
    newstr = ___ + newstr

print(newstr)
```

[4]: *# answer to breakout question 3*

```
newstr = ''
oldstr = 'Newton'

for c in oldstr:
    newstr = c + newstr

print(newstr)
```

notweN