

Combining Lists: The Zip Function

Learn about a popular Python built-in function called `zip()`.

In Python, we have an assortment of built-in functions that allow us to build our programs faster and cleaner. One of those functions is `zip()`.

The `zip()` function allows us to quickly combine associated data-sets without needing to rely on multi-dimensional lists. While `zip()` can work with many different scenarios, we are going to explore only a single one in this article.

Let's use a list of student names and associated heights as our example data set:

- Jenny is 61 inches tall
- Alexis is 70 inches tall
- Sam is 67 inches tall
- Grace is 64 inches tall

Suppose that we already had a list of names and a list of heights:

```
names = ["Jenny", "Alexus", "Sam", "Grace"]  
heights = [61, 70, 67, 64]
```

If we wanted to create a nested list that paired each name with a height, we could use the built-in function `zip()`.

The `zip()` function takes two (or more) lists as inputs and returns an *object* that contains a list of pairs. Each pair contains one element from each of the inputs. This is how we would do it for our `names` and `heights` lists:

```
names_and_heights = zip(names, heights)
```

If we were to then examine this new variable `names_and_heights`, we would find it looks a bit strange:

```
print(names_and_heights)
```

Would output:

```
<zip object at 0x7f1631e86b48>
```

This *zip object* contains the location of this variable in our computer's memory. Don't worry though, it is fairly simple to convert this object into a useable list by using the built-in function `list()`:

```
converted_list = list(names_and_heights)  
print(converted_list)
```

Outputs:

```
[('Jenny', 61), ('Alexus', 70), ('Sam', 67), ('Grace', 64)]
```

Notice two things:

1. Our data set has been converted from a zip memory object to an actual list (denoted by `[]`)
2. Our inner lists don't use square brackets `[]` around the values. This is because they have been converted into [tuples](#) (an immutable type of list).

Let's practice using `zip()`!

Coding question

Use `zip()` to create a new variable called `names_and_dogs_names` that combines `owners` and `dogs_names` lists into a zip object.

Then, create a new variable named `list_of_names_and_dogs_names` by calling the `list()` function on `names_and_dogs_names`.

Print `list_of_names_and_dogs_names`.

```
1 owners = ["Jenny", "Alexus", "Sam",  
2         "Grace"]  
3  
4 dogs_names = ["Elphonse", "Dr. Doggy  
5             DDS", "Carter", "Ralph"]  
6  
7  
8 names_and_dogs_names = zip(owners,  
9                             dogs_names)  
10  
11  
12 list_of_names_and_dogs_names = list  
13     (names_and_dogs_names)  
14  
15  
16 print(list_of_names_and_dogs_names)
```

```
[('Jenny', 'Elphonse'), ('Alexus',  
'Dr. Doggy DDS'), ('Sam',  
'Carter'), ('Grace', 'Ralph')]
```

Run



Check answer



You got it!