LOOP BASICS

A **loop** is a block of code that will repeat until a given condition is met

There are **two types** of loops:

FOR LOOPS

- Run a specified number of times
- *"**For** this many times"*
- This often corresponds with the length of a list, tuple, or other iterable data type
- Should be used when you know how many times the code should run

WHILE LOOPS

- Run until a logical condition is met
- *"**While** this is TRUE"*
- You usually don't know how many times this loop will run, which can lead to infinite loop scenarios (*more on that later!*)
- Should be used when you don't know how many times the code should run

LOOP BASICS

A **loop** is a block of code that will repeat until a given condition is met

EXAMPLE *Converting elements in a price list from USD to Euros*

```
exchange_rate = 0.88
usd_list = [5.99, 9.99, 19.99, 24.99, 99.99]

euro_list = [round(usd_list[0] * exchange_rate, 2),
             round(usd_list[1] * exchange_rate, 2),
             round(usd_list[2] * exchange_rate, 2),
             round(usd_list[3] * exchange_rate, 2),
             round(usd_list[4] * exchange_rate, 2)]
euro_list
```

```
[5.27, 8.79, 17.59, 21.99, 87.99]
```

In this example we're taking each element in our **usd_list** and multiplying it by the exchange rate to convert it to euros

- Notice that we had to write a line of code for *each element in the list*
- Imagine if we had hundreds or thousands of prices!

LOOP BASICS

A **loop** is a block of code that will repeat until a given condition is met

EXAMPLE *Converting elements in a price list from USD to Euros*

```
exchange_rate = 0.88
usd_list = [5.99, 9.99, 19.99, 24.99, 99.99]
euro_list = []

for price in usd_list:
    euro_list.append(round(price * exchange_rate, 2))

print(euro_list)
```

```
[5.27, 8.79, 17.59, 21.99, 87.99]
```

Now we're using a **For Loop** to cycle through each element in the **usd_list** and convert it to Euros

- We only used *two lines of code* to process the entire list!

Don't worry if the code looks confusing now (we'll cover loop syntax shortly), the key takeaway is that we wrote the conversion **one time** and it was applied until we looped through **all the elements** in the list