List

This is a collection of items in one variable, and each item has an index starting at 0

In [ ]:
```python
data = [4,6,2,7,8,10,4,5]   #numerical data
data2 = ["4","6","2"]       #string data

print(data)     #print out a list
print(data2)
```

```
[4, 6, 2, 7, 8, 10, 4, 5]
['4', '6', '2']
```

You can also have a list of words, eg shopping list

In [ ]:
```python
shopping = ["apples", "bread", "milk", "beans"]
```

In [ ]:
```python
#a list can also have mixed data
stuff = [45, "hello", True, "hi", 4.3]
print(stuff)
```

Using the built in len function to find the length of the list.

In [ ]:
```python
print(len(shopping)) #how many elements are in the shopping list
```

```
4
```

In [ ]:
```python
print(shopping[0])   #this will be the first element
print(shopping[1])   #this will be the second element
```

```
apples
bread
```

In [ ]:
```python
#if you try to print a number index that is not in your list
print(shopping[50])   #this would crash with an index error
```

In [ ]:
```python
print(shopping[len(shopping)-1]) #automatically print last element
```

```
beans
```

The code below will add up the numbers in a list

In [ ]:
```python
data = [4,6,2,7,8,10,4,5]       #numerical data
total = 0                       #a variable to keep track of the total
for n in range(0,len(data)):
    total += data[n]            #add each value onto the saved total
print(total)
```

```
46
```

You will do more on for loops in the next lesson.