

What is an Array?

Making a List, and Checking it Twice

Let's imagine we were working in a school, and we have to keep a record of the ages of all the children in each class. We could do this by creating a variable for each student, as follows:

```
StudentAge1 = 9
StudentAge2 = 10
StudentAge3 = 9
StudentAge4 = 8
StudentAge5 = 10
StudentAge6 = 10
StudentAge7 = 9
StudentAge8 = 11
```

This is a bit cumbersome, and we have a simpler way of creating and managing a collection of variables, called an **array**. We can think of it as a list of values which has a single name. So, we can declare an array as follows:

```
StudentsAges = [9, 10, 9, 8, 10, 10, 9, 11]
```

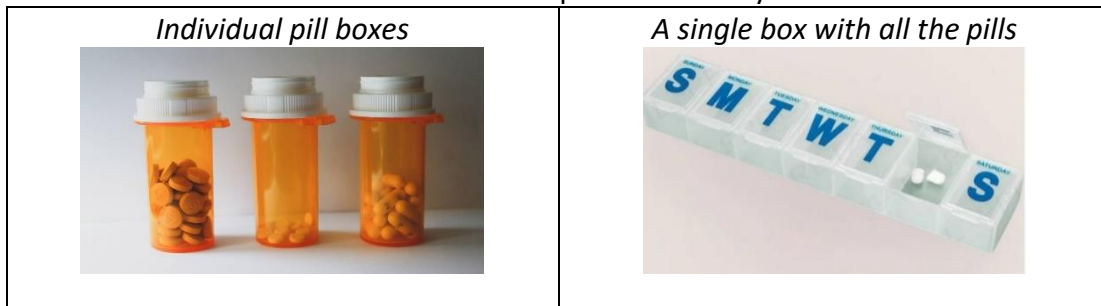
Meaning that we've created an array with the name `StudentsAges`, and we've initialised the array with the values of the students' ages. We can give the array any name we want (excluding the Python keywords) and any of the usual types, including integers, real numbers, strings, characters, and Booleans. We can picture the array as follows:

StudentsAges

9	10	9	8	10	10	9	11
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The Pill Box Analogy

I like to think of an array this way, we can either have a collection of several individual pill boxes, where it's easy to misplace one of them or to overlook one of them; or we can have a single box with all the pills in it, and we can see what we have taken and when we have to take our pills more easily:



The key point being, let's collect all the related variables into a single container.