

Arrays – Part B

What if I wanted to assign many values and keep them together, similar to a table? For example, I would like to record the average weather temperature for each day in March. How could I do this? With a one dimensional array of course!

The only tricky bit is to remember that the first record in the list is always 0, so the first day of March it would be `March[0]`.

Unlike other programming languages, in Python it is really simple to set up. I could simply write this... *[see screen]*

And this would record the temperature for the each day this way.

Now a question for you to think about – take a moment to look at the table on the screen and to think about why there are only 30 entries in this table when March has 31 days.

Well, hopefully you correctly worked out that there actually are 31 entries in the table and that the first day is `March[0]` and the 31st day of March is `March[30]`.

Arrays are often used with iterative loops such as ‘While’ or ‘For’ loops. I could have written a program such as this one that would have asked for the user to input the temperature readings and then saved them into a list. As we have already setup an array for March, I will now set one up for April using a different method.

As you can see, this is an easier way to enter values that can also change and vary. This can give you a reference to the day you are adding an entry for.

One thing to note here, if I wanted to see the results for April for the first five days I would write in Python this... *[see screen]*

Notice here that Python has shown me everything from record `April[0]` to `April[4]`. So by writing `April[0:5]` it shows me up to but not including the value in `April[5]`.

Another example, here I have asked for all values including `April[5]` to the end, by leaving the second value blank Python understands that to mean show all values to the end of the list.

The same way I could have left the first value blank and this would have outputted the same value.

Summary

So, to summarise, in this video we have learnt about one dimensional arrays.

When we say one dimensional, we mean it has one value assigned to each entry.

So in the example we looked at for the arrays ‘Days’, `Days[2]` was ‘Wed’. This was because the first record always starts with a 0.

I hope you now can see the difference between setting up multiple variable values and the advantages of setting up an array list to store multiple entries. With a list I have all the values together, and I can call upon a selected day as I require using this command.