- Tracking weekly expenditures (floats)

Provide a sample code segment that illustrates how to store data in an array for one of your outlined scenarios.

Hello,

Here are three examples of arrays I've identified:

1) Tracking weekly expenditures
2) Monitoring daily hotel room capacity
3) Documenting the number of inches of rain each month

Sample Weekly Expenditure Tracker:

Thanks,
Lauren

References

The Python Language Reference. (n.d.). *array—Efficient arrays of numeric values*. Retrieved from https://docs.python.org/3/library/array.html?highlight=array#module-array

When to use arrays?

Lists are much more flexible than arrays. They can store elements of different data types including strings. And, if you need to do mathematical computation on arrays and matrices, you are much better off using something like NumPy.

So, what are the uses of arrays created from the Python array module?

The `array.array` type is just a thin wrapper on C arrays which provides space-efficient storage of basic C-style data types. If you need to allocate an array that you know will not change, then arrays can be faster and use less memory than lists.

https://www.programiz.com/python-programming/array

Q: Do you think all the items within the array have to be of the same type?

Since I created the array using the Python array module, all elements are required to be of the same type. If I wanted an array with elements of an unrestricted by type, I could create a NumPy array.

References:

https://docs.python.org/3/library/array.html#array.array
https://numpy.org/doc/stable/reference/generated/numpy.array.html?highlight=array#numpy.array

Great insight Lauren, screenshot of your code is easy to follow and read.

I'm curious in regards to your second example of daily hotel room capacity. In what regards did you mean this? I took it as looking into a hotel we see how many rooms are booked, or rooms available. If this is the case, this would be a single number. From our readings we see that an array is a collection of items (TIWARI, 2018). Perhaps this is typically it is a collection of items. In this example, would our array perpetually only have one item?

Rizart,

I imagine an array wherein each index represents a hotel room, e.g. Room 1, and each value represents a vacant (0) or booked (1) room. In this case the collection of items would be solely the rooms with binary values.

availability_by_room = array.array('i', [0, 1, 1, 1])

Lauren

Your explanation is very clear and you are right. Accessing elements randomly from arrays are much easier than Linkedlists by giving an element's indexand elements in the LinkedList are connected to each other by pointer as you said which are sequential. I like you example and not seen the reference for it and this link has very helpful information

Griffen,

I liked your example. If you wanted you could also build a 2d-array incrementally with NumPy. NumPy arrays do not grow dynamically; changing the size of an array will produce a new array and delete the original. Still, if you want to build a board without initializing every value at the outset, NumPy could work here.

Lauren

References

https://jakevdp.github.io/PythonDataScienceHandbook/02.02-the-basics-of-numpy-arrays.html#Concatenation-of-arrays

Great example, only the difference between append and insert for storing data into array using append adds an new element to the end, where as insert it modifies the element if it is already there or add element at that position

Read through

Michael,

I like how you used NumPy as it allows for quick mathematical operations on arrays. If you wanted you could create a NumPy array for your example:

```
points_per_game = np.array([23,32,36,27])
```

```
np.append(points_per_game, tonights_points)
```

Lauren

https://jakevdp.github.io/PythonDataScienceHandbook/02.02-the-basics-of-numpy-arrays.html#Multi-dimensional-subarrays