**CS173: Intermediate Computer Science**

**Reading 7**

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Read the assigned pages below from our course textbook. Complete the responses to the questions in this document and then save as a docx or pdf file. Submit your work by the assigned deadline on the Canvas course page or in class. Responses may be neatly handwritten or typed. **Put your name at the top!**

Readings: From the course textbook please read Chapter 11 through 11.3 (you can stop when you get to the section on 2D arrays).

You should come away with understanding:

* how arrays are declared
* how to initialize arrays
* how to use for loops to traverse arrays
* how to pass arrays as parameters to functions

1) List as many ways as you can find that C++ arrays are similar to python lists. If you need a primer or refresher on python lists check these resources from [W3 Schools](https://www.w3schools.com/python/python_lists.asp) and [Google for Developers](https://developers.google.com/edu/python/lists).

Both C++ arrays and python lists are a collection of values.

Both C++ arrays’ and python lists’ components can be accessed by an index that indicates the component’s position.

Both programming languages are possible to access a string with array index notation.

The default index order starts with 0.

Both C++ arrays and python lists are iterable.

Both C++ arrays and python lists can be passed as an argument to a function.

2) List as many ways as you can find that C++ arrays are different from python lists.

While python lists can hold different types of elements, C++ arrays should hold same type of elements.

Unlike python list declaration, C++ array declaration can include specifying the size of the array.

Unlike python list declaration, C++ array declaration must specify the data type that indicates what is stored in each component of the array before the array’s name.

While python lists throw an error if out-of-bounds array index has been accessed, C++ does not check for out-of-bounds array indexes.

C++ arrays are declared with curly brackets while Python lists are declared with square brackets.

Python lists have aggregate arithmetic on arrays, but C++ arrays do not allow aggregation on arrays.

Python list comparison is for identifying if both lists are identical but in C++, array comparison checks whether the arrays are stored at the same address in memory.

If we use return statement with the name of the list in Python it will return the list but in C++, return statement with the name of the array will return the memory address of the first element of the array.