Firstly, in this assignment, I was tasked to find an array in the C++ reference documentation. After finding arrays in the C++ documentation, I read about arrays and looked at the example. After finding and reading about arrays, it was time to write some code in GitHub; however, before being able to write anything in GitHub, an understanding of what an array is needed. An array is a collection of values that are similar to each other, with a finite size. A collection is the process of gathering things together. In this scenario, I am gathering sets of arithmetic values, sets of characters, and sets of a string of characters. For these sets to make up an array, they need to resemble each other without being identical. Lastly, I can not collect more elements than the given size, or in other words, capacity. This is important while coding because if I exceed or fail to meet the correct capacity of the array with my elements, it will not work.

Now that I understand what an array is, I can do my best to put it into code and have it work. First, I had to make a new directory called activity\_4\_1. I can confidently say that I am comfortable with doing this. After I create a new directory, I must create a file to go in this directory, which will store my code. This file is named set.cpp. The reason why I entered .cpp at the end of the file name is to make it a C++ file. The first thing I enter into this file is my libraries. A library is a collection of reusable code solutions. I included <cstdio>, which includes the printf library, which allows me to print the code I have written. Then I must include the array library <array> so that I can use the array codes efficiently. I also included the string library so that I can include a string of characters in my code. After including these libraries, I enter int main (). In C++, this is the entry point of my code. This is a function where the execution of my program begins. Then I entered return 0, at the end of the code. If a 0 is returned, then the code ran properly. If any value other than 0 comes out, then the program was not run correctly. Next, I enter std:array <int, 5> car + {1,2,3,4,5}. Std::array represents a fixed-size array, int represents that the array contains integers, 5 represents the size of the array, car represents the name, and {1,2,3,4,5} represents the values of the array. Then I enter std::printf(“%i\n”, car.at(1)). Std::printf represents the print function, %i represents the int set, \n represents a line break, car represents the name of the set I want to print, .at(1) represents I want to print the 2nd value in the set.

The questions asked to print 3 different arrays, but never specified how they had to be different, so I made one with integers, one with characters, and one with a string of characters. This completes this question. Now, for the vectors, from my understanding, a vector is similar to an array as it is a collection of similar values, but it does not have a finite size like an array. So in the code, I had to add the vector library, <vector>. Because arrays and vectors are similar, I could use similar code. The only things I had to change were changing std::array to std::vector, not including a size, and changing the name. So I repeated the process I used for arrays and used it with vectors.