Arrays of Values

Array- grouping of data. Arrays are used when we'll have a large group of data we're going to pull from. An example would be a random word generator and we want to list what words can be chosen at random- we could use an array to store the words. Note that arrays can only hold variables of the same data type (if you are storing numbers they must all be numbers (int) no other data types).

Declare an array by starting with a data type, then how many elements or sub-buckets (how large you want it to hold/contain), and you can then access any part of the array by using its index.

Declare arrays by defining the data type and use [] brackets and assign number of items or list the things in the array.

Then retrieve the values out of an array

Array is zero based and you can only use what is part of and none outside of it

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace Understanding_Arrays
{
    class Program
    {

        static void Main(string[] args)
        {
            /* int[] numbers = new int[5]; //square brackets used to define an array of
integers/numbers.  Can't do  more than 5 items if you use int[5]

            numbers[0] = 4;                   //sets the individual values; first element
always 0
            numbers[1] = 8;
            numbers[2] = 15;
            numbers[3] = 16;
            numbers[4] = 23;
            //numbers[6] = 42; Can't do  more than 5 items if you use int[5] above

         */

            /*  int[] numbers = new int[] { 4, 8, 15, 16, 23, 42 };            that way
you don't have to define the number ahead of time

                Console.WriteLine(numbers[1].ToString());            retrieving the
Value we put into a specific array
                Console.ReadLine();
             */
            /*
            string[] names = new string[] { "Eddie", "Alex", "Micahael", "David Lee" };

            foreach (string name in names)
            {
                Console.WriteLine(name);
            }
```

```
            Console.ReadLine();
            */

            string zig = "You can get what you want out of life" +
                "if you help enough other people get what they want.";

            char[] charArray = zig.ToCharArray();              //each element is an elemeny
of array and assigned to char array
            Array.Reverse(charArray);                          //will reverse the array
(first is last and last is first)

            foreach (char zigChar in charArray)     //only one line of code so no curly
braces
                Console.Write(zigChar);                //No Line break between each
character

            Console.ReadLine();
```

For more information check out these resources:

https://www.tutorialspoint.com/computer_programming/computer_programming_arrays.htm

file:///C:/ProgramData/GGI/DevPro/GDC-1500-000/Content/index.html#/course/1/arc/0/module/4/topic/5

Detailed Arrays tutorial for C#: https://www.youtube.com/watch?v=RQ0JHMGiobo