Arrays

- Arrays are a way of storing many variables, or elements, of the same type. The elements within an array are stored in one continuous memory block. Arrays are very useful, as they provide clean code and easy, efficient access to the elements within the array. An array is not a type, it is a collection.
- An array must be declared. To declare an array, you declare a variable like normal, but you put square brackets after the variable type.
- “Elements” are what the different items are called in an array. Every array has a certain length. Its length is determined through the number of elements within the array. This can be set during or after the array decleration.
- Each elements within an array has an index, or integer, to indentify it. Indexes start with 0 and count up. Trying to access elements outside of the length of an array results in an “IndexOutOfRangeException” error.
- The long way to set an array’s length and elements starts with typing “new int[//number of elements];” after declaring the variable. Afterwards, go to the Start function. Within the function, type the variable name followed by square brackets with the index number of the element you want to initialize.
- There is a way to declare an array and initialize it’s length and elements in one line of code. To do this, declare the array as you normally would. Then you put curly braces (with a semicolon) after the equal sign, like a function. You then type the elements, in the order you want them to appear, as a list within the braces. This simultaneously sets the array’s length. If you declare an array in this manner, you can still declare and initialize elements within the Start function.

- public int[] myArrayExample = {6, 66, 932, 33, 83, 404, 3}

  public void Start () {

  print(myArrayExample[3]); //33

  }

- public int[] myArrayExample = new int[7];

  public void Start () {

  myArrayExample[0] = 6;

  myArrayExample[1] = 66;

  myArrayExample[2] = 932;

  myArrayExample[3] = 33;

  myArrayExample[4] = 83;

  myArrayExample[5] = 404;

  myArrayExample[6] = 3;

  }

  public void myArrayExample () {

  print(myArrayExample[5] + “not found”);

  }

- public char[] greeting = {‘s’, ‘u’, ‘p’, ‘d’, ‘a’, ‘w’, ‘g’};

  public void SupDawg (char c) {

  foreach (char c in greeting) {

  print(c); //supdawg

  }

  }

- public string[] colors;

```
public void TheColors (int i) {
        switch (colors[i])
        {
                case “Red”:
                        print(“Red”);
                        break;
                case “Yellow”:
                        print(“Yellow”);
                        break;
                case “Green”:
                        print(“Green”);
                        break;
                default:
                        print(“stoplights suck for color-blind folk”);
                        break;
        }
}
```