

What have we learned?

- We learned how logic works in a computer program.
- We started with Scratch, which gave us an idea of logic
- We went on to JavaScript, which gave us the introduction to syntax and the fundamental concepts of:
 - **Conditionals:** used to make decisions (`if` statements)
 - **Loops:** used to repeat a certain process (`while`, `for`)
 - **Variables:** used to store various forms of data, such as strings, integers, etc.
 - **Functions:** the main building blocks of JavaScript. They allow you perform a group of tasks upon an event. They may need to return values back to the program that called it.
 - **Arrays:** A fancy list. It is ordered and has an index that allows you to access data inside of the array.
 - **Searching:** Find a specific element in a list. Linear search (fast, linear i.e. varies as n varies) and binary search (very fast, i.e. varies as $\log_2(n)$ varies)
 - **Sorting:** This takes n^2 time. Very slow. But allows you to search using binary once this is done.
 - **Objects:** Allows you to store key-value pairs that package information in a much more convenient manner.
 - **Binary notation:** all numbers can be expressed in base 10, base 2, or base n . Binary notation is the representation of the number in base 2.
 - JavaScript can do awesome stuff, like giving static HTML pages the capacity to react to user input (as seen in MP3).

JavaScript reference: The documentation now allows you to be able to understand the various ways in which the language has been expanded. You can also use APIs to access information and make various new programs to perform a specific task. You can understand this reference because you have all the fundamental information to now make sense of any JavaScript code.

We will be finally using JavaScript in conjunction with Excel to request data from the internet and finally present it in Excel.

Exam review questions

Write a function that takes in one parameter, an array of numbers, and returns the sum of those numbers.

ANSWER:

```
function sumOfArray(arr)
{
    var sum = 0;
    for (var i = 0; i < arr.length; i++)
    {
        sum +=arr[i];
    }
    return sum;
}
```

Write a function that takes in one parameter, an array of numbers, and returns the average of those numbers.

ANSWER:

```
function averageOfArray(arr)
{
    var sum = 0;
    for (var i = 0; i < arr.length; i++)
    {
        sum +=arr[i];
    }
    return sum / (arr.length);
}
```