Homework 2

**For** loops are used when we want to go through a block of code a certain number of times. This saves time by not having to write the same code over and over again. There are three statements that go into a for loop. The first statement,which is optional, is used to set the variable used in the loop, so i = 0. The second statement used to evaluate the condition of the first statement to see when to end the loop. Even though the second statement is also optional, if we don’t add a break statement, the loop will never end which leads to your browser crashing. The third statement is used to increment the first statements variable. The third statement is also optional if you have your values incrementing in the code instead.

**&&, ||, and !** are all logical operators. **&&,** the **and operator**, can only be true if both statements are true. So 3>2 && 2>1 is true because 3 is greater than 2 and 2 is greater than 1. However

2 >3 && 2>1 is false because even though 2 is greater than 1, 2 is not greater than 3. **||**, the **or operator,** can be true if one side of the statement is true and the other is false. Using our previous example 2>3 || 2>1 is true even though 2 >3 is false, 2>1 is true. **!**, the **not operator** is used to flip a value from true to false and from false to true. So !(2>3) is now true because the opposite of false is true.

**Arrays** are special! They can hold a lot of different values at the same time, though they don’t all have the be the same data type, it’s best practice to leave strings with strings and numbers with numbers. Arrays save on coding time and space. Say we have 5 different breeds of cats, instead of writing out different unique values for each one (cat1, cat2, cat3,cat4, cat5). We can create an array named cat and put all the breeds in there.

**Git** is a free and open source (which means anyone can add to it!) version control system that most,if not all programmers, use to track and maintain computer files (mainly code for programs that they're working on) and to coordinate working on those files in large groups.

**Github** is the best known and used git repository hosting service, it can be used to host source code which than can be forked by other programmers who can add improvements to the code and send pull requests to the programmer who first uploaded it. Github is basically a programmer's resume!