INTRODUCTION TO PROGRAMMING: TIPS AND COMMON ERRORS

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Programming Tips:

1. ALWAYS comment your code! It makes it easier for you or anyone else to understand it later. You do not want to come back to an uncommented code months later and not be able to understand anything.
2. Use the tab to properly align your code. Would you want to read this code (even though it will compile)?

   int main(){int num1,num2;double num3;

   string someString1 = "This is a string";num1 = 5;num2;num2+=num1;

   cout << num1 << endl;return0;}
3. Use functions if you are reusing the same portion of code several times. My rule of thumb is that if the code is called more than twice, then it probably should be a function.
4. Avoid global variables if you can!
5. Plan your code, write out a pseudo-code. Start out small and build the base code and go from there.
6. Compile and build your code often. Do not compile for the first time after writing over 300 lines of code.

Common Programming Errors:

1. **NUMBER 1 ERROR! Forgetting the semi-colon.**
2. **Extra semi-colons:**
   - **while (x < 10);**
   - **for (i=0; i<10; i++);**
3. Using "=" instead of "= =" when checking equality in *if* and *else if*.
4. Wrong array size or trying to access an element outside of the declared index.
5. Performing division with *int* variables"

   int num1 = 1, num2 = 2, num3;

   num3 = num1/num2;

This will give you num3 = 0 because it will only return an integer. Either declare all three variables as double or float or typecast to double.

6. Infinite loops, when the loop terminator is not reached because the loop counter is in decrement when it should be increment. i.e. for (int i=0; i>10; i--)

7. Calling a function before it has been declared.

8. Confusing characters with strings:

    - Single characters are declared using single quotes: char someChar = ‘a’;
    - Strings are declared using double quotes: char someString[] = “This is a string”;