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CSCI 3731

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Homework 2

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1. The casting of const int is used so that the compiler will not allow any changes in the value of a variable once it has been initialized, whereas an int variable can be used where a compiler can allow changes in the variable’s value.
2. Function declarations, or prototypes, need to be done first before the main class, otherwise they won’t. It tells the compiler that it exists and describes the return type and arguments. Function definitions can happen anywhere in the code as long as you declare the function first.
3. Unsigned integers are useful because they hold large numbers and would be useful in places, like array indexes, where negative numbers would be invalid. It’s one out of the many ways to make C++ coding safer.
4. Code Issue: The integer variable sum is not initialized to a value. Assign a value to variable sum. Use printf instead of print since print will not run on C++.
   1. int sum=0;
   2. for(int i=0; i<1000; ++i) {
   3. sum += i; }
   4. printf ("Sum of 0 to 999 is %d\n", sum);
5. Code Issue: Turn the if statement into a Boolean expression. Add one more = to the if statement. Use printf instead of print since print will not run on C++.
   1. int n = 1;
   2. if(n == 0) {
   3. printf ("n is zero\n");
   4. }
6. To figure out the size (in bytes) of a datatype in C++, use the following printf statement:

printf("%d\n", **sizeof**(**int**));

//sizeof(\*insert datatype here\*)

On the Command-Line, type in the following:

getconf \***insert datatype**\*

On my system (OS Mac), the number of bytes in each datatype are listed below:

|  |  |
| --- | --- |
| Datatype | Bytes |
| int | 4 |
| long | 8 (But can also be 4) |
| char | 1 |
| short | 2 |