Loop Examples

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Opening Discussion

- Let's look at some solutions to the interclass problem.
- I've added a new link on the links page for Project Euler. This site has a bunch of programming problems that are mathematically interesting over a range of difficulties. You know enough to do the easier ones now.
- Departmental mailing lists. If you are thinking of majoring or minoring you should consider putting yourself on them.

Local static Variables

- I was recently reminded of an obscure topics I forgot to cover when we did functions: local static variables.
- The keyword static in C-family languages means something akin to “only one”.
- As you know, normal local variables a created each time a method is called and destroyed when it returns so they have no memory of earlier calls.
- Local static variables (declared with the keyword “static”) aren't like this. They are like global variables with a local scope. Only one of them is created no matter how many times the function is called and it remembers its value between calls.

Nested Loops

- Loops are just statements and can be placed anywhere a statement goes. This includes inside of other loops or control structures.
- When one loop appears inside of another the result is that the body of the inner loop is executed a multiplicative number of times.

Using Loops

- Last time we introduced loops in C and ran through the simplest example we could with all three loop types to give you a feel for them.
- Today we want to write some more significant code that involves loops. We can start by converting our calculator to a loop instead of using recursion. Then we can write some standard types of math functions.
- If we have time we could write a function that doesn't have loops, but involves vector math.
- We can also do some loops on input other than a menu.

Minute Essay

- Which type of loop do you like best? Why?
- Interclass Problem – Write a function double sumNums(int howMany) that reads the specified number of doubles and returns their sum. Include a main to test that it works.