

**CS 1044, Summer II 2000**  
**Homework #1**  
**Due: Saturday, July 22 (by midnight)**

All answers must be typed using either MS Word or an ASCII text editor and submitted to the EAGS by midnight on Saturday, July 22. There will be no late extensions for this assignment. Handwritten answers will not be accepted; answers will not be accepted by methods other than the EAGS (such as e-mail). All short answer questions ("describe", "define", etc) can (and should) all be answered in one or two sentences. If you find yourself needing to write more, it probably means that you have the wrong answer. For any problem that involves computational steps, show intermediate work for partial credit.

The Honor Code is in effect for this assignment. You may consult your book, notes, or the instructor/GTA, but NOT other students (regardless of if they are in the class or not). By submitting this assignment you are pledging: "I have neither given nor received unauthorized help on this assignment."

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1) Assume the following file, input.dat:

What would be the output of the following C++ code (be careful and look closely at the code - it's not what it should be):

```
int Num;
ifstream inFile;

inFile.open("input.dat");

while(inFile)
{
    inFile >> Num;
    cout << Num << endl;
}
```

2) Write the C++ code required to read from an input filestream, inFile, and count the total number of spaces in the file.

3) When deciding on a type of loop to use, when would you use a while loop? When would you use a for loop instead?

4) What's the difference between a while and a do-while loop?

5) Write a C++ function called Product that takes two integer values and returns the product of all the integers between them. For example, if the function was invoked as Product(2, 4), it would return 24 (2 \* 3 \* 4). If the first integer is larger than the second, return an error value of -1.

6) Give the following C++ code, what is the program output: (Hint: draw pictures of memory locations to help you keep track of the values)

```
#include <iostream>

int A = 2;
int B = 3;

void Func(int& Num1, int Num2);

int main()
{
    int A = 4;
    int B = 1;
    int C = 8;

    cout << A << " " << B << " " << C << endl;

    Func(A, B);

    cout << A << " " << B << " " << C << endl;
    return (0);
}

// Dummy function
void Func(int& Num1, int Num2)
{
    Num1 = Num2 + A;
    Num2 = Num1 + B;
}
```

7) In the previous question, identify the function prototype, invocation, and definition.