



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> Kevin P. McManus	<b>Project Number</b>  22329
<b>Project Title</b> C vs C++	
<b>Objectives/Goals</b> My project's objective was to determine the speed of C compared to C++ (programming languages). I thought that C++ would be faster, because it was written more recently.	
<b>Abstract</b> <b>Methods/Materials</b> I used two books for reference, Herb Schildt's C++: The Complete Reference, and Teach Yourself C++, also by Schildt. I found these the most useful books while I was teaching myself programming. I used three compilers for the C language, and three compilers for the C++ language. I also used a computer. I wrote two programs (one that did math calculations, the other printed to the screen, both repeated the task 100,000 times) in the two languages. I compiled the C++ programs in the C++ compilers, and compiled the C programs in both the C compilers and the C++ compilers. I ran my programs ten times each, and recorded the time they took to run. I used Microsoft Excel to analyze my data using averages, medians, and graphs.	
<b>Results</b> The times varied with the different compilers, but the most significant evidence is the fact that the C programs compiled in the C++ compilers, were faster than the C++ programs I compiled in the C++ compiler. On a very basic level, C is faster than C++.	
<b>Conclusions/Discussion</b> At the basic level, in it's simple, basic functions, C is faster than C++. C is faster at math and printing, but C++ has plenty of advantages. If you look at the actual programs I wrote, the C++ code is a lot simpler. There are a lot of little things that I personally believe make the programmer's life easier. There are also a lot of bigger, more complicated things like classes, which can greatly simplify a large program. They didn't affect these programs, but in a real application or game, these features could make writing the program much easier. I think that when C was upgraded to C++, speed wasn't the only consideration. More important were power and ease of use.	
<b>Summary Statement</b> My project was on the relative speed of programming languages.	
<b>Help Received</b> My mother helped with the board layout.	