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CS31 – Lecture 1

October 7, 2017

Project 1 Report

**Step 5 Inputs:**

1. I inputted the positive integer 20 for the number of people who were surveyed. Then, I inputted the positive integer 8 for the number of people who approve of the way the president is handling his job. Next, I inputted the positive integer 15 for the number of people who disapprove of the way the president is handling his job. These inputs led to the nonsensical output of 40% of people approving the way the president is handling his job, 75% of people disapproving the way the president is handling his job, and the statement that more people disapprove than approve. Since 8 + 15 = 23 and 23 > 20, the outputs are nonsensical because the sum of the number of people approving and the number of people disapproving the way the president is handling his job is greater than the number of people who were inputted to be surveyed. This error causes incorrect percentage statements to be outputted because the program only divides the number of people either approving or disapproving of the way the president is handling his job by the inputted value of the number of people surveyed and not the sum of the number of people approving and the number of people disapproving of the way the president is handling his job. These nonsensical outputs can be fixed by using an if statement that prevents the sum of the number of people approving and disapproving the way the president is handling his job from being greater than the number of people stated to be surveyed. Another way to prevent these nonsensical outputs is by removing the user input for the number of people surveyed and having the number of people surveyed equal to the sum of the number of people approving and the number of people disapproving the way the president is handling his job.

**Step 6 Logical Errors:**

1. I introduced into the source code a < operator that replaces the > operator in the if-statement. This replacement causes the program to state that more people approve than disapprove when the numDisapprove variable is greater than the numApprove variable. For example, if a user inputs 19 for the number of people surveyed, 3 for the number of people approving the way the president is handling his job, and 16 for the number of people disapproving the way the president is handling his job, the program will recognize that 3 is less than 16, but the program will state that more people approve than disapprove. Thus, despite the program being able to compile and run, a logic error occurs because the program builds successfully while producing incorrect results from reasonable inputs.

**Step 7 Compile Errors:**

1. I removed from the source code all semicolons after every line of code. By removing from the source code all semicolons after every line of code, the compiler is unable to compile the program; thus, creating a compile error. Furthermore, the compiler reported the following error: 1>c:\users\fax21\source\repos\compile\_error\compile\_error\compile\_error.cpp(7): error C2144: syntax error: 'int' should be preceded by ';'

This error occurred because I did not place a semicolon after std in line 5. As a result, the program believes that I am trying to declare a variable in line 7, which states int main(), instead of me trying to create a main function. As a result, the compiler is stating that I must place a semicolon after line 7.

1. I switched the << with the >> symbols and vice versa from every line of code in the source code. This caused a compile error and the following errors was reported by the compiler:

* 1>c:\program files (x86)\microsoft visual studio\2017\community\vc\tools\msvc\14.11.25503\include\istream(1075): note: see declaration of 'std::operator >>'
* 1>c:\users\fax21\source\repos\compile\_error\compile\_error\compile\_error.cpp(14): error C2784: 'std::basic\_istream<char,\_Traits> &std::operator >>(std::basic\_istream<char,\_Traits> &,signed char &)': could not deduce template argument for 'std::basic\_istream<char,\_Traits> &' from 'std::ostream'
* 1>c:\users\fax21\source\repos\compile\_error\compile\_error\compile\_error.cpp(15): error C2678: binary '<<': no operator found which takes a left-hand operand of type 'std::istream' (or there is no acceptable conversion)
* 1>c:\users\fax21\source\repos\compile\_error\compile\_error\compile\_error.cpp(15): note: could be 'built-in C++ operator<<(bool, int)'

By switching the << symbols with >> symbols and vice versa, the compiler is unable to compile because cout statements require << symbols and cin statements require >> symbols. As a result, a compile error occurs and the errors are stating that I used the wrong << and >> symbols for the wrong cases.