CS 31 Project 1 Report

Based on step 5 of the CS 31 project specifications, I executed the program in the file “**original.cpp**” with the following integers to try and produce “*incorrect, unusual, or nonsensical output*.” After I inputted the integer *2* for the first question, “*How many people were surveyed?*”, I inputted 1,234 for both of the following questions “*How many support/oppose impeachment of the president*” and the program outputted “*61700.0%*” for the percent of people that support and oppose impeachment. I also inputted the integer *0* for the first question, following this up with *2* for the second question and *2* for the third question. In response, the program outputted “*inf%*” for the percent of people that support and oppose impeachment. Additionally, I inputted the integer *-10* for the first question, as well as *4* for the second and third question, which resulted in the program outputting “*-40%*” for the percent of people that support and oppose impeachment. It was also interesting to note that with all the abnormal outputs that the program displayed, the program also always displayed the following statement: “*More people oppose impeachment than support it”,* even if it was not true.

Based on step 6 of the CS 31 project specifications, I executed the program in the file “**logic\_error.cpp**” with the following modifications to cause the program “*to produce incorrect results from reasonable input.*” I made a change at the line “double pctFor = 100.0 \* forImpeachment / numberSurveyed;”, changing the *100.0* to a *10.0* in order to simulate a probable mistake that someone might make. After making this change, when I inputted the integer *20* as the answer to the first question and *10* to the answer to the two following questions, the program had the output as “*5.0%*” for the percent of people who supported impeachment and “*50.0%*” for the percent of people who were against impeachment. I also made a change at the line “double pctAnti = 100.0 \* antiImpeachment / numberSurveyed”, changing the *\** sign to a + sign as another probable mistake that someone could make while coding quickly. After making this change, when I inputted the integer *20* as the answer to the first question and *10* to the answer to the two following questions, the program had the output as “*5.0%*” for the percent of people who supported impeachment and “*100.0%*” for the percent of people who were against impeachment.

Based on step 7 of the CS 31 project specifications, I executed the program in the file “**compile\_error.cpp**” with the following modifications to “*cause the program to fail to compile correctly.*” I made a change at the line “cout << "How many people were surveyed? ";”, removing the semicolon at the end of the line, to which the IDE outputted the error “*syntax error: missing ‘;’ before identifier ‘cin’*” and g31 outputted the error “*error: expected ';' before 'cin'*.” I also made a change at the line “cin >> forImpeachement;”, adding an extra *e* to the variable *forImpeachment*, to which the IDE outputted the error “*identifier “forImpeachement” is undefined*” and g31 outputted the error “*error: 'forImpeachement' was not declared in this scope;*.”