**CS 31 Project 1 Report**

**Step 5:**

Input 1:   
numSurveyed= 25

numApprove= 10

numDisapprove= 10  
  
Output 1:   
40.0% say they approve.

40.0% say they disapprove.

More people disapprove than approve.

Program ended with exit code: 0

**(Incorrect statement as the number of people who approve and disapprove are the same)**

Input 2:   
numSurveyed= 25

numApprove= 26

numDisapprove= 10  
  
Output 2:   
104.0% say they approve.

40.0% say they disapprove.

More people approve than disapprove.

Program ended with exit code: 0

**(Logically does not make sense as number of people who approve and disapprove cannot exceed the number of people who were surveyed)**

Input 3:   
numSurveyed= 25

numApprove= -10

numDisapprove= -15  
  
Output 3:   
-40.0% say they approve.

-60.0% say they disapprove.

More people approve than disapprove.

Program ended with exit code: 0

**(Does not make sense as number of people who approve and disapprove cannot be a negative value)**

Input 3:   
numSurveyed= 0

numApprove= 0

numDisapprove= 0  
  
Output 3:   
nan% say they approve.

nan% say they disapprove.

More people disapprove than approve.

Program ended with exit code: 0

**(Does not make sense as nan% is a nonsensical value for the percentage of people who approve and disapprove)**

Input 3:   
numSurveyed= 0

numApprove= 15

numDisapprove= 10  
  
Output 3:   
inf% say they approve.

inf% say they disapprove.

More people approve than disapprove.

Program ended with exit code: 0

**(Does not make sense as percentage of people who approve and disapprove cannot be inf%. Also, the number of people who approve and disapprove cannot exceed the number of people surveyed)**

**Step 6:**

The logical errors introduced in the source code is as follows.

1. The statement for the computation of the percentage of people who approve of the way the president is handling his job has been modified to, *double pctApprove=100 / numApprove / numSurveyed;* Thus, the formula for percentage calculation is incorrect and we see an incorrect output.
2. The if statement has been modified to, *if (numApprove < numDisapprove).* Thus, we receive a reversed statement about whether or not the number of people who approve are more than the number of people who disapprove.

Example input:  
How many people were surveyed? 25  
How many of them approve of the way the president is handling his job? 15  
How many of them disapprove of the way the president is handling his job? 10

Example output:  
0.3% say they approve.

60.0% say they disapprove.

More people disapprove than approve.

Program ended with exit code: 0

**Step 7:**

The two types of mistakes introduced in the source code which prevent the program from compiling correctly are as follows.

1. The semicolon in the input statement *cin >> numDisapprove;* was removed.
2. The variable declaration statement for the integer variable numApprove was removed.
3. The curly bracket ‘}’ at the end of the code was removed.

The compiler errors that popped up were as follows:

* Semantic Issue: Use of undeclared identifier, numApprove
* Parse issue: Expected ‘;’ after expression
* Parse issue: Expected ‘}’