Cassandra Cantu

UID: 305-100-205

CS31 W2021

1/5/21

Project 1

For **Step 5**, I tried different inputs that caused the program to produce the following incorrect, unusual, or nonsensical results.

1. Negative numbers for all inputs (Ex: -4, -3, -1)

The output is:

**75.0% of the -4 electors voted for the Republican party candidate.**

**25.0% of the -4 electors voted for the Democratic party candidate.**

**Looks like the Republican party candidate won!**

This is nonsensical because there is no way to have negative votes. This occurred because there is no way of checking for negative numbers. Because of this, the voting percentages became positive values through the calculations, and so the “if” condition for the republican party winning was met (75% > 25%).

1. A negative number for either republican/democratic votes such that adding votes together equals the total votes (Ex: 2, -1, 3)

The output is:

**-50.0% of the 2 electors voted for the Republican party candidate.**

**150.0% of the 2 electors voted for the Democratic party candidate.**

**Looks like the Democratic party candidate won!**

This is nonsensical because there is no way to have negative votes. This occurred because there is no way of checking for negative numbers, so the “if” condition for the democratic party winning was met (150% > -50%).

1. 0 for total number of votes (Ex: 0, -1, 1)

The output is:

**-inf% of the 0 electors voted for the Republican party candidate.**

**inf% of the 0 electors voted for the Democratic party candidate.**

**Looks like the Democratic party candidate won!**

This is nonsensical because there is no way to have negative votes or zero electoral college electors. This occurred because there was no way of checking for negative numbers or 0 total votes. In the percentage calculation, we divide by the total number of votes. Dividing by 0 gives us +/- infinity respectively. Thus, the “if” condition for the democratic party winning was met (+infinity > -infinity).

**logic\_error.cpp**

Error added: switching the greater than sign (>) to the less than sign (<) in the “if” statements comparing the percent of republican and democratic votes

**if** (pctRepub < pctDemoc)

{

cout << "Looks like the Republican party candidate won!" << endl;

}

**if** (pctDemoc < pctRepub)

{

cout << "Looks like the Democratic party candidate won!" << endl;

This error causes the program to give out the opposite, wrong statement of who won from reasonable outputs.

**compile\_error.cpp**

1. Deleting “}” for the last line

Error message:

Expected '}'

Since I didn’t contain the whole code in brackets, the program cannot be built.

1. Not copying down one of the defined expressions exactly

Error message:

Use of undeclared identifier 'totalvoters'; did you mean 'totalVoters'?

Earlier, I defined “totalVoters“ as an expression. Later, I wrote, “**if** (republicanVotes + democraticVotes != totalvoters)”. Because these aren’t exactly the same, the program cannot be built.