**Report on Project 3**

a) Obstacles (I think) I overcame:

Took a while to understand how to start the code. Took a while to write the function bool hasCorrectSyntax because I was unsure what loops to use. Had a lot of undefined behaviour/had a tough time debugging due to the lack of else statements after the if statements.

b) Pseudocode

…

bool hasCorrectSyntax(string pollData):

return true if empty string;

capitalize the alphabets;

repeatedly check

if first two characters are statecode

then check

if the next one or two characters are digits

then check

if the next character is an alphabet

suitably increment the position of the character;

else return false;

else return false;

else return false;

…

…

int countVotes(string pollData, char party, int& voteCount):

check if pollData has correct syntax

if not return 1;

then check if at least one party has zero votes

if yes return 2;

then check if the char party is an alphabet

if not return 3;

if the parameter pass all the above tests

calculate the number of votes and change the value of vote count

return 0;

…

c) Test Data

1. (hasCorrectSyntax("TX38RCA55D") - to check if the function hasCorrectSyntax works
2. (hasCorrectSyntax("Tx38RCA55d") - to check if the function hasCorrectSyntax works with the uppercase and lowercase characters
3. (!hasCorrectSyntax("MX38RCA55D") - to check if the function hasCorrectSyntax works for the wrong statecode
4. countVotes("TX38RCA55DMs6rnY29dUT06L", 'd', votes) - to check if the function countVotes works with a lowercase char party
5. countVotes("TX38RCA55DMs6rnY29dUT06L", 'D', votes) - to check if the function countVotes works with a uppercase char party
6. countVotes(" ", 'D', votes) - to to check if the function hasCorrectSyntax works with just a space as the string pollData
7. countVotes("@TX38RCA55D", 'D', votes) - to check if the function hasCorrectSyntax works with a character other than an alphabet or digit in the string pollData
8. countVotes("TX38R CA55D", 'D', votes) - to check if the function hasCorrectSyntax works with a space in the string pollData
9. countVotes("Shreya", 's', votes) - to check if the function hasCorrectSyntax works with only alphabets in the string pollData
10. countVotes("9989359100", 'k', votes) - to check if the function hasCorrectSyntax works with only digits in the string pollData
11. countVotes("TX38RCA55DCa", 'r', votes) - to check if the function hasCorrectSyntax works when the string pollData ends with a statecode
12. countVotes("", 'd', votes) - to check if the functions hasCorrectSyntax/countVotes work with an empty string pollData
13. countVotes("TX38RCA55D", '%', votes) - to check if the function countVotes works with a special character as char party
14. countVotes("TX38RCA55D", '3', votes) - to check if the function countVotes works with a digit as char party
15. countVotes("TX38RCA55D", ' ', votes) - to check if the function countVotes works with a a space as char party
16. countVotes("TX0RCA55D", 'm', votes) - to check if the function countVotes works when one state forecast predicts zero electoral votes(single digit) for that state
17. countVotes("TX4RCA00D", 'm', votes) - to check if the function countVotes works when one state forecast predicts zero electoral votes(double digit) for that state
18. countVotes("TX0RCA00D", 'm', votes) - to check if the function countVotes works when more than one state forecast predicts zero electoral votes for that state
19. hasCorrectSyntax("ny29dtx38+hi4d") - to check if the function hasCorrectSyntax works when the party code is replaced with a special character in the string pollData
20. countVotes("ny29dtx38+hi4d", 'd', v) - to check if the function countVotes works when the party code is replaced with a special character in the string pollData
21. countVotes("ny29dtx383hi4d", 'd', v) - to check if the functions hasCorrectSyntax/countVotes work when the party code is replaced with a digit in the string pollData