Report

1. Obstacles

I found it hard to think clear about all the conditions that satisfy the requirements of syntax. There are many incorrect syntaxes that are keep coming up while I was coding, which made me have to greatly revise my code again and again. However, I made a map of the logic with a draft, and I tried to classify all the possible situations that are out of the requirement of syntax. Therefore, I found out the basic logic and sequence of the if-statement that can discover the syntax problem one by one.

1. Pseudocode
2. Set a global variable of all the state codes in an array.
3. Set a function of checking the characters format with the input string

Repeatedly:

If existing character not digit or alpha or ‘,’

Return false

Otherwise return true

1. Set a function turning all the characters in string into uppercase

Repeatedly:

Turn every character into uppercase and store in ‘upperpds’

Return ‘upperpds’

1. Set a function checking statecode in the right position and format

If input is empty string

Return true

Cut the first two characters as ‘head’

Repeatedly:

Check whether ‘head’ is statecode

Return false if ‘head’ is not statecode

Repeatedly:

If a character is ‘,’,

Return false if it is at the last two characters of the string

Return false if the character in front of it is not an alpha or either of the two characters behind it is not an alpha

Cut the first two characters behind the character as ‘head’

Repeatedly:

Check whether ‘head’ is Statecode

Return false if ‘head is not statecode

Return true if all condition passed

1. Set a function checking party position and format

Repeatedly:

If a character in the string is alpha,

Continue if the previous two characters are “,alpha” or the previous one is “,”

Set “a” to true if the previous two characters are alpha+digit

Set “a” to true if the previous three characters are alpha+digit+digit

Otherwise return false

Return “a”

1. Set a function “hasProperSyntax” checking bool with the previous three function

Return true if input is empty string

Return true if stateCode, format, and party are all true

Otherwise return false

1. Set a function setting tallySeats with input pollData, party, and original seatTally

Return 1 if pollData doesn’t have proper syntax

Return 2 if party is not alpha

Upperlize the poll data

Upperlize the party

Set seaTally as 0 and return 0 if pollData is empty string

Set seaTally as 0

Repeatedly:

If a character in pollData is party

Add the previous digit/digits as integer to seatTally

1. Set the main function

Get the polldata

Get the party

Get the seatTally

Check the syntax of the polldata

Set result of seaTally using tallySeats function

Return result

1. Test Data

valid Data

1. Many state forcast data: (“CT5D,NY9R17D1I,VT,ne3r00D”, D, 99)
2. One state forcast pollData: (“NY9R17D1I”, R,7)
3. Original seatTally unset: (“NY9R11D1I,Vt,NJ3d5r4D,KS4R”, a, 0)
4. PollData is empty string: (“ “, d, 99)
5. Only statecode: (“Ny”, d, 8)
6. Polldata all lowercase while state uppercase: (“ct5d,ny9r17d1i,vt,ne3r00d”, D, 99)
7. Polldata all uppercase while state lowercase: (“NY9R17D1I”, r,7)
8. seatTally set as 0: (“ct5d,ny9r17d1i,vt,ne3r00d”, d, 0)
9. party code never appears in polldata: (“NY9R17D1I”, A,7)
10. party code also appears in statecode: (“NY9R17D1I”, N,7)

invalid Data

1. space in pollData: (“N Y9R17D1I,Vt,NJ3d5r4D,KS4R”,d,5)
2. incorrect position of digits: (“NY9R17D1I,Vt,NJ3d5r4D,KS4R6666”,d,5)
3. incorrect position of statecode: (“6666NY9RA17D1I,Vt,NJ3d5r4D,KS4R”,d,5)
4. Invalid StateCode: (“AA12d”,d,5)
5. Digits more than three: (“NY9R117D1I”,r,7)
6. More than one comma: (“NY9R17D1I”,,r,7)
7. Statecode followed by alpha: (“NYa9R17D1I”,r,7)
8. seatTally exceedingly large: (“ct5d,ny9r17d1i,vt,ne3r00d”,d,10000000000)
9. More than one party char: (“NY9R17D1I”,rr,7)
10. Wrong data format input: (“NY9R17D1I”,10,7)
11. Wrong data format input: (“NY9R17D1I”,d,a)
12. Wrong data format input: (5,d,7)
13. With special characters input: (“NY9R17D1I,NY#”,r,7)