**Second Example to illustrate planning using mini-algorithms where required.**

Input a series of letters ending with a ‘rogue’ value of ‘?’. Output the count of the number of a’s entered and also the total number of letters entered. Use suitable test data to check your program.

**Input**

|  |  |  |
| --- | --- | --- |
| *variableName* | *Type* | *availability* |
| letter | string | User keyboard in a loop |
|  |  |  |

**Constants**

Not applicable

**Output**

|  |  |  |
| --- | --- | --- |
| *variableName* | *format* | *where* |
| numberOfA | Whole integer number | Screen after the loop (statistic) |
| totalNumLetters | Whole integer number | Screen after the loop (statistic) |

**Calculations**

Code for two counters (mini-algorithm)

**Test data**

|  |  |  |
| --- | --- | --- |
| letter | numberOfA | totalNumletters |
| b, w, a, d, g, a, s, ? | 2 | 7 |
| s, c, e, v, ? | 0 | 4 |
| ? | 0 | 0 |

**Testing plan**

***Version 1***

*#enter the data*

Declare variables

Enter letter

Repeat until letter is equal to ?

#processing

Enter letter

***Version 2***

*#enter the data*

*#add code for first counter*

Declare variables

Enter letter

Set numberOfA to zero

Repeat until letter is equal to ?

#processing

If letter is ‘a’

Add to counter numberOfA

Enter letter

Display numberOfA

***Version 3***

*#enter the data*

*#add code for first counter*

*#add code for second counter*

Declare variables

Enter letter

Set numberOfA to zero

Set counter numbOfletters to zero

Repeat until letter is equal to ?

#processing

Increase NumberOf Letters counter by 1

If letter is ‘a’

Add to counter numberOfA

Enter letter

Display numberOfA

Display numberOf Letters counter

***Version 4***

*#add in extra code to ensure program does not crash with unexpected data input*