**SQAT Homework 1**

1 a) The list of equivalent classes can be given after considering the valid and invalid inputs can be given as :

Valid inputs:

{5 digits} ,{5 digits followed by a hypen followed by 4 digits}

Invalid inputs:

{Length of input is not equal to 5},

{ Total number of digits ,including hyphen in the 6th place, is not equal to 10},

{Input contains non-numeric entries in the first five positions and last 4 positions},

{Input contains special characters other than hyphen},

b) The test cases can be given as:

|  |  |  |
| --- | --- | --- |
| Test case # | Input value | Expected output |
| 1 | 85281 | Tempe AZ |
| 2 | 85281-8001 | Tempe AZ |
| 3 | 852 | Error message |
| 4 | 8528a | Input not accepted |
| 5 | 85281\*8001 | Input not accepted |

USPS has a good implementation of this feature, but it would be desirable to make a few minor changes.The positives are that it does not accept invalid characters by not allowing the pressed key value to be displayed. Eg. If you type any alphabet or most of the special symbols (except hyphen in the 6th place), it does not show up in the input display box. It also restricts the number of input digits to be maximally 10.An ‘error message’ is shown when wrong or non-existent values are entered.

The small flak here is that when %, ( or & are entered instead of a hyphen, client-side validation does not happen, as in the other cases, where such letters would never get typed into the input box itself. Although the error message gets displayed, unlike other cases, these 3 symbols can be typed into the search box. This denotes a slightly inconsistent approach, and may confuse users.

The error message too, is not very intuitive, but generic in nature.

2 a) Modified java program has been included.

b) The test cases for weak robust can be given as:

|  |  |  |
| --- | --- | --- |
| Test case# | Expected Input Set | Expected Output |
| WR1 | 3,4,5 | Right-angled Triangle |
| WR2 | 2,2,2 | Equilateral Triangle |
| WR3 | 6,6,2 | Isosceles Triangle |
| WR4 | 8,4,12 | Scalene Triangle |
| WR5 | 1,1,6 | Not a triangle |
| WR6 | -3,4,5 | Invalid Input (out of range) |
| WR7 | 3,-4,5 | Invalid Input (out of range) |
| WR8 | 3,4,-5 | Invalid Input (out of range) |
| WR9 | 200,150,250 | Invalid Input (out of range) |
| WR10 | 250,150,200 | Invalid Input (out of range) |
| WR11 | 150,250,200 | Invalid Input (out of range) |

c) The Junit test programs have been included.