Software Quality and Testing Semester 2, 2023-24 CA1 [16%]

Eoin Fitzsimons – X23151374

# Question 1B

An input box accepts a single integer value as an input which represents the age of a person. Based on the age entered, the system determines the theatre ticket price the person should pay. Based on the age entered, the prices are as follows:

|  |  |
| --- | --- |
| Age | Price |
| Under 8 | 10 |
| 9 - 16 | 14 |
| 17 - 70 | 16 |
| Over 70 | 11 |

1. Determine the collection of equivalence classes for the input value i.e., age.
2. What is the minimum number of test cases required to achieve maximum coverage?
3. Identify suitable test values based on the equivalence classes identified at item a.

## A

|  |  |
| --- | --- |
| Valid Equivalence | Invalid Equivalence |
| Numeric value (0 – 150) | Letters or other non-numeric symbols |

## B

The minimum number of test cases is 8,9,16,17,70,71 to test the border numbers.

So 6 test cases are required.

## C

|  |  |
| --- | --- |
| Valid Test Values | Invalid Test Values |
| 66 | Eight |
| 1 | -23 |
| 143 | 2346 |

# Question 2A.

An input box accepts a username. Based on the username entered the system determines

whether the username is valid if the username conforms to the following rules: the username has between 6 and 13 characters; the username can only contain letters, numbers and exclamation points i.e., ‘!‘; the first 4 characters are letters from the English alphabet followed by any 2 digits from the

following list 0, 2, 4, 6, and 8.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 6-13 characters | letters & numbers & ! | The first 4 characters are letters, 02468 x2 |
|  |  |  |  |
| 6-13 characters | gh56^^av  (The first 4 characters are not letters. Then numbers from 02468 x2) | 02abcdefgh0!  (The first 4 characters are letters or the numbers from 02468 x2 but not in that order.) | abcd00”””” |
| letters & numbers & ! | ab!!!! | !b1  (Too Short) | abcd2299999999999999999999!!!!!!!!!!  (too long) |
| The first 4 characters are letters, 02468 x2 | abcd24()()()  (does not have letters or numbers or !) | abcd2424242424242424242!!!!!!!!! | abcd24!”£$%^&\*()!”£$%^&\*()!”£$%^&\*()  (has letters and numbers and ! and more symbols or letters in another language) |

Apply the equivalence partitioning technique and the boundary value analysis technique to identify suitable test inputs (i.e. input values) for testing the above specification, ensuring that they cover all the equivalence classes and the boundaries.

Matches all 3:

abcd23!

qqqq80qqqq!!!

loud66man!

eoin00isbest!

## Equivalence Partitioning

|  |  |  |
| --- | --- | --- |
| Condition | Valid | Invalid |
| 6-13 characters | gh56^^av | abcd2299999999999999999999!!!!!!!!!! |
| letters & numbers & ! | !b1 | abcd24!”£$%^&\*()!”£$%^&\*()!”£$%^&\*() |
| The first 4 characters are letters, 02468 x2 | abcd2424242424242424242!!!!!!!!! | gh56^^áv |

## Boundary Value Analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Condition | invalid | valid | invalid |
| 6-13 | has 5 or less | has 6-13 | has 14 or more |
| letters & numbers & ! | does not have letters or numbers or ! | has only letters and numbers and ! | has letters and numbers and ! and more symbols or letters in another language |
| The first 4 characters are letters, 02468 x2 | The first 4 characters are letters or the numbers from 02468 x2 but not in that order. | The first 4 characters are letters, then the next 2 characters are numbers from 02468 | The first 4 characters are not letters, or numbers from 02468 x2 |