Software Engineering - IT314

Black Box Testing

GROUP 32

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Q1:

Equivalence class for Day:

1) day between 1 to 28 (both inclusive) - **valid**
2) day 29 - **valid**
3) day 30 - **valid**
4) day 31 - **valid**
5) day more than 31 (31 excluded) - **invalid**
6) day less than 1(1 not included) - **invalid**

Equivalence class for Month:

7) Months with days 31 (Month number 1, 3, 5, 7, 8, 10, 12) - **valid**
8) Months with days 30 (Month number 4, 6, 9 , 11) - **valid**
9) Months with days 28 (Month number 2) - **valid**
10) month more than 12 (12 excluded) - **invalid**
11) month less than 1 (1 excluded) - **invalid**

Equivalence class for Year:

12) year between 1900 to 2015 (both inclusive) - **valid**
13) year more than 2015 (2015 excluded) - **invalid**
14) year less than 1900 (1900 excluded) - **invalid**

Different combination of above classes :

1) 1, 7, 12 - valid class
2) 2, 7, 12 - valid class
3) 3, 7, 12 - valid class
4) 4, 7, 12 - valid class
5) 1, 8, 12 - valid class
6) 2, 8, 12 - valid class
7) 3, 8, 12 - valid class
8) 1, 9, 12 - valid class
9) Rest all permutations - invalid class

Logic:

```
if day<1 or day>31 or month<1 or month>12 or year<1900 or year>2015:
    print('Invalid')

elif (month in [2, 4, 6, 9, 11] and day == 31):
    print('Invalid')

elif (month == 2 and day > 28):
    print('Invalid')

else:

    if day == 1:

        if month == 1:

            if year == 1900: # 01/01/1900
                print('Invalid')

            else:
                day = 31
                month = 12
                year = year - 1
                print('{}/{}/{}'.format(day,month,year))


        elif month == 3:
            month = 2
            day = 28
            print('{}/{}/{}'.format(day,month,year))


        elif month in [5, 7, 10, 12]:
            month = month - 1
            day = 30
            print('{}/{}/{}'.format(day,month,year))

        else:
            day = 31
            month = month - 1
            print('{}/{}/{}'.format(day,month,year))

    else:
        day = day - 1
        print('{}/{}/{}'.format(day,month,year))
```

Equivalence Class Test Cases

Test cases	Input data	Expected Output
Day < 0	Day = -1	Invalid
Day > 31	Day = 32	Invalid
Month < 0	Month = -1	Invalid

Month > 12	Month = 13	Invalid
Year < 1900	Year = 1800	Invalid
Year > 2015	Year = 2018	Invalid
Valid case	25/12/2002	24/12/2002

Boundary Value Analysis Test Cases (DD/MM/YYYY)

TestCase	Input date	Expected Output
#1	31/06/2000	Invalid date
#2	29/02/2001	Invalid date
#3	30/02/2001	Invalid date
#4	31/02/2001	Invalid date
#5	01/02/2001	31/01/2001
#6	01/03/2001	28/02/2001
#7	01/04/2001	31/03/2001
#8	01/05/2001	30/04/2001
#9	01/06/2001	31/05/2001
#10	01/07/2001	30/06/2001
#11	01/08/2001	31/07/2001
#12	01/09/2001	31/08/2001
#13	01/10/2001	30/09/2001
#14	01/11/2001	31/10/2001
#15	01/12/2001	30/11/2001
#16	01/01/2001	31/12/2000
#17	01/01/1900	Invalid date

Q2:

Constraints:
0≤ ID ≤ 99999
1≤Quantity≤99
Cart Total ≤$999.99

Equivalence Classes:
ID:
1) ID between 00000-99999 (both inclusive) i.e. 00000 ≤ ID ≤ 99999
2) ID less that 00000 (00000 excluded) i.e. ID < 00000
3) ID greater than 99999 (99999 excluded) i.e. ID > 99999
Quantity:
4) quantity between 1-99 (both inclusive) i.e. 1 <= Quantity ≤ 99
5) quantity less than 0 (0 excluded) i.e. Quantity < 0
6) quantity greater than 99 (99 excluded) i.e. Quantity > 99
Total Value (in dollars):
7) Cart total between 0-999.99 (both inclusive) i.e. 0 ≤ cart total ≤ 999.99
8) Cart total greater than 999.99 (999.99 excluded) i.e. cart total > 999.99

Assumed item for our test case with ID : 100 and cost : $100.

Testcase:

Testcase	Input Data	Expected Output
ID<0	ID=-1	Error message
ID>99999	ID=100000	Error message
Valid ID Quantity > 99	ID=100 Quantity=1000	Error message
Valid ID Quantity < 0	ID=100 Quantity=-1	Error message

Valid ID Valid Quantity Cart Total >$999.99	ID=100 Quantity=50	Error message
Valid ID Valid Quantity Valid Cart Total	ID=100 Quantity=5	Cart Total=$500
Valid ID Valid Quantity Valid Cart Total	ID=100 Quantity=0	Item(ID-100) has been successfully removed from Cart (If already present)
Valid ID Valid Quantity Valid Cart Total	ID=100 Quantity=0	Error message since there is no item(ID-100) in cart. (If already not present)