SYMBIOSIS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

Software Testing and Quality Assurance

Lab Assignment – 7

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BRANCH: CS (C4)

Question: Write a program to accept a date and display the previous date with the following range:

- 1<=date<=31
- 1<=month<=12
- 1990<=year<=2025

Create the decision table and create the equivalence class partitioning.

Code for ***Equivalence Testing*** (written in Python using Jupyter Notebook):

```
monthList = [12,1,2,3,4,5,6,7,8,9,10,11]
dayList = [31,27,31,30,31,30,31,31,30,31,30,31]

newMonth = month;
newYear = year;
if day == 1:
  if month == 1:
    newYear = year-1;

  newMonth = monthList[month-1];

  if(newMonth == 2):
    if(newYear%4==0):
      newDay = 28
    else:
      newDay = 27
  else:
    newDay = dayList[newMonth-1];
else:
  newDay=--day;

print(day,"/",month,"/",year)
print(newDay,"/",newMonth,"/",newYear)
```

Decision Table:

M1: Month has 30 days

M2: Month has 31 days except January, March and August

M3: Month is March

M4: Month is August

M5: Month is January

M6: Month is February

D1: day = 1

D2: 2 <= day <=28

D3: day = 29

D4: day = 30

D5: day = 31

Y1: Year is a leap year

Y2: Year is not a leap year

E1: Impossible

E2: Decrement a day

E3: Reset to 31 days

E4: Reset to 30 days

E5: Reset to 29 days

E6: Reset to 28 days

E7: Decrement a Month

E8: Reset to December

E9: December a Year

TestID	C1	C2	C3	E1	E2	E3	E4	E5	E6	E7	E8	E9
1	M1	D1	Y1			1				1		
2	M1	D1	Y2			1				1		
3	M1	D2	Y1		1							
4	M1	D2	Y2		1							
5	M1	D3	Y1		1							
6	M1	D3	Y2		1							
7	M1	D4	Y1		1							
8	M1	D4	Y2		1							
9	M1	D5	Y1	1								
10	M1	D5	Y2	1								
11	M2	D1	Y1				1			1		
12	M2	D1	Y2				1			1		

13	M2	D2	Y1		1							
14	M2	D2	Y2		1							
15	M2	D3	Y1		1							
16	M2	D3	Y2		1							
17	M2	D4	Y1		1							
18	M2	D4	Y2		1							
19	M2	D5	Y1		1							
20	M2	D5	Y2		1							
21	M3	D1	Y1					1		1		
22	M3	D1	Y2						1	1		
23	M3	D2	Y1		1							
24	M3	D2	Y2		1							
25	M3	D3	Y1		1							
26	M3	D3	Y2		1							
27	M3	D4	Y1		1							
28	M3	D4	Y2		1							
29	M3	D5	Y1		1							
30	M3	D5	Y2		1							
31	M4	D1	Y1			1				1		
32	M4	D1	Y2			1				1		
33	M4	D2	Y1		1							
34	M4	D2	Y2		1							
35	M4	D3	Y1		1							
36	M4	D3	Y2		1							
37	M4	D4	Y1		1							
38	M4	D4	Y2		1							
39	M4	D5	Y1		1							
40	M4	D5	Y2		1							
41	M5	D1	Y1			1					1	1
42	M5	D1	Y2			1					1	1
43	M5	D2	Y1		1							
44	M5	D2	Y2		1							
45	M5	D3	Y1		1							
46	M5	D3	Y2		1							
47	M5	D4	Y1		1							
48	M5	D4	Y2		1							
49	M5	D5	Y1		1							
50	M5	D5	Y2		1							
51	M6	D1	Y1			1				1		
52	M6	D1	Y2			1				1		
53	M6	D2	Y1		1							
54	M6	D2	Y2		1							
55	M6	D3	Y1		1							
56	M6	D3	Y2	1								
57	M6	D4	Y1	1								
58	M6	D4	Y2	1								
59	M6	D5	Y1	1								
60	M6	D5	Y2	1								

Test Cases:

TEST CASE ID	MONTH	DAY	YEAR	EXPECTED OUTPUT
1	April	1	2000	31 March 2000
2	April	1	2001	31 March 2001
3	April	15	2000	14 April 2000
4	April	15	2001	14 April 2001
5	April	29	2000	28 April 2000
6	April	29	2001	28 April 2001
7	April	30	2000	29 April 2001
8	April	30	2001	29 April 2001
9	April	31	2001	Impossible
10	April	31	2000	Impossible
11	May	1	2000	30 April 2000
12	May	1	2001	30 April 2001
13	May	15	2000	14 May 2000
14	May	15	2001	14 May 2001
15	May	29	2000	28 May 2000
16	May	29	2001	28 May 2001
17	May	30	2000	29 May 2000
18	May	30	2001	29 May 2001
19	May	31	2000	30 May 2000
20	May	31	2001	30 May 2001
21	March	1	2000	29 February 2000
22	March	1	2001	28 February 2001
23	March	15	2000	14 March 2000
24	March	15	2001	14 March 2001
25	March	29	2000	28 March 2000
26	March	29	2001	28 March 2001
27	March	30	2000	29 March 2000
28	March	30	2001	29 March 2001
29	March	31	2000	30 March 2000

30	March	31	2001	30 March 2001
31	August	1	2000	31 July 2000
32	August	1	2001	31 July 2001
33	August	15	2000	14 August 2000
34	August	15	2001	14 August 2001
35	August	29	2000	28 August 2000
36	August	29	2001	28 August 2001
37	August	30	2000	29 August 2000
38	August	30	2001	29 August 2001
39	August	31	2000	30 August 2000
40	August	31	2001	30 August 2001
41	January	1	2000	31 December 2000
42	January	1	2001	31 December 2001
43	January	15	2000	14 January 2000
44	January	15	2001	14 January 2001
45	January	29	2000	28 January 2000
46	January	29	2001	28 January 2001
47	January	30	2000	29 January 2000
48	January	30	2001	29 January 2001
49	January	31	2000	30 January 2000
50	January	31	2001	30 January 2001
51	February	1	2000	31 January 2000
52	February	1	2001	31 January 2001
53	February	15	2000	14 February 2000
54	February	15	2001	14 February 2001
55	February	29	2000	28 February 2000
56	February	29	2001	Impossible
57	February	30	2000	Impossible
58	February	30	2001	Impossible
59	February	31	2000	Impossible
60	February	31	2001	Impossible