Black Box test design techniques practice. Pt.1: equivalence partitioning, boundary value analysis, pairwise testing

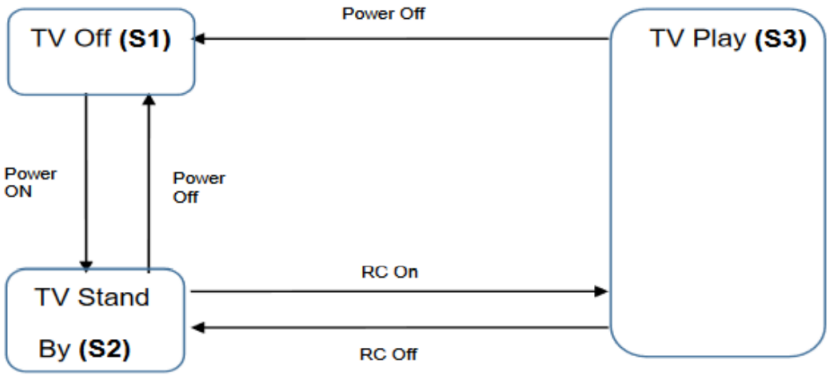
Assignment

Stefania Pruteanu

LEVEL 1. Which statement about the state transition diagram and the table with test cases is correct?

Answer is: B. These test cases show all possible valid transitions on the chart.

ISTQB 4.2.4 : " *(...) A state transition table shows all valid transitions and potentially invalid transitions between states, as well as the events, guard conditions, and resulting actions for valid transitions. State transition diagrams normally show only the valid transitions and exclude the invalid transitions.*"



2. Which scenario that is likely in real life is omitted in the table?

TESTS / CONDITIONS	**T1**	**T2**	**T3**	**T4**
Over 1 year of experience?	**Y**	**N**	**N**	**Y**
Is the goal set?	**N**	**N**	**Y**	**Y**
Is the goal achieved?	**N**	**N**	**Y**	**Y**
Issue a bonus	**N**	**N**	**N**	**Y**

From the requirement "Employees of the company are issued bonuses if they have **[worked for more than a year]** and have **[fulfilled the goals] [set in advance]**.":

C1 : more than 1 year - Y / N
C2: goal set in advance - Y/ N
C3: goal fulfilled - Y/ N

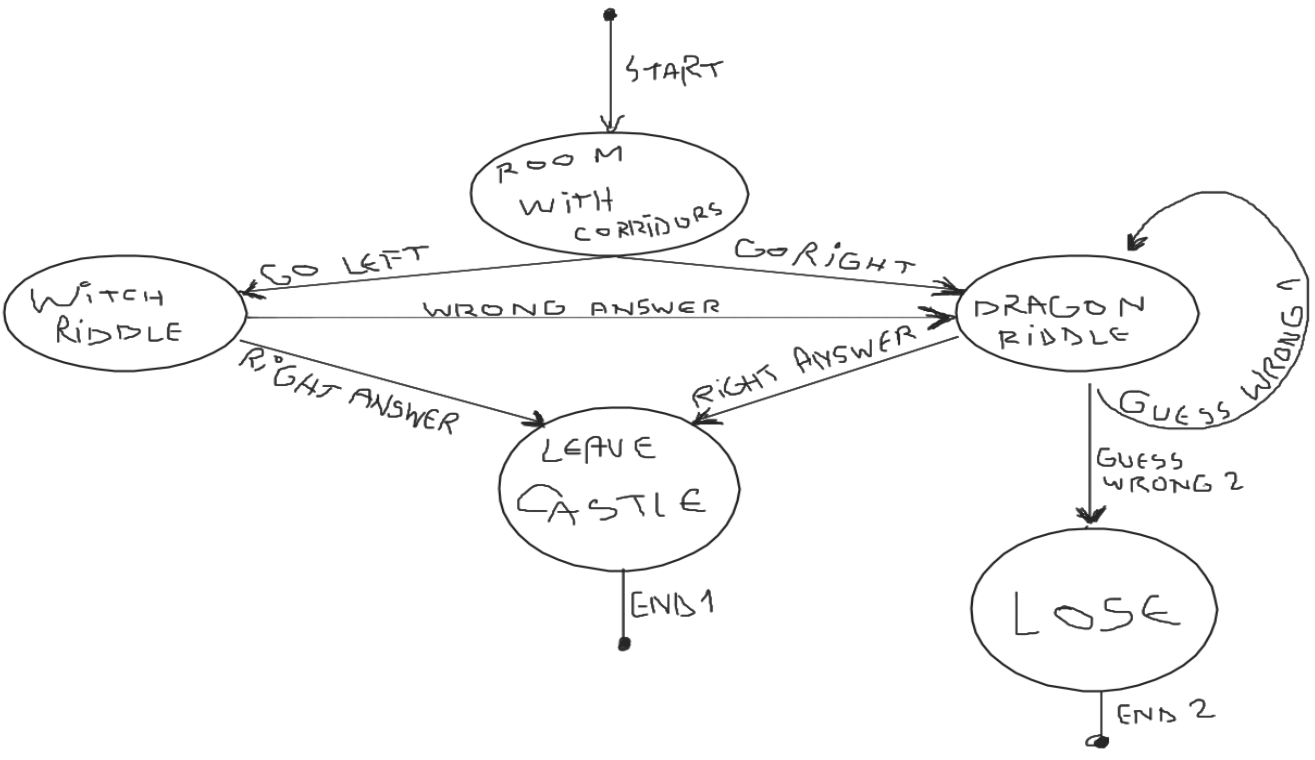
8 TESTS

T4	B?	~~A?~~	T1	T3	~~D?~~	~~C?~~	T2
Y	Y	Y	Y	N	~~N~~	N	N
Y	Y	~~N~~	N	Y	Y	~~N~~	N
Y	N	Y	N	Y	N	Y	N
Y	Y	N	N	N	N	N	N

In real life.. what's the point of achieving a goal that is not set, right? So we can cross out the N set in advance columns: (not A., or C.).
And as a first condition to have 1 or more years of work, setting a goal and achieving it is useless anyway: (not D.)

So answer is: B. Condition 1 = YES, Condition 2 = YES, Condition 3 = NO, Action = YES

LEVEL 2. Make a state and transition diagram for testing the following video game:



2. How many test cases, according to the diagram, will be enough to test this game?

1. To **WIN** the game once, we test the following:

START - GO LEFT - WITCH -WRONG ANSWER - DRAGON - WRONG ANSWER 1- **DRAGON- RIGHT ANSWER - LEAVE - END1 ~ 10/15**

2. To **LOSE** the game once, we test the following:

START - GO LEFT - WITCH- WRONG ANSWER - DRAGON - WRONG ANSWER 1 - **DRAGON - WRONG ANSWER 2 - LOSE - END2 ~ 10/15**

But if we want to cover the rest of statements/transitions, we can have another 2 tests :

3. START - GO RIGHT - DRAGON - WRONG ANSWER 1 - DRAGON - RIGHT ANSWER - LEAVE - END1 ~ 8/15

4. START - GO LEFT - WITCH - RIGHT ANSWER - LEAVE - END 1 ~6/15

From the above sets, we can sort just 2 tests for every state/transition AND with high coverage :

START - GO RIGHT - DRAGON - WRONG ANSWER 1 - DRAGON - RIGHT ANSWER - LEAVE - END1.
Coverage ~ 8/15

START - GO LEFT - WITCH - WRONG ANSWER - DRAGON - WRONG ANSWER 1 - DRAGON - WRONG ANSWER 2 - LOSE - END2.
Coverage ~ 10/15

LEVEL 3. We continue to develop a cat photo sharing app.

a. Write 5 use cases for how a typical user of your app would behave

1.