

SmartHome testing (ZKS semestral work)

David Herel

App description

I have decided to test my semestral work, which I have developed for the ONM subject. It is a smart house simulation, where people in the house interact with the devices. They can be damaged, repaired, run out of supply, etc. Also, the house is interacting with the current weather, etc.

Boundary values and Equivalence classes

The whole smart house simulation can be run from the .txt file which contains the settings. In this setting, I have chosen to test human construction. For them, 3 inputs are needed. Name of the person, the age of the person, and the gender of the person.

```
.
A
David
24
Male
A
Marek
```

We can see that the input is char A - adult. Then the name of the person and then the age of the person. Now we describe the Equivalence classes for every input.

Input	EC classes	Validity	Example
Name	Empty	Invalid	-
	Long	Invalid	Mojejmenojedelsinez20
	Correct	Valid	David
Age	age<0	Invalid	-8
	0<age<120	Valid	24
	age>120	Invalid	140
Gender	Empty	Invalid	-
	Male	Valid	Male
	Female	Valid	Female
	Other	Invalid	Dolphin

Now we define the boundary values:

Name - {-, "David", "Mojejmenojedelsinez20"}

Age - {-8, 24, 140}

Gender - {-, "Male", "Female", "Dolphin"}

Input Data Combinations

Now we perform two, three-way uniform strength coverage with also mixed strength coverage(name, gender). The generated .csv files can be found in the resources folder.

2-way contains 12 possible configurations

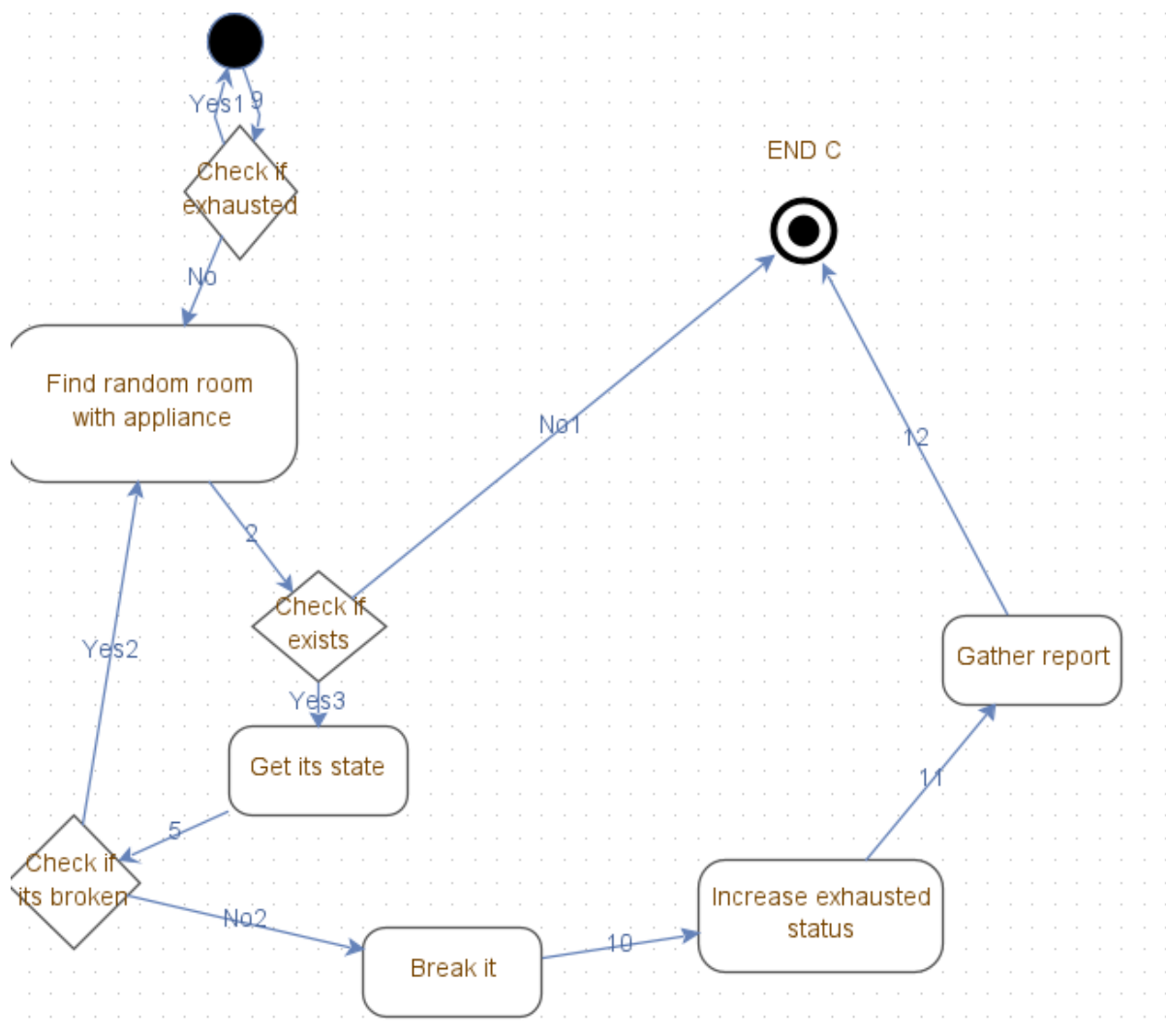
3-way contains 36 configurations

2-way mixed contains 12 configurations


Process testing

We make 3 path-based test case scenarios.

Pet make a random action




TDL : 1

 Test situations 9, TDL= 1, ALG= PCT.

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Sub-combinations of edges		Test situations
No.	Test sequence	
1	9 - No - 2 - Yes3 - 5 - Yes2 - 2 - No1	
2	9 - No - 2 - Yes3 - 5 - Yes2 - 2 - Yes3 - 5 - No2 - 10 - 11 - 12	
3	9 - Yes1 - 9 - No - 2 - No1	


TDL : 2

 Test situations 8, TDL= 2, ALG= PCT.

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Sub-combinations of edges		Test situations
No.	Test sequence	
1	9 - No - 2 - Yes3 - 5 - Yes2 - 2 - No1	
2	9 - No - 2 - Yes3 - 5 - Yes2 - 2 - Yes3 - 5 - No2 - 10 - 11 - 12	
3	9 - Yes1 - 9 - No - 2 - No1	

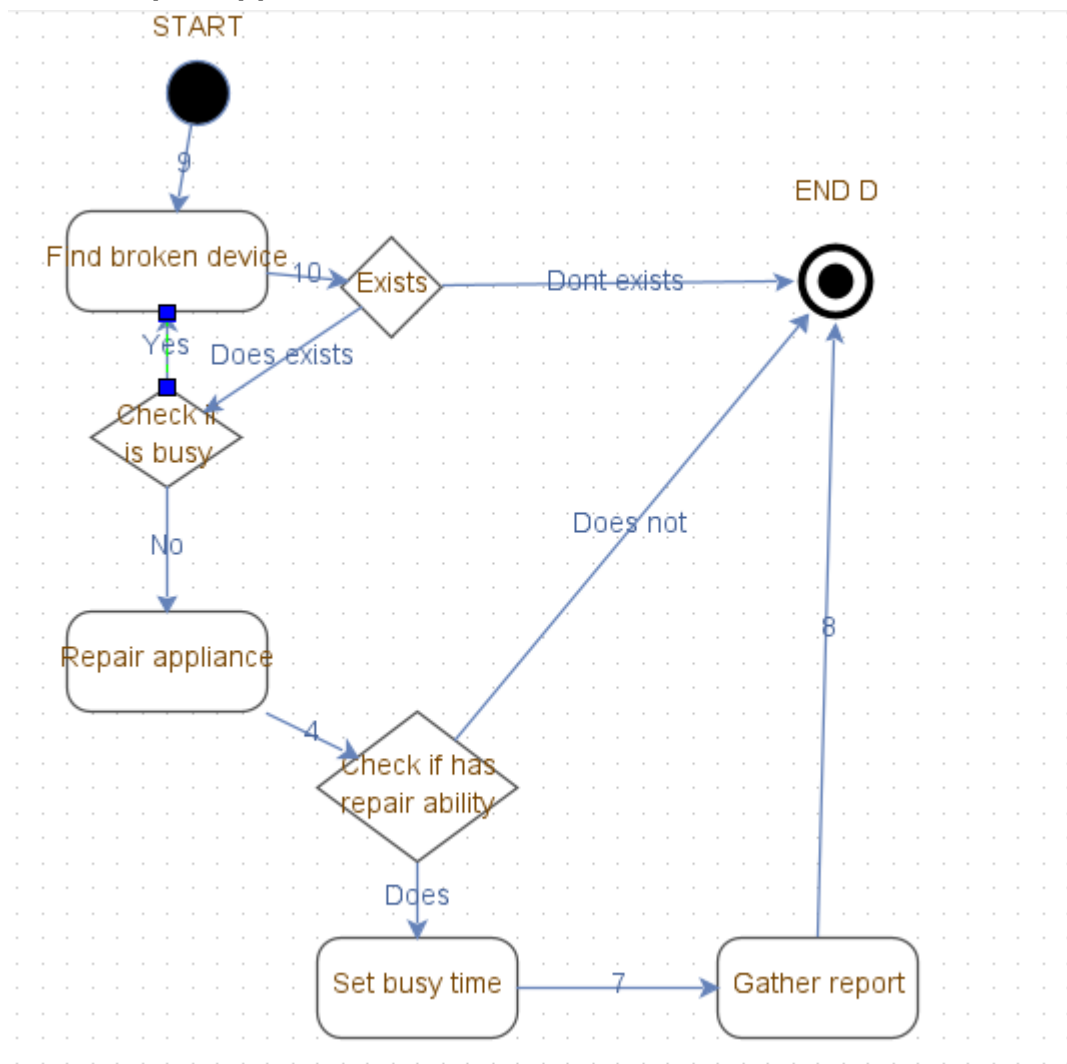
TDL : 3

 Test situations 10, TDL= 3, ALG= PCT.

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Sub-combinations of edges		Test situations
No.	Test sequence	
1	9 - No - 2 - Yes3 - 5 - Yes2 - 2 - Yes3 - 5 - No2 - 10 - 11 - 12	
2	9 - No - 2 - Yes3 - 5 - Yes2 - 2 - Yes3 - 5 - Yes2 - 2 - No1	
3	9 - No - 2 - No1	
4	9 - Yes1 - 9 - No - 2 - No1	
5	9 - Yes1 - 9 - Yes1 - 9 - No - 2 - No1	

Human repair appliance



TDL 1

☀ Test situations 1, TDL= 1, ALG= PCT.



Sub-combinations of edges		Test situations
No.	Test sequence	
1	9 - 10 - Does exists - Yes - 10 - Does exists - No - 4 - Does not	
2	9 - 10 - Does exists - Yes - 10 - Does exists - No - 4 - Does - 7 - 8	
3	9 - 10 - Does exists - Yes - 10 - Dont exists	

TDL 2

Test situations 2, TDL= 2, ALG= PCT.



Sub-combinations of edges		Test situations
No.	Test sequence	
1	9 - 10 - Does exists - Yes - 10 - Does exists - No - 4 - Does not	
2	9 - 10 - Does exists - Yes - 10 - Does exists - No - 4 - Does - 7 - 8	
3	9 - 10 - Does exists - Yes - 10 - Dont exists	

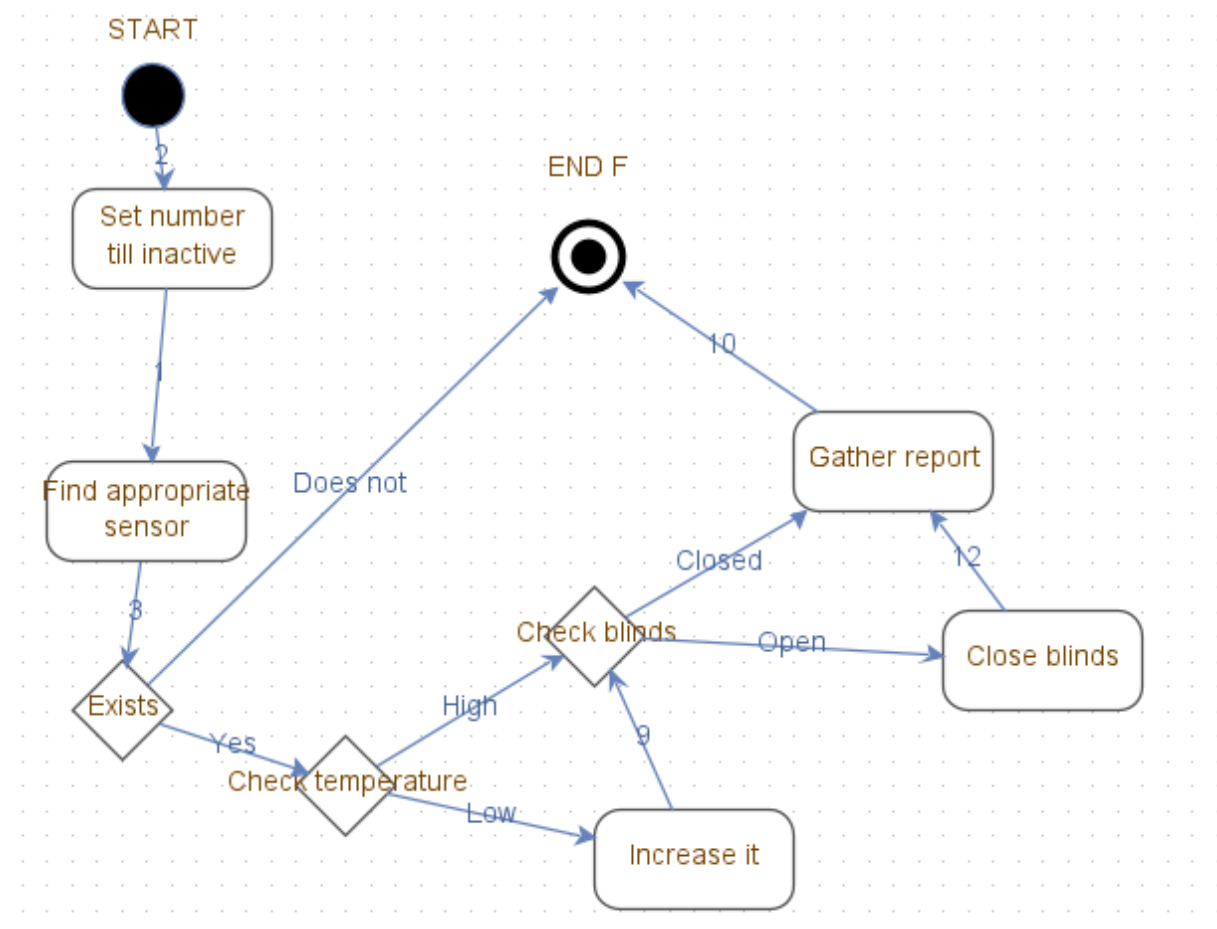
TDL 3

Test situations 3, TDL= 3, ALG= PCT.



Sub-combinations of edges		Test situations
No.	Test sequence	
1	9 - 10 - Does exists - Yes - 10 - Does exists - No - 4 - Does not	
2	9 - 10 - Does exists - Yes - 10 - Does exists - No - 4 - Does - 7 - 8	
3	9 - 10 - Does exists - Yes - 10 - Does exists - Yes - 10 - Dont exists	
4	9 - 10 - Dont exists	

Sensor reaction to the storm



TDL 1



Test situations 4, TDL= 1, ALG= PCT.



Sub-combinations of edges		Test situations
No.	Test sequence	
1	2 - 1 - 3 - Does not	
2	2 - 1 - 3 - Yes - High - Closed - 10	
3	2 - 1 - 3 - Yes - Low - 9 - Open - 12 - 10	

TDL 2



Test situations 5, TDL= 2, ALG= PCT.



Sub-combinations of edges		Test situations
No.	Test sequence	
1	2 - 1 - 3 - Does not	
2	2 - 1 - 3 - Yes - Low - 9 - Closed - 10	
3	2 - 1 - 3 - Yes - High - Closed - 10	
4	2 - 1 - 3 - Yes - High - Open - 12 - 10	
5	2 - 1 - 3 - Yes - Low - 9 - Open - 12 - 10	

TDL3



Test situations 6, TDL= 3, ALG= PCT.



Sub-combinations of edges		Test situations
No.	Test sequence	
1	2 - 1 - 3 - Does not	
2	2 - 1 - 3 - Yes - Low - 9 - Closed - 10	
3	2 - 1 - 3 - Yes - High - Closed - 10	
4	2 - 1 - 3 - Yes - High - Open - 12 - 10	
5	2 - 1 - 3 - Yes - Low - 9 - Open - 12 - 10	