Assignment 3 solution

ECE 653

Yanxin Wang

20439686

y574wang@uwaterloo.ca

Question 1

(a)

$$P_a = P_{a=True} \oplus P_{a=False}$$
$$= (True \wedge b) \vee (b \wedge c) \vee (True \wedge c) \oplus (False \wedge b) \vee (b \wedge c) \vee (False \wedge c)$$
$$= (b \vee (b \wedge c) \vee c) \oplus (b \wedge c)$$
$$= (b \wedge \neg c) \vee (\neg b \wedge c)$$

b	c	$(b \wedge c)$	$b \vee (b \wedge c) \vee c$	P_a
T	T	T	T	F
T	F	F	T	T
F	T	F	T	T
F	F	F	F	F

Similarly, we have

$$P_b = (a \wedge \neg c) \vee (\neg a \wedge c)$$
$$P_c = (a \wedge \neg b) \vee (\neg a \wedge b)$$

	a	b	c	P	P_a	P_b	P_c
1	T	T	T	T	F	F	F
2	T	T	F	T	T	T	F
3	T	F	T	T	T	F	T
4	T	F	F	F	F	T	T
5	F	T	T	T	F	T	T
6	F	T	F	F	T	F	T
7	F	F	T	F	T	T	F
8	F	F	F	F	F	F	F

(b) GACC: Major clause evaluates to true and false
With respect to clause a:$\{2,3\} \times \{6,7\}$
With respect to clause b:$\{2,5\} \times \{4,7\}$
With respect to clause c:$\{3,5\} \times \{4,6\}$

(c) CACC: GACC + P evaluates to true and false
With respect to clause a:$\{2,3\} \times \{6,7\}$
With respect to clause b:$\{2,5\} \times \{4,7\}$
With respect to clause c:$\{3,5\} \times \{4,6\}$

(d) RACC: GACC + Minor clauses stay the same
With respect to clause a:$(2,6), (3,7)$
With respect to clause b:$(2,4), (5,7)$
With respect to clause c:$(3,4), (5,6)$

Question 2

(a) No.

The partition "Size of s2" does not satisfy the completeness property.

When s2 is null, it does not fit in any block.

(b) Yes.

The partition "Size of s2" satisfies the disjointness property.

Those two blocks has no overlapping.

(c) No.

The partition "Relation between s1 and s2" does not satisfy the completeness property.

When s1 is null, it does not fit in any block.

(d) No.

The partition "Relation between s1 and s2" does not satisfy the disjointness property.

When the size of s1 equals the size of s2, it fits in both blocks.

(e) 3 test requirements. 1(for base choice)+1(for characteristic one)+1(for characteristic two)=3

Question 3

(a) The title is ambiguous. It is hard to tell the bug from the title. The title only indicates something is wrong, but does not offer more details about where or when this bug happens.

There is also a spelling mistake (*reciepients*)

Some important information is not provided in the description such as buildID.

The description is wrong according to the screenshot and comment 2. It is the last address that appears for each recipient.

The "Mozilla" in description should be "SeaMonkey".

(b) Title:

Bug 100001 – Element is not updated when inserting

Status:	new	Reported:	2013-03-27 22:41 EST by Yanxin Wang
Whiteboard:		Modified:	
Keywords:	insert, update	CC List:	
Product:	Hashtable	See Also:	
Component:	Hashtable		
Version:	Trunk		
Platform:	Windows 7 Ultimate x64		
Importance:	Critical	Crash Signature:	
Target Milestone:			
Assigned To:			
QA contact:			
URL:			
Depends On:			
Blocks:			

Description:

When inserting a new element with a specified key, if an element with the same key already exists in the hashtable, this existing element will not be updated.

Reproducible: Always

Steps to reproduce:

1. Create a hashtable

   hashtable htable = new hashtable(3);

2. Insert a new element with a specified key k

   htable.put(k,*value_1*)

3. Insert another new element with the same key k

   htable.put(k,*value_2*)

4. Print element with the key

   System.out.println(htable.get(k));

Expected result: value 2

Actual result: value 1