**SSW 567 - Assignment 6**

**Group 5**

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**Assignment Description**

OATS Testing

Read Copeland Ch. 6 Pairwise Testing. Do Practice 1.Document your results.

1. Neither the Brown & Donaldson nor the Stateless University Registration System case studies contain huge numbers of combinations suitable for the pairwise testing approach. As exercises, use the orthogonal array and/or all pairs technique on the other two examples in this chapter. Determine the set of pairwise test cases using the chosen technique.
   1. A bank has created a new data processing system that is ready for testing. This bank has different kinds of customers - consumers, very important consumers, businesses and non-profits; different kinds of accounts - checking, savings, mortgages, consumer loans and commercial loans; they operate in different states, each with different regulations - California, Nevada, Utah, Idaho, Arizona and New Mexico.
   2. In an object-oriented system, an object of class A can send a message containing a parameter P to an object of class X. Classes B, C and D inherit from A so they too can send the message. Classes Q, R, S and T inherit from P so they too can be passed as the parameter. Classes Y and Z inherit from X so they too can receive the message.

**Results**

1a.

Identify variables:

* kinds of customers
* different kinds of accounts
* different states

2. Determine # of choices for each variable:

* kinds of customers - consumers, very important consumers, businesses, non-profts (4 choices)
* different kinds of accounts - checking, savings, mortgages, consumer loans, commercial loans (5 choices)
* different states - California, Nevada, Utah, Idaho, Arizona, New Mexico (6 choices)

3. Locate an orthogonal array

I have 1 4-level factor, 1 5-level factor and 1 6-level factor. This gives 120 combinations.

The lower bound is 6\*5 = 30. **The closest standard orthogonal array would be 6\*6 = 36, so L36, an array with 36 rows.**

4. Map the test problem onto the orthogonal array.

## Using ‘ALLPAIRS Test Case Generation Tool (Version 1.2.1)’

[http://www.satisfice.com/tools.shtml]

L30(415161)

That is: 30 rows, 3 columns - 1 column with 4 choices, 1 column with 5 choices, 1 column with 6 choices

5. Construct the test cases

|  |  |  |  |
| --- | --- | --- | --- |
| TEST CASES | |  |  |
| case | Customer | Account | State |
| 1 | consumer | checking | California |
| 2 | very important consumer | savings | California |
| 3 | businesses | mortgage | California |
| 4 | non-profits | consumer loans | California |
| 5 | very important consumer | checking | Nevada |
| 6 | consumer | savings | Nevada |
| 7 | non-profits | mortgage | Nevada |
| 8 | businesses | consumer loans | Nevada |
| 9 | businesses | checking | Utah |
| 10 | non-profits | savings | Utah |
| 11 | consumers | mortgage | Utah |
| 12 | very important consumers | consumer loans | Utah |
| 13 | non-profits | checking | Idaho |
| 14 | businesses | savings | Idaho |
| 15 | very important consumers | mortgage | Idaho |
| 16 | consumers | consumer loans | Idaho |
| 17 | consumers | commercial loans | Arizona |
| 18 | very important consumers | checking | Arizona |
| 19 | businesses | savings | Arizona |
| 20 | non-profits | mortgage | Arizona |
| 21 | very important consumers | commercial loans | New Mexico |
| 22 | consumers | checking | New Mexico |
| 23 | non-profits | savings | New Mexico |
| 24 | businesses | mortgage | New Mexico |
| 25 | businesses | commercial loans | California |
| 26 | non-profits | commercial loans | Nevada |
| 27 | ~consumers | commercial loans | Utah |
| 28 | ~very important consumers | commercial loans | Idaho |
| 29 | ~consumers | consumer loans | Arizona |
| 30 | ~very important consumers | consumer loans | New Mexico |

Please note that the values marked with ‘~’ do not matter, because all of their pairings have already been selected.

1b.

1 Identify variables

1. senders
2. parameters
3. receivers

2. Determine number of choices for each variable

senders: A, B, C, D (4 choices)

parameters: P, Q, R, S, T (5 choices)

receivers: Y, Z, X (3 choices)

3. Locate an orthogonal array

I have 1 4-level factor, 1 5-level factor and 1 3-level factor. This gives 60 combinations.

The lower bound is 4\*5 = 20.  **The closest standard orthogonal array would be 5\*5 = 25, so L25, an array with 25 rows.**

4. Map the test problem onto the orthogonal array.

## Using ‘ALLPAIRS Test Case Generation Tool (Version 1.2.1)’

[<http://www.satisfice.com/tools.shtml>]

L20(314151)

That is: 20 rows, 3 columns - 1 column with 4 choices, 1 column with 5 choices, 1 column with 3 choices

5. Construct the test cases

|  |  |  |  |
| --- | --- | --- | --- |
| TEST CASES | |  |  |
| case | sender | parameter | receiver |
| 1 | A | P | X |
| 2 | B | P | Y |
| 3 | C | P | Z |
| 4 | A | Q | Y |
| 5 | B | Q | X |
| 6 | C | Q | X |
| 7 | D | Q | Z |
| 8 | A | R | Z |
| 9 | B | R | X |
| 10 | C | R | Y |
| 11 | B | S | Z |
| 12 | D | S | X |
| 13 | A | S | Y |
| 14 | D | T | Y |
| 15 | A | T | X |
| 16 | B | T | Z |
| 17 | D | P | ~X |
| 18 | D | R | ~Y |
| 19 | C | S | ~X |
| 20 | C | T | ~Y |

Please note that the values marked with ‘~’ do not matter, because all of their pairings have already been selected.

**Lessons Learned**

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**Honor Pledge**

We pledge on our honor that we have not given or received any unauthorized assistance on this assignment/examination. We further pledge that we have not copied any material from a book, article, the Internet or any other source except where I have expressly cited the source.