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Homework 4: Orthogonal array

In order to create a test plan from an orthogonal array, we need to look back at our equivalence classes based off of the requirements. The orthogonal array method of creating test cases is based off of equivalence partitions and the boundary cases that come from that.

Table 1: Equivalence Partitions.

Less than 9 characters	At least 9 characters and not more than 24 characters	More than 24 characters
Contains no blank spaces	Contains no blank spaces	
Contains insufficient lower case	Contains sufficient lower case	
Contains insufficient upper case	Contains sufficient upper case	
Contains insufficient numbers	Contains sufficient numbers	
Contains insufficient special characters	Contains sufficient special characters	
Contains a identical five-character substring	Does not contain a identical five-character substring	

From our previous Equivalence classes, we can make the following border cases.

1. Less than 9 characters
2. 9 characters
3. 24 characters
4. More than 24 characters
5. Contains insufficient lower case
6. Contains sufficient lower case
7. Contains insufficient upper case
8. Contains sufficient upper case
9. Contains insufficient numbers
10. Contains sufficient numbers
11. Contains insufficient special characters
12. Contains sufficient special characters
13. Contains a identical five-character substring (Similar)

14. Does not contain a identical five-character substring (Not similar)

By using these border conditions, we are able to generate generic orthogonal array test cases. The orthogonal arrays will be based on the setup shown in table 2. Using a program to generate the orthogonal arrays, I created test plans that ran on different numbers of strength for pairwise testing used to create orthogonal arrays. I tested n1, n2, n3, ,6, and n7 and made separate test plans for each just to see how many test cases each plan contained. The n1 test plan consisted of 4 test cases. The n2 plan consisted of 11 test cases. The n3 plan consisted of 27 cases. The n6 plan consisted of 184 cases. The n7 plan consisted of 256 cases.

Table 2: Order of Orthogonal array results.

Number of characters	# of characters
Contains a space	True/False
Sufficient Lower case	True/False
Sufficient Upper case	True/False
Sufficient numbers	True/False
Sufficient Special characters	True/False
Similar	True/False