

In-class Exercise: Combinatorial Testing

- a) List all of the 2-way (pairwise) combinations for the following input

x_1	x_2	x_3	x_4
0	3	6	9
1	4	7	10
2	5	8	11

How many 2-way combination do we have?

combination != permutation

When generating combinations, you do not care about the order of the elements.

When generating permutations, you DO CARE about the order of the elements.

(x_1, x_2)	(x_1, x_3)	(x_1, x_4)	(x_2, x_3)	(x_2, x_4)	(x_3, x_4)
(0, 3)	(0, 6)	(0, 9)	(3, 6)	(3, 9)	(6, 9)
(0, 4)	(0, 7)	(0, 10)	(3, 7)	(3, 10)	(6, 10)
(0, 5)	(0, 8)	(0, 11)	(3, 8)	(3, 11)	(6, 11)
(1, 3)	(1, 6)	(1, 9)	(4, 6)	(4, 9)	(7, 9)
(1, 4)	(1, 7)	(1, 10)	(4, 7)	(4, 10)	(7, 10)
(1, 5)	(1, 8)	(1, 11)	(4, 8)	(4, 11)	(7, 11)
(2, 3)	(2, 6)	(2, 9)	(5, 6)	(5, 9)	(8, 9)
(2, 4)	(2, 7)	(2, 10)	(5, 7)	(5, 10)	(8, 10)
(2, 5)	(2, 8)	(2, 11)	(5, 8)	(5, 11)	(8, 11)

$X1 \& X2 = 3 \times 3 = 9$

$X1 \& X3 = 3 \times 3 = 9$

$X1 \& X4 = 3 \times 3 = 9$

$X2 \& X3 = 3 \times 3 = 9$

$X2 \& X4 = 3 \times 3 = 9$

$X3 \& X4 = 3 \times 3 = 9$

total no. of 2-way combination (pairs) = $9 \times 6 = 54$

- b) Generate a pairwise combinatorial test suite for the input above.

No credit will be given for an exhaustive test suite.

Also, the more test cases you generate, the fewer points you receive.

	x1	x2	x3	x4
1	0	3	7	10
2	0	4	8	11
3	0	5	6	9
4	1	3	8	9
5	1	4	6	10
6	1	5	7	11
7	2	3	6	11
8	2	4	7	9
9	2	5	8	10