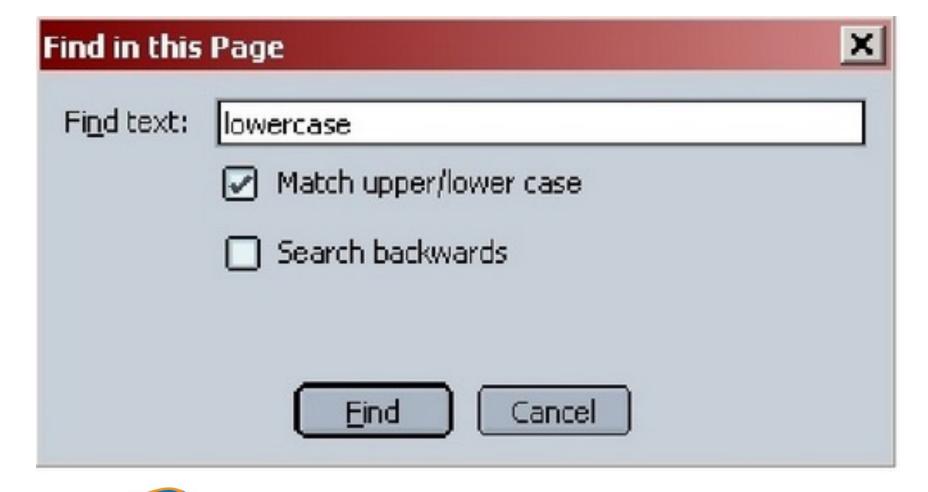
Pairwise Testing

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Testing A simple Find Dialog



Input

- Text: Lower / Upper / Mixed
- Match: Yes / No
- Direction: Normal / Backward
- Searched Text is found / is not found

$$=> 3 \times 2 \times 2 \times 2 = 24 \text{ TCs}$$



Pairwise Testing

- A black-box test design technique
- Test cases are designed to execute all possible discrete combinations of each pair of input parameters
- Helpful for applications with multiple input parameters



Arange variables and values

Order the variables with the most number of values is first and the least is last.

Text	Match	Direction	Searched Text
Lower	Yes	Normal	Found
Upper	No	Backward	Not found
Mixed			



Create a test suite

The three values of **Text** should be written two times each which is the number of values of the next variable i.e. **Match**

Text	Match	Direction	Searched Text
Lower	Yes		
Lower	No		
Upper	Yes		
Upper	No		
Mixed	Yes		
Mixed	No		



Create a test suite (cont.)

- Repeat the same for column 3
- □ Problem: There is no Yes-Backward and No-Normal → swap around the values in the second set in the third column.

Text	Match	Direction	Searched Text
Lower	Yes	Normal	
Lower	No	Backward	
Upper	Yes	Normal ***	
Upper	No	Backward 🕳	
Mixed	Yes	Normal	
Mixed	No	Backward	



Create a test suite (cont.)

- Repeat the same for column 4
- □ Problem: There is no Yes-Not found and No-Found → swap around the values in the third set in the fourth column.

Text	Match	Direction	Searched Text
Lower	Yes	Normal	Found
Lower	No	Backward	Not found
Upper	Yes	Backward	Found
Upper	No	Normal	Not found
Mixed	Yes	Normal	Found
Mixed	No	Backward	Not found 🕳



Create a test suite (cont.)

☐ All pairs in 6 cases vs. 24 cases in total

Text	Match	Direction	Searched Text
Lower	Yes	Normal	Found
Lower	No	Backward	Not found
Upper	Yes	Backward	Found
Upper	No	Normal	Not found
Mixed	Yes	Normal	Not found
Mixed	No	Backward	Found



Pairwise Testing Tools

- PICT 'Pairwise Independent Combinatorial Testing', provided by Microsoft Corp.
- ACTS 'Advanced Combinatorial Testing System', provided by NIST, an agency of the US Government.
- Pairwise by Inductive AS
- VPTag free All-Pair Testing Tool
- CAgen Fast combinatorial test set generation