

Assumptions: Every possible pair of activities must be offered at least once

Model: Create a table of each destination and their attractions

	Singapore	Bali	Bangkok	Hawaii
Water Park	✓			✓
Spa		✓	✓	
Golf		✓		✓
Food			✓	

Since there is only one destination for each pair, Singapore cannot offer golf, as it would clash with Hawaii. Repeating this for all pairs, the updated table is as follows:

	Singapore	Bali	Bangkok	Hawaii
Water Park (W)	✓	X		✓
Spa (S)		✓	✓	X
Golf (G)	X	✓	X	✓
Food (F)		X	✓	

Solution: The 6 pairs of activities are WS, WG, WF, SG, SF, and GF. WS, WF, and GF are not occupied by any destination so far. To satisfy the WS pair, either Singapore or Bangkok has to offer water park and spa. Thus, for the first option, If WS were offered by Singapore, Hawaii would be offering WF and GF, and the table would appear as such:

	Singapore	Bali	Bangkok	Hawaii
Water Park (W)	✓	X	X	✓
Spa (S)	✓	✓	✓	X
Golf (G)	X	✓	X	✓
Food (F)	X	X	✓	✓

Otherwise, if WS were offered by Bangkok instead, it would also be offering WF simultaneously. However, this leaves GF unoffered, as neither Singapore or Hawaii can offer both Golf and Food without conflicting with Bangkok's WF pair. Thus, this solution is rejected, as it is assumed that all pairs of activities must be offered.

	Singapore	Bali	Bangkok	Hawaii
Water Park (W)	✓	X	✓	✓
Spa (S)	X	✓	✓	X
Golf (G)	X	✓	X	✓
Food (F)	X	X	✓	X

From the two possibilities of the Water Park and Spa pair being offered, only Singapore can offer the WS pair while satisfying the assumption, thus Mr Smith chose the Hawaii tour, as it offered 3 of their preferences, while other destinations only offered 2 each.

Discussion: Without the assumption that each possible pair of activities must be offered at least once, the second option would not be rejected, thus the puzzle would have multiple solutions.