Design and Analysis of Algorithms — Lab

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Session 9: Backtracking

8-Queens

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Problem: Solve 8-queens problem. Place 8 queens in a chessboard so that no queen is under attack from any other queen. One such "safe" configuration of 8 queens is shown below.

	1	2	3	4	5	6	7	8
1			Q					
2					Q			
3								Q
4		Q						
5							Q	
6	Q							
7			Q					
8				Q				

1. Find any one safe configuration. Use backtracking to do exhaustive search for an answer in the state space of the problem.

2. Find all the safe configurations. Use pruning to speed up the search for the answer.