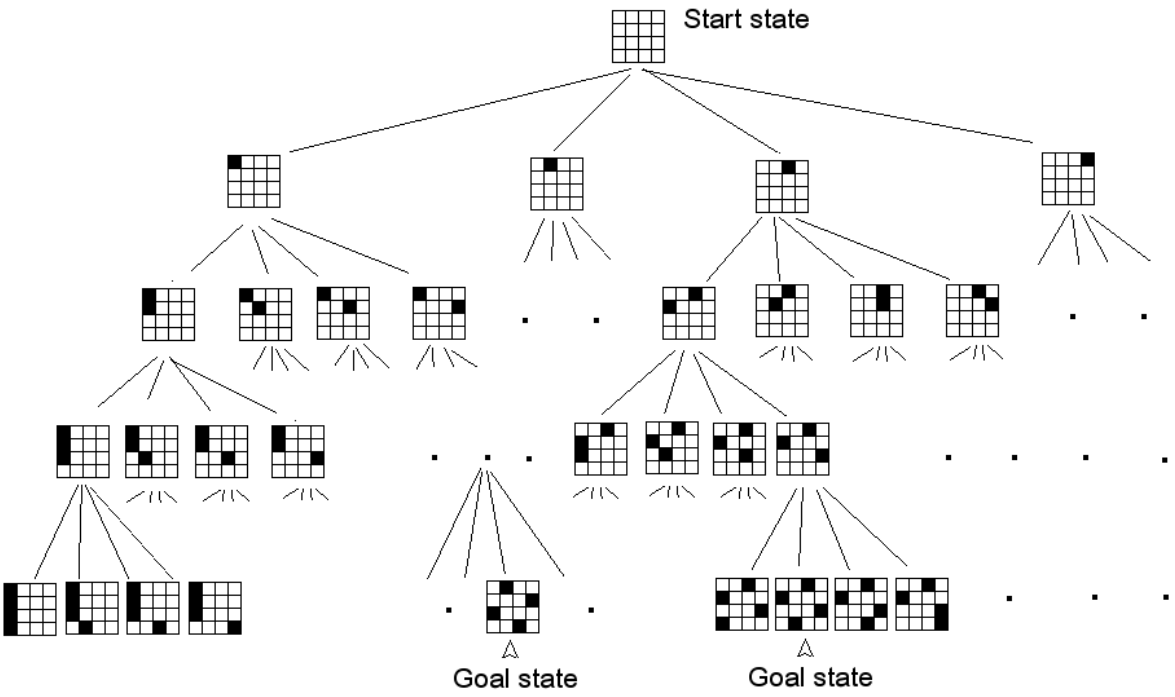
2802ICT

Assignment 1 hint:

Here is a search tree based on one possible placement strategy for the 4-queens problem:



The strategy we use here is we start with an empty board, and place queens one-by-one on each row (ie each row can only have one queen).

Now the size of the state space is easy to compute. In the 4-queens case, we have the size given by $1+4+4^2+4^3+4^4 = 341$

There are 2 goal states for 4-queens problem. They are indicated in the figure above.

Now, you can search for the solutions (goal states) using breadth-first-search or depth-first-search. Although in the assignment, you are only asked to implement the BFS, but it is **very easy** to also implement the DFS. You could contrast the efficiency of the DFS and BFS.