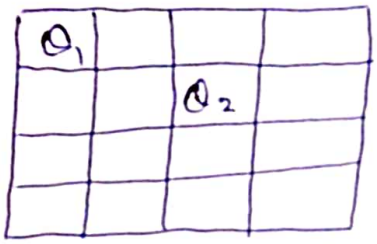
N- Queen Problem. (Backtracking)

Conditions :- (i) No two Queens should be placed in same Row

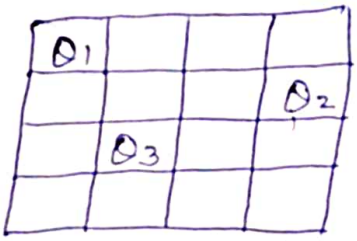
(ii) No two Queens should be placed in same Column

(iii) No two Queens should be placed in same diagnol.

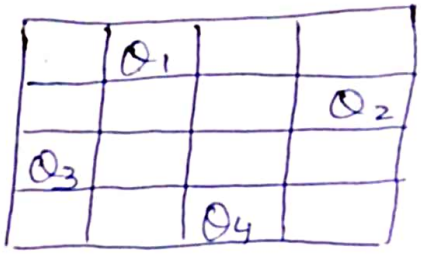
4- Queen / 8- Queen.



Q-3 Cannot be placed (Backtrack)

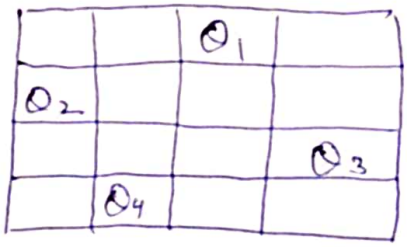


Q-4 Cannot be placed (Backtrack)



(All Queens placed Successfully)

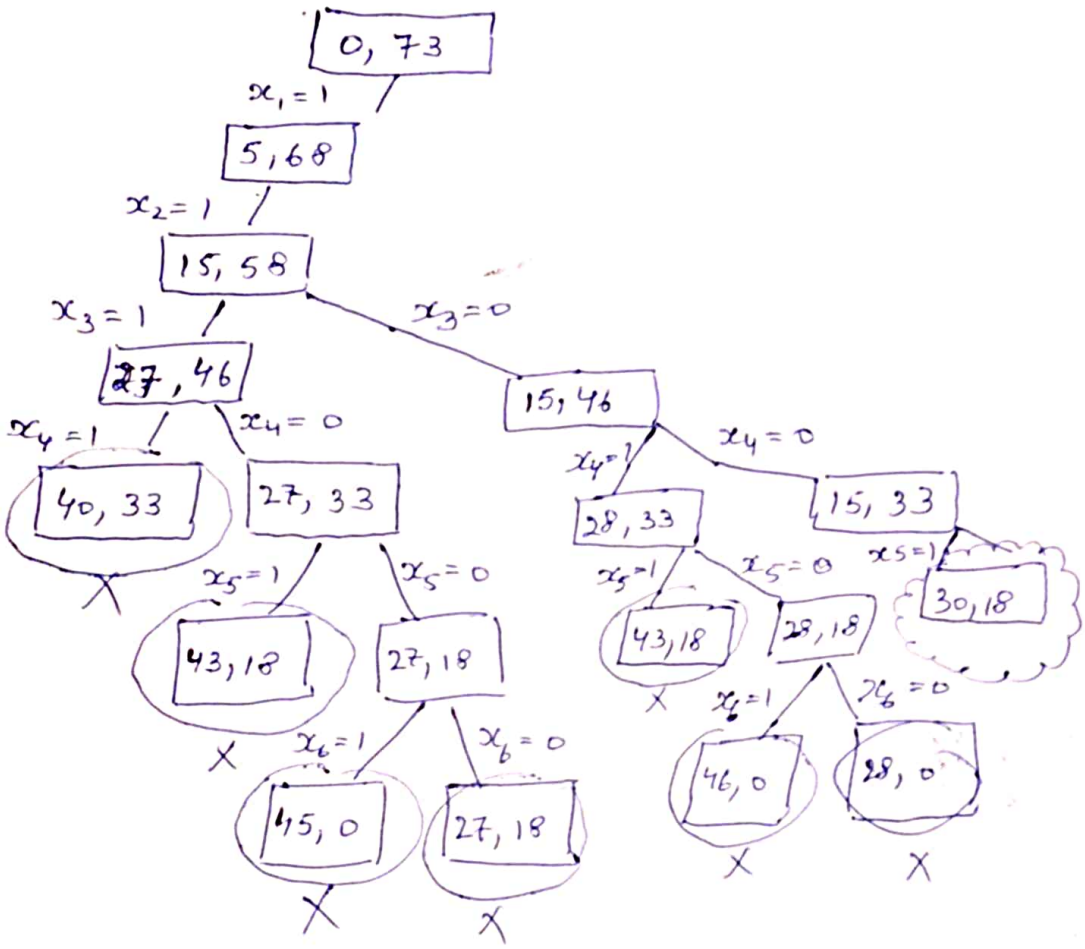
Another Solution (mirror image of existing Solution).



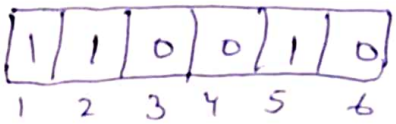
Subset Sum Problem

$w[1:6] = \{5, 10, 12, 13, 15, 18\}$

$n = 6$, Sum = 30 (Bounding Condition).



$$\sum_{i=1}^{K} w_i x_i + w_{K+1} \leq m$$

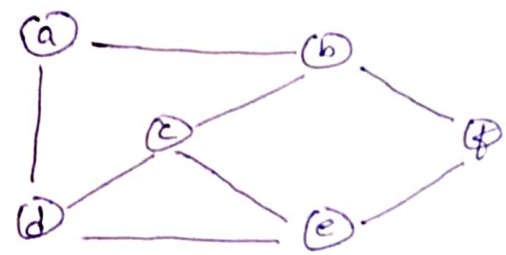


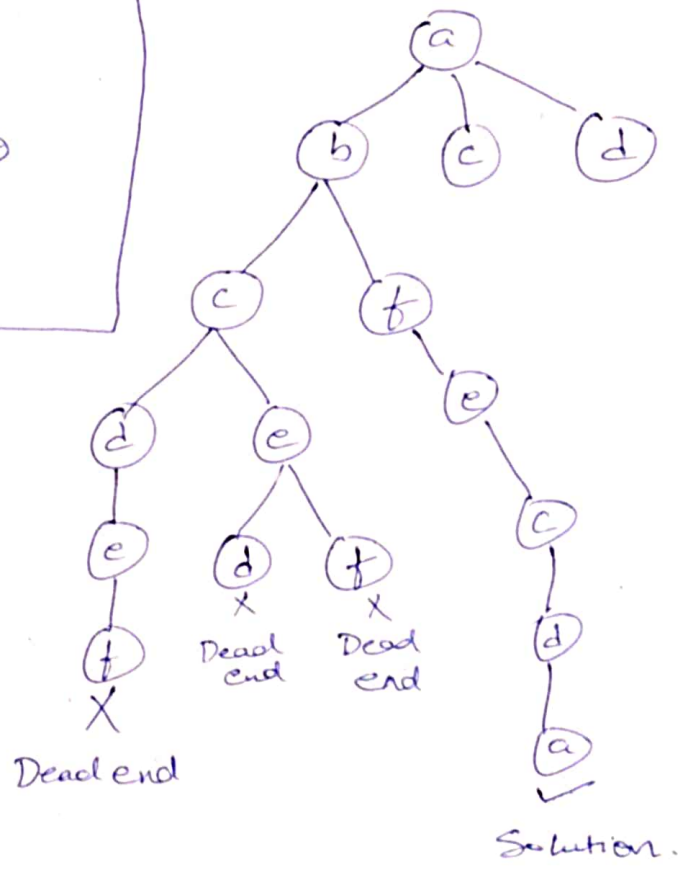
Hamiltonian Circuit Problem
(using Backtracking)

→ The problem is Concerned about finding Hamiltonian circuit/Path in a given graph.

Hamiltonian circuit :- It is defined as a Cycle that passes to all the Vertices of a graph exactly once except the Starting and ending Vertices that is the Same Vertex.

eg





Hamiltonian Graph: (1) a → b → f → e → c → d → a

(2) — ?