present in the grid row or column and accordingly decide the next value. If at any stage, we find an invalid entry we revert back to previous entry and try to alter it and keep on reverting back to its previous of previous entry if all options fail, then giving rise to a backtracking recursion problem.

Time complexity is $O(n^k)$. where n is the size of sudoku puzzle, usually 9 and k is the no. of blank spaces present in the puzzle. If only 1 blank space, $O(n^1) = O(9)$ any one of the 9 values can fit. If 2 blank spaces, for the first blank space 1-9 any value, and for that value again 1-9 any single value in 2nd blank; so worst case is 9x9.

Worst case complexity : $O(n^k)$.

n = size of sudoku puzzle

k = ~~size of~~ no. of blank spaces.