



DSA SERIES

- Learn Coding



Topic to be Covered today

N-Queens (51)



LETS START TODAY'S LECTURE

51. N-Queens

```
class Solution {
public:
    bool isSafe(int row, int col, vector<string> board, int n) {
        int dupRow = row;
        int dupCol = col;
        // upper left diagonal
        while (row >= 0 && col >= 0) {
            if (board[row][col] == 'Q')
                return false;
            row--;
            col--;
        }

        col = dupCol;
        row = dupRow;

        while (col < n) {
            if (board[row][col] == 'Q')
                return false;
            col++;
        }
    }
};
```

```

col = dupCol;
    row = dupRow;

    while (row < n && col >= 0) {
        if (board[row][col] == 'Q')
            return false;
        row++;
        col--;
    }

    return true;
}

void solve(int col, vector<string>& board, vector<vector<string>>& ans,
           int n) {
    if (col == n) {
        ans.push_back(board);
        return;
    }

```

```

        for (int row = 0; row < n; row++) {
            if (isSafe(row, col, board, n)) {
                board[row][col] = 'Q';
                solve(col + 1, board, ans, n);
                board[row][col] = '.';
            }
        }
    }
}

```

```

vector<vector<string>> solveNQueens(int n) {
    vector<vector<string>> ans;

```

```

    vector<string> board(n);
    string s(n, '.');

```

```

    for (int i = 0; i < n; i++) {
        board[i] = s;
    }

```

```
        solve(0, board, ans, n);  
        return ans;  
    }  
};
```




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THANK YOU