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**AI ASSIGNMENTS**

**Assignment – 6**

#include <bits/stdc++.h>

using namespace std;

const int N = 8;

bool isSafe(vector<int> &board, int row, int col) {

for (int i = 0; i < row; i++) {

if (board[i] == col || abs(board[i]-col) == abs(i-row))

return false;

}

return true;

}

void printBoard(vector<int> &board) {

for (int i = 0; i < N; i++) {

for (int j = 0; j < N; j++) {

if (board[i] == j) cout << "Q ";

else cout << ". ";

}

cout << endl;

}

cout << endl;

}

void solveNQueens(int row, vector<int> &board, int &count) {

if (row == N) {

count++;

printBoard(board);

return;

}

for (int col = 0; col < N; col++) {

if (isSafe(board, row, col)) {

board[row] = col;

solveNQueens(row+1, board, count);

}

}

}

int main() {

vector<int> board(N, -1);

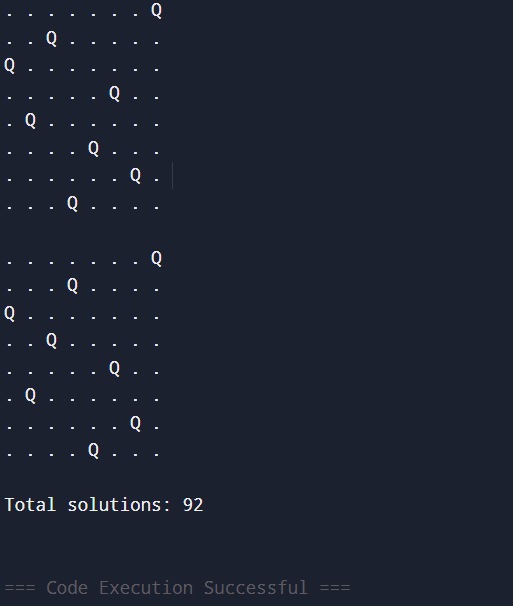
int totalSolutions = 0;

solveNQueens(0, board, totalSolutions);

cout << "Total solutions: " << totalSolutions << endl;

return 0;

}

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