Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

Department of Computer Science and Engineering (Data Science)

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Experiment no. 9

CODE:

main.c

```c
#include <stdio.h>
#define N 10
int attacked(int board[N][N], int row, int col, int n) {
    int i, j;
    //row
    for (i = 0; i < row; i++) {
        if (board[i][col]) {
            return 1;
        }
    }
    for (i = row, j = col; i >= 0 && j >= 0; i--, j--) {
        if (board[i][j]) {
            return 1;
        }
    }
    for (i = row, j = col; i >= 0 && j < n; i--, j++) {
        if (board[i][j]) {
            return 1;
        }
    }
    return 0;
}
```

```c
void solve(int board[N][N], int row, int n, int *count) {
    int col;
    if (row == n) {
        (*count)++;
        printf("Solution %d:\n", *count);
        int i, j;
        for (i = 0; i < n; i++) {
            for (j = 0; j < n; j++) {
                printf("%c ", board[i][j] ? 'Q' : '.');
            }
            printf("\n");
        }
        printf("\n");
        return;
    }
    for (col = 0; col < n; col++) {
        if (!attacked(board, row, col, n)) {
            board[row][col] = 1;
            solve(board, row+1, n, count);
            board[row][col] = 0;
        }
    }
}
```

```c
int main() {
    int n, board[N][N], i, j, count = 0;
    printf("Enter number of queens (max %d): ", N);
    scanf("%d", &n);
    // Initialize the board
    for (i = 0; i < n; i++) {
        for (j = 0; j < n; j++) {
            board[i][j] = 0;
        }
    }
    solve(board, 0, n, &count);
    if (count == 0) {
        printf("No solution found.\n");
    }
    return 0;
}
```

OUTPUT:

```
Enter number of queens (max 10): 8
Solution 1:
Q . . . . . . .
. . . . Q . . .
. . . . . . . Q
. . . . . Q . .
. . Q . . . . .
. . . . . . Q .
. Q . . . . . .
. . . Q . . . .

Solution 2:
Q . . . . . . .
. . . . . Q . .
. . . . . . . Q
. . Q . . . . .
. . . . . . Q .
. . . Q . . . .
. Q . . . . . .
. . . . Q . . .

Solution 3:
Q . . . . . . .
. . . . . . Q .
. . . Q . . . .
. . . . . Q . .
. . . . . . . Q
. Q . . . . . .
. . . . Q . . .
. . Q . . . . .
```

.
.
.
.
.
.

```
Solution 90:
. . . . . . . Q
. Q . . . . . .
. . . . Q . . .
. . Q . . . . .
Q . . . . . . .
. . . . . . Q .
. . . Q . . . .
. . . . . Q . .

Solution 91:
. . . . . . . Q
. . Q . . . . .
Q . . . . . . .
. . . . . Q . .
. Q . . . . . .
. . . . Q . . .
. . . . . . Q .
. . . Q . . . .

Solution 92:
. . . . . . . Q
. . . Q . . . .
Q . . . . . . .
. . Q . . . . .
. . . . . Q . .
. Q . . . . . .
. . . . . . Q .
. . . . Q . . .



...Program finished with exit code 0
Press ENTER to exit console.
```