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_8QUEENS.C - Code::Blocks 20.03
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MULTISTAGE_GRAPH.C x KNAPSACK.C x _8QUEENS.C x
1 // BE20F05F062 AKASH SHRIDHARAN
2 #include<stdio.h>
3 #include<math.h>
4
5 int board[20],count;
6
7 int main()
8 {
9     int n,i,j;
10    void queen(int row,int n);
11
12    printf(" - N Queens Problem Using Backtracking -");
13    printf("\n\nEnter number of Queens:");
14    scanf("%d",&n);
15    queen(1,n);
16    return 0;
17 }
18
19 void print(int n)
20 {
21     int i,j;
22     printf("\n\nSolution %d:\n\n",++count);
23
24     for(i=1;i<=n;++i)
25         printf("\t%d",i);
26
27     for(i=1;i<=n;++i)
28     {
29         printf("\n\n%d",i);
30         for(j=1;j<=n;++j)
31         {
32             if(board[i]==j)
33                 printf("\tQ");
34             else
35                 printf("\t-");
36         }
37     }
38 }
39
40 int place(int row,int column)
41 {
42     int i;
43     for(i=1;i<=row-1;++i)
44     {
```

```
C:\Users\akash\Desktop\5th_sem_books&PPTs\DAA\DAA-lab-works\_8QUEENS.exe
- N Queens Problem Using Backtracking -
Enter number of Queens:4
Solution 1:
    1    2    3    4
1    -    Q    -    -
2    -    -    -    Q
3    Q    -    -    -
4    -    -    Q    -
Solution 2:
    1    2    3    4
1    -    -    Q    -
2    Q    -    -    -
3    -    -    -    Q
4    -    Q    -    -
Process returned 0 (0x0)   execution time : 5.190 s
Press any key to continue.
```

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MULTISTAGE_GRAPH.C x KNAPSACK.C x _8QUEENS.C x
28 {
29     printf("\n\n%d",i);
30     for(j=1;j<=n;++j)
31     {
32         if(board[i]==j)
33             printf("\tQ");
34         else
35             printf("\t-");
36     }
37 }
38
39
40 int place(int row,int column)
41 {
42     int i;
43     for(i=1;i<=row-1;++i)
44     {
45         if(board[i]==column)
46             return 0;
47         else
48             if(abs(board[i]-column)==abs(i-row))
49                 return 0;
50     }
51     return 1;
52 }
53
54 void queen(int row,int n)
55 {
56     int column;
57     for(column=1;column<=n;++column)
58     {
59         if(place(row,column))
60         {
61             board[row]=column;
62             if(row==n)
63                 print(n);
64             else
65                 queen(row+1,n);
66         }
67     }
68 }
69
70
```

```
C:\Users\akash\Desktop\5th_sem_books&PPTs\DAA\DAA-lab-works\_8QUEENS.exe
- N Queens Problem Using Backtracking -
Enter number of Queens:4
Solution 1:
    1    2    3    4
1  -    Q    -    -
2  -    -    -    Q
3  Q    -    -    -
4  -    -    Q    -
Solution 2:
    1    2    3    4
1  -    -    Q    -
2  Q    -    -    -
3  -    -    -    Q
4  -    Q    -    -
Process returned 0 (0x0)   execution time : 5.190 s
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