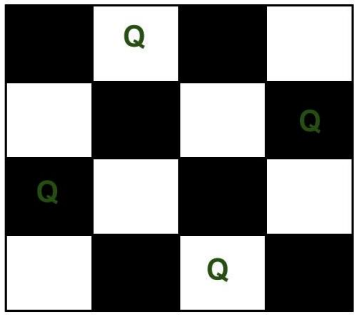
ARAB ACADEMY FOR SCIENCE & TECHNOLOGY & MARITIME TRANSPORT
College of Computing & Information Technology

Course	Artificial Intelligence CS366
Lecturer	Dr. Mohamed Farouk

Assignment (1)

Deadline 8 April 2021



The ***4-Queens Problem*** consists of placing four queens on a 4 x 4 chessboard so that no two queens can capture each other. That is, no two queens are allowed to be placed on the same row, the same column or the same diagonal. The above figure illustrates a solution to the 4-Queens problem. Keep in mind that you can generalize it to $n \times n$. It is required to implement the depth first search algorithm for this problem using a recursive strategy. The recursive function should print the solution if found in a binary format. The expected output is a binary matrix which has 1s for the blocks where queens are placed. For example, following is the output matrix for above 4 queen solution. Implement the problem using your preferred language. You should submit your code and a recorded video with voice to describe your code and the output screen.

```
{ 0,  1,  0,  0}
{ 0,  0,  0,  1}
{ 1,  0,  0,  0}
{ 0,  0,  1,  0}
```

Running code	Video	Discussion	Total
3 Marks	3 Marks	4 Marks	10 Marks