

# Kata 19 - Queen Threat Detector

Assignment  
125 - 300 minutes

✓ Status

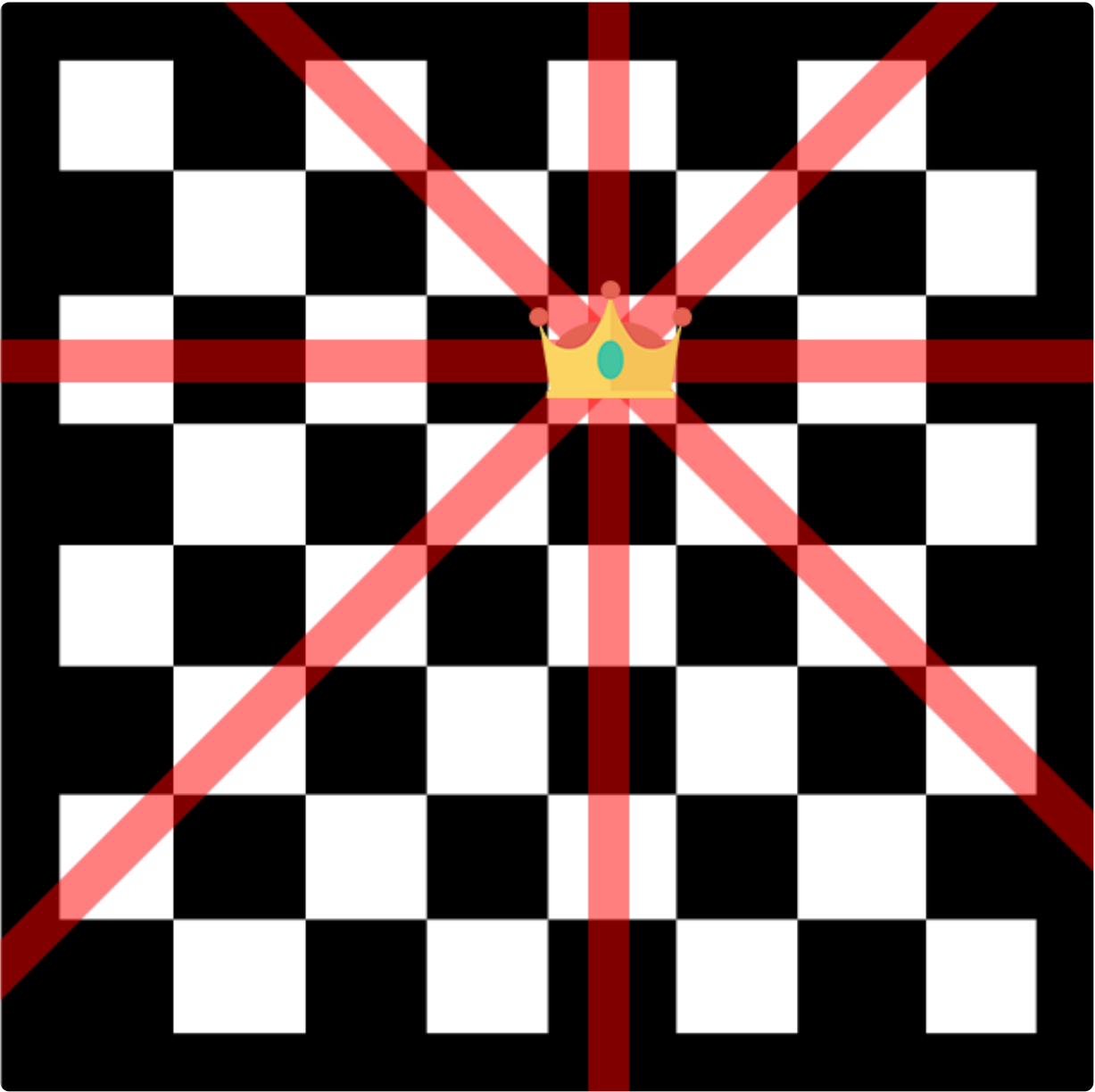
Complete

**STRETCH ACTIVITY**  
This activity is marked as stretch. We strongly suggest you come back to it if/when you've completed all the core exercises for the prep course.

In this exercise we will be writing an algorithm, to detect if two queens on a chess board can attack each other.

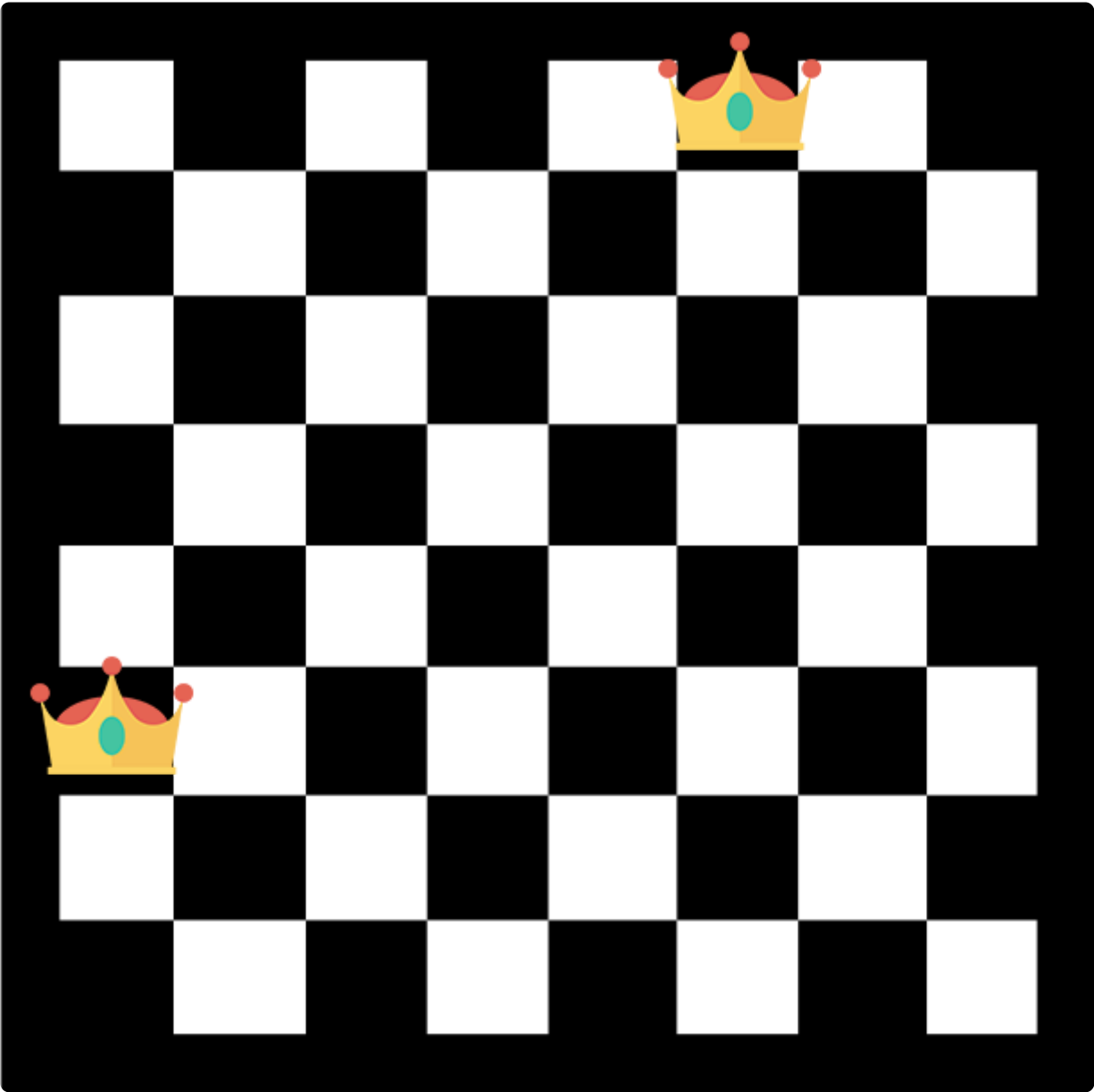
## Queen Threat Detector

A game of chess is played on an 8 column by 8 row board. In the game of chess, a queen can attack pieces which are on the same row, column, or diagonal.



In JavaScript, we can represent a chessboard using an 8 by 8 array (8 arrays within an array). For this exercise, our chess board will have 2 queens, and nothing else. A 1 in the array represents a queen on the corresponding square, and a 0 in the array represents an unoccupied square.

So the following chess board:



Would be represented in JavaScript like this:

```
[
  [0, 0, 0, 0, 0, 1, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [1, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0]
]
```

Our first challenge will be to write a function that generates a chess board like this. We will then write a function to detect whether or not the two queens are positioned so that they attack each other.

## Input

```
let whiteQueen = [0, 5];
let blackQueen = [5, 0];
let generatedBoard = generateBoard(whiteQueen, blackQueen);
console.log(generatedBoard);
console.log(queenThreat(generatedBoard));
```

## Expected Output

```
[
  [0, 0, 0, 0, 0, 1, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [1, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0]
]
true
```

Input

```
let whiteQueen = [0, 0];
let blackQueen = [5, 7];
let generatedBoard = generateBoard(whiteQueen, blackQueen);
console.log(generatedBoard);
console.log(queenThreat(generatedBoard));
```

Expected Output

```
[
  [1, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 1],
  [0, 0, 0, 0, 0, 0, 0, 0],
  [0, 0, 0, 0, 0, 0, 0, 0]
]
false
```

- Create a function `generateBoard` which will return a nested array representing the board, containing the location of two queens.
- Create a function called `queenThreat` that will indicate whether or not the two queens are positioned so that they attack each other.

Submit Your Work

- Browse to [gist.github.com](https://gist.github.com) and create a new gist.
- Copy-and-paste your code into the form
- Name the gist and the file appropriately and click `Create secret gist`.
- Finally, mark this activity as completed (at the bottom of this page) and please copy/paste the *entire* browser URL for your gist (from *gist.github.com*) into the text field.

✖ Cancel Submission

How well did you understand this content?

Thank you for your feedback



















Got most of it

Please give us some written insight into your feedback

# Prep Work

- › 1: Welcome
- › 2: Dev Environment
- › 3: Version Control
- › 4: Programming Intro
- › 5: The Browser
- ˘ 6: Katas

6 hrs + 29 hrs stretch 🏆

|                                                                                                                                   |   |
|-----------------------------------------------------------------------------------------------------------------------------------|---|
|  <u>Katas</u>                                  | ✓ |
|  <u>Kata 1 - Sum the Largest Numbers</u>       | ✓ |
|  <u>Kata 2 - Conditional sums</u>              | ✓ |
|  <u>Kata 3 - Vowels</u>                        | ✓ |
|  <u>Kata 4 - Instructors Names</u>             | ✓ |
|  <u>Kata 5 - Percent Encoded String</u>        | ✓ |
|  <u>Kata 6 - SmartParking</u>                  | ✓ |
|  <u>Kata 7 - In the Air Tonight</u>            | ✓ |
|  <u>Kata 8 - Repeating Numbers</u>             | ✓ |
|  <u>Kata 9 - Case Maker</u>                    | ✓ |
|  <u>Kata 10 - Multiplication Table</u>         | ✓ |
|  <u>Kata 11 - Bouncy Castles</u>               | ✓ |
|  <u>Kata 12 - The Great Codeville Bake-off</u> | ✓ |
|  <u>Kata 13 - Talking Calendar</u>             | ✓ |
|  <u>Kata 14 - Change Calculator</u>            | ✓ |
|  <u>Kata 15 - Organizing Instructors</u>       | ✓ |

- [`</>` \*Kata 16 - Case Maker II\*](#) ✓
- [`</>` \*Kata 17 - JS Object From URL Encoded String\*](#) ✓
- [`</>` \*Kata 18 - Square Code\*](#) ✓
- [`</>` \*Kata 19 - Queen Threat Detector\*](#) ✓
- [`</>` \*Kata 20 - Taxicab Geometry\*](#) ✓
- [`</>` \*Kata 21 - Number Guesser\*](#) ✓

- › 7: Stretch Project
- › 8: The Lab Manual
- › 9: Day One Prep
- › 10: Collab Tools Setup

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