

# Full Stack assessment - Valid Chess Moves

Hello,

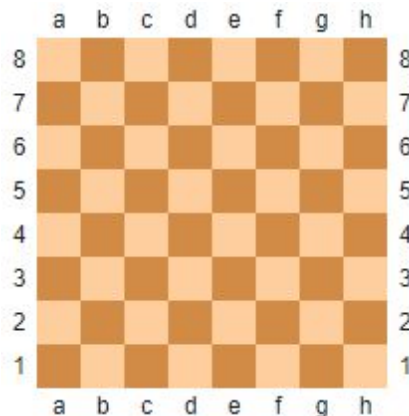
This is a test to give us a general idea on how you code and how well you would fit on our teams. **We expect you to use Angular or React for the frontend and Node.js for the backend (feel free to use TypeScript). We also expect you to finish this test within a week.** In this test we will be evaluating:

- Problem solving skills
- How well you use the language and tools
- Usage of Git
- Good practices, organization, architecture
- Unit tests
- And other things

This test involves implementing features in the frontend and backend.

## Challenge: Valid Chess Moves

Chess is a two-player strategy board game played on a chessboard, a checkered game board with 64 squares/cells arranged in an 8x8 grid. Algebraic notation in chess is a method to map cells using A to H as columns (left to right) and 1 to 8 as rows (bottom to top) as the following image:



In a chess game there are many different pieces. In this test we will be using the piece called Knight.

A knight can move either 2 squares horizontally and 1 square vertically OR 2 squares vertically and 1 square horizontally.

## Your tasks

Build an app using your preferred frameworks/libraries and use Git for version control.

User stories:

As a user I want to see a chessboard on the screen so I can interact with it

- The chessboard should work on any screen size
- The chessboard should be responsive so it will not break when the screen is resized

As a user I want to be able to select where the Knight starts by clicking/tapping anywhere on the board

- When selected the cell should be highlighted
- Only one cell can be selected at a time

As a user I want to be able to click/tap a button and have the app highlight all cells where the Knight can move in exactly 2 turns

- The app should make an API call to get the cells it has to highlight
- The Knight position should be sent to the API in Algebraic notation (D4, A5, H8, A1, ...)

As a developer I want the API to calculate possible movements and return them so I can access the result in the frontend

- The logic to calculate possible positions should be in the backend
- The backend should only accept the Knight position if it's in Algebraic notation (D4, A5, H8, A1, ...)

As a developer I want to be able to understand the project organization, architecture by reading a README.md file

- Create a README.md file with project details

As a developer I want to be able to understand how to contribute to the project and what tools I need so I can contribute

- Create a CONTRIBUTING.md file with project details

## Submitting your solution

You can upload your solutions on Github / Gitlab or any other Git provider and submit a link we can access or create a ZIP file with your solution (including .git folder) and send it to us.

Feel free to include comments on what problems you faced, if you got stuck somewhere, and what you thought about the test. Also feel free to contact us if you need to ask any questions.

## Reminder

We'll be evaluating the following areas:

- Problem solving skills
- How well you use the language and tools
- Usage of Git
- Good practices, organization, architecture
- Unit tests

So the better you do with that stuff, the more you'll impress us!



