

Online Multiplayer Chess Game

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Chess is a two-player strategy board game that is played on an 8x8 checkerboard. There is a set of rules that define the game, but an infinite number of possibilities in which the game can proceed depending on the moves made by the two players.

Tech Stacks used to create this projects are as follows :-

Node JS

HTML/CSS/JavaScript

Socket Programming

Why to Use Node.js For Backend Development?

JavaScript is the universal language for building web applications. It is used in frontend (client-side) and backend (server-side) development as well. But the truth that the beauty of the front-end relies on the back-end can't be denied. This is when NodeJS comes into the picture. NodeJS is the best choice for server-side application development due to its vast and versatile features. Popular companies like Uber, PayPal, Netflix, Walmart, Twitter, LinkedIn, and even NASA use NodeJS for their server-side development.

What is NodeJS?

NodeJS is an event-driven JavaScript runtime built on Chrome's V8 engine that is used to build traditional and scalable server-side web applications and back-end APIs (Application Program Interfaces). It was developed by Ryan Dahl in 2009, who was inspired by Gmail for having push capability and building real-time applications. Approximately, 36.42% of developers use NodeJS for its libraries, tools, and frameworks. It is open-source and follows a "Single-Threaded" runtime environment.

Single-Threaded refers to handling multiple clients simultaneously. NodeJS also offers speed in client-server communication and data processing. Developers can also share code and can reuse it for both the frontend and backend parts of the application which makes it worthy to use.

Working of NodeJS :-

NodeJS is event-driven and single-threaded which means the server contains a single thread that is processed one after another. Here, thread means a series of operations that the server needs to perform. Whenever there's a request made from the client, the server handles it and here that server is NodeJS which handles it with a single thread. Parallely all the requests are made on the server and a response is given to multiple clients at the same time. It follows non-blocking I/O which means whenever there's an input made, the server doesn't block it but instead responds to it one by one. Here, when one request is about to complete, it starts working on another request (callback function)

till the time the first request is being responded to, which ultimately makes it fast.

NodeJS follows two concepts:

1. Non-Blocking I/O – NodeJS works on multiple requests at a time made at the client-side, and doesn't block any input request when another is being responded to.
2. Asynchronous – When we receive another request, it resolves it and makes it available for another request.

Installing NodeJS -

Step 1. Download NodeJS from its official website

<https://nodejs.org/en/>

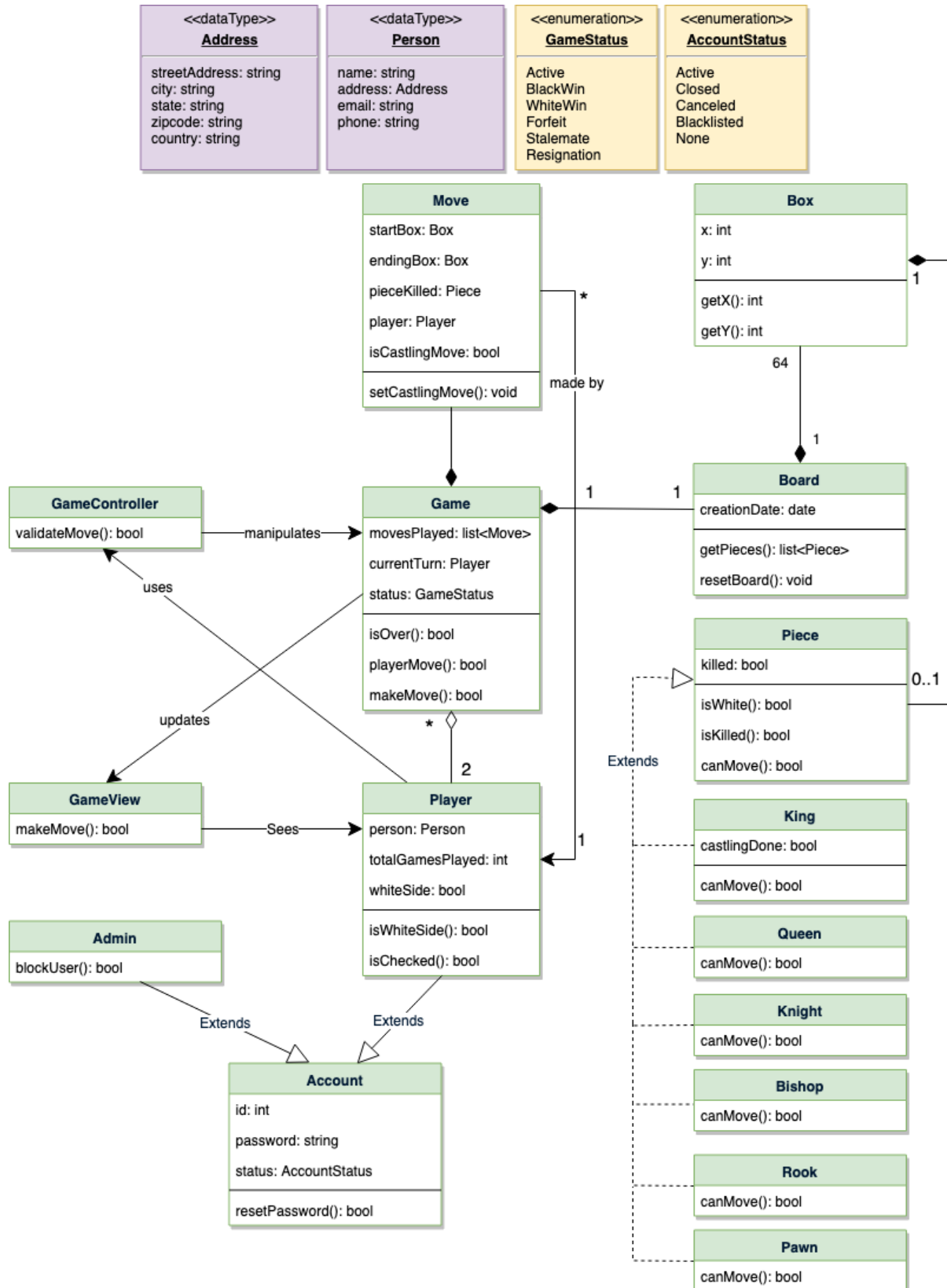
Step 2. Install it step-by-step by clicking next.

Step 3. Once, NodeJS is installed, you can check its version

Step 4. Go to the Command Prompt and locate the folder where the NodeJS application exists using “cd path”

Step 5. Type “npm -v” which tells you the version installed in your system. Also, it throws an error in case NodeJS is not installed.

Chess Game Class Diagram :-



Chess Game ER Diagram :-

