



AI CHESS GAME

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Problem Statement



AI Chess game is an gaming application in which the computer uses artificial intelligence to analyze its moves and the moves of the player and deduces the most effective action it can perform in order to defeat the player.

Introduction



The project is about ‘Designing a Mobile App for CHESS GAME using AI.

It implements a classic version of Chess with AI. This system supports following users:

- a. **Player vs Player**(allows two users or players to play the game interactively from remote locations.)
- b. **AI vs Player**(allows the user or player to play the game with AI)

Introduction



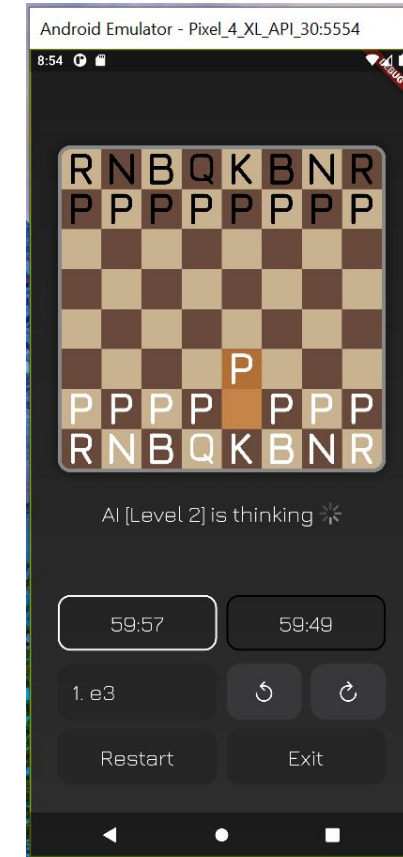
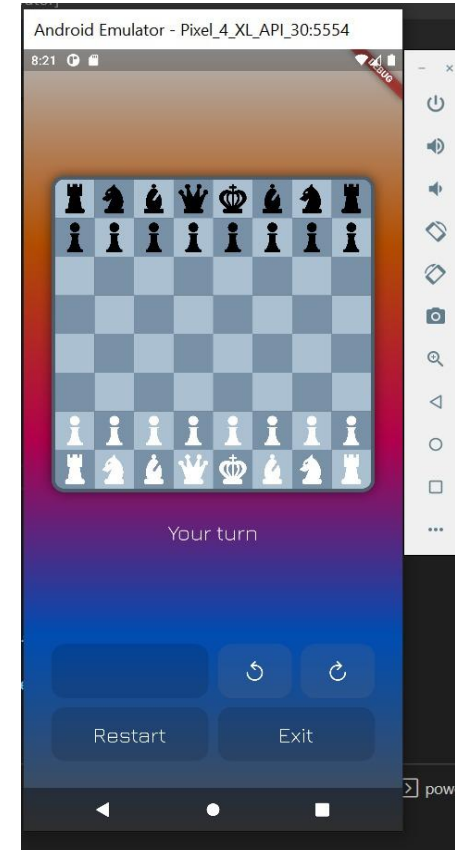
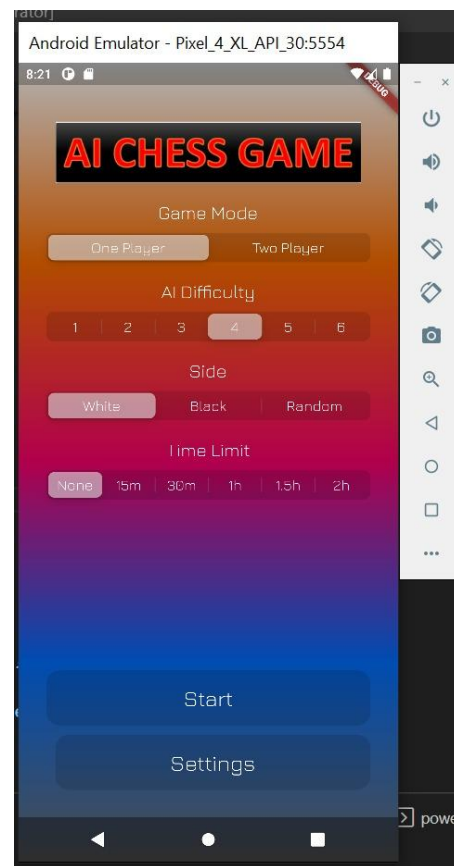
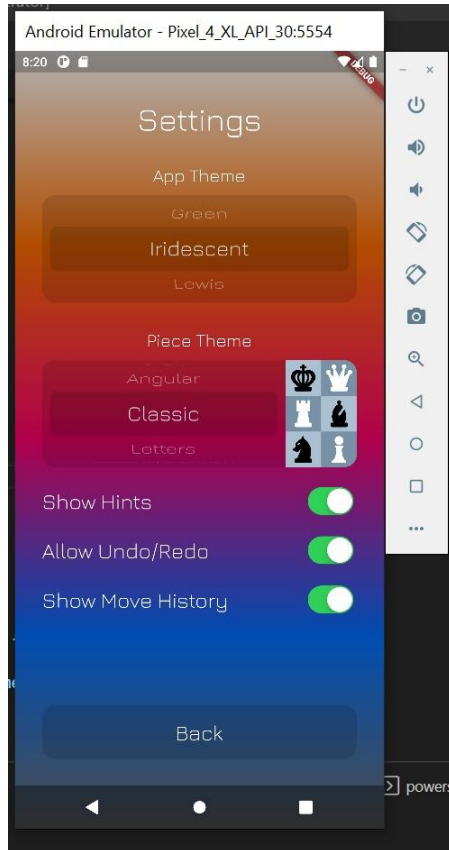
Functionalities under Player vs Player

- i. Move history can be checked.
- ii. It has a timer.
- iii. It has a undo and a redo option.

Functionalities under AI vs Player

- i. It has difficulty Levels ranging from 1-6 which the player can choose from.
- ii. It has a timer.
- iii. It has a undo and redo option.
- iv. Can choose which side you wanna play, Black, White or Random.

Design/Layout of the Application





Tools and Technologies

- **Flutter** - Google's independent, open source, user interface software development kit for creating application used on mobile, desktop and web platform.
- **Dart** – is the object oriented programming language designed for client development, its stable and high performance and its syntax is similar to that of java.
- **Android Studio** – is the official IDE(integrated development environment) for Google's android OS, designed specifically for android development.
- **Android emulator** – is Android virtual device(AVD) represents specific android device and provides all functionality of real device.



Tools and Technologies

- **Visual Studio Code** – source code editor, it is platform independent and is made by Microsoft and includes support for debugging, syntax highlighting, intelligent code completion, etc.
- **SDK manager** – command line tool that allows you to view, install, update and uninstall packages for android sdk.
- **GIT (Global Information Tracker)** – software for tracking changes in any set of files and coordinates work among programmers and also collaboratively develops source code.



Relevance of the Project

AI Chess game is can be played by single player unlike traditional chess game and thus the player can indulge in this application for recreation or to improve his/her expertise as AI is far superior to human in performance, accuracy, reliability, consistency and efficiency. This project also offers player vs player option as an additional functionality. There are a lot of benefits to be conferred for an individual who plays chess. These include improving intelligence, empathy, memory, problem-solving, and creative abilities. The cognitive and theoretical challenges that AI chess presents enables this vast array of abilities to develop. Because many parts of the brain are working together, the player is able to retain all these benefits
It serves as an portable game with high levels of challenges that support critical thinking and also as means of leisure activity.



Conclusion

- Artificial Intelligence is a revolutionary phenomenon, and it has undoubtedly changed the landscape of chess, unlike many other platforms that are lucky to be embraced by AI. The impact of Artificial Intelligence on chess can be argued with both pros and cons, with spectrums having valid points.
- However, it is undeniable that the influence, the hype, and the excitement generated by AI are magnificent. In the future, Artificial Intelligence has great potential in the field of chess. The modern developments and advancements in chess engines are increasing rapidly. We can have much greater feats of accomplishments in the modern world of chess.



Future enhancements

- Future enhancements include newer, better and more efficient & challenging algorithms for AI based chess applications.
- AI versus AI platform for intuitive learning experience.



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