

## **ChessMates**

Core Four

EC327, Spring 2019

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John Mikulskis (*jkulskis*), Mark Tony (*marktony*)

Github:

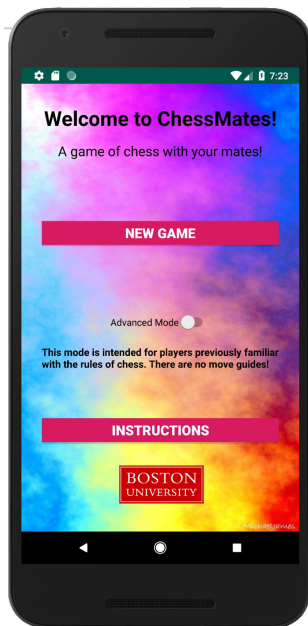
<https://github.com/jkulskis/chessAndroid>

Video:

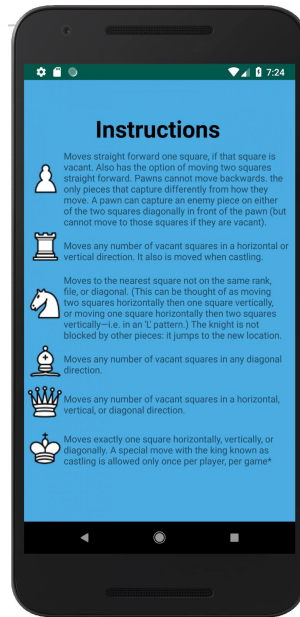
<https://drive.google.com/file/d/1MJvromQm8Buifa1kFTK5qoXMKj4WRJZ0/view?usp=sharing>

*App submitted to Google Play marketplace, awaiting approval*

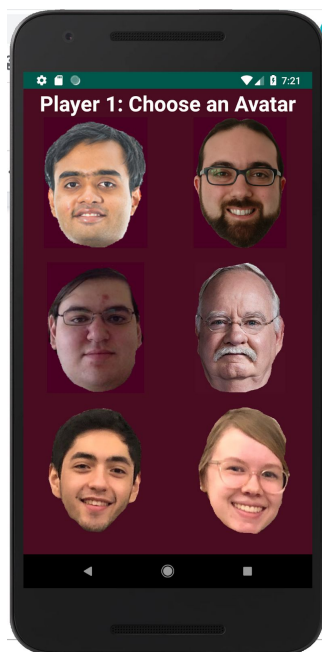
## 1.0 Software Architecture



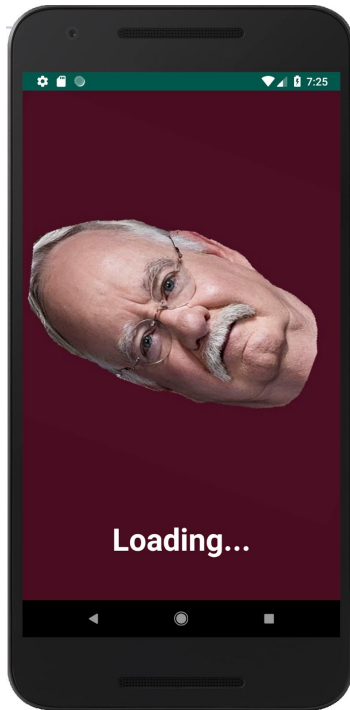
The home page includes a game launch button, an instruction page button, and a button to choose whether advanced game mode is turned on or off. This page uses a bright array of colors to engage the user, and proudly shows the Boston University logo.



The instruction page gives a brief overview on how the different chess pieces are able to move, and how they can capture other pieces.



The game launch button then leads to a page where the user and a second player may choose their game avatar from various pictures. The picture options include this class's professor, some teaching assistants, some project group members, and the university president.



Once avatars are chosen, an animated loading screen appears featuring a spinning picture of President Brown.



After loading, the game board launches and the user is able to begin playing. Because the app is “pass and play” style, the game board flips in between moves so that the second player does not have to hold the phone upside down. Captured pieces appear next to the player’s icon. Once a piece reaches the far end of the board, the user can choose a new piece icon.

## 2.0 Overview

This app is a basic game of chess. It is meant for users who are generally familiar with the game as it does not provide a tutorial regarding the rules of the game. However, it does provide a general instruction page and optional move guides for the user. The “advanced mode” option turns off move guides but still restricts the chess pieces to valid moves. The app allows the user to choose an avatar that will represent them during gameplay. It is a “pass and play” style game, meaning that there is not an option to play against an AI or other remote users. The game board is color coded to assist the user in understanding what is taking place during gameplay: a blue square indicates the current selected piece, green squares are valid move placements (in “easy mode”), a pink square indicates a check has taken place, and a red square means one of the sides has achieved checkmate and that the game is over. The board also rotates in between plays so the device can be easily passed between players without needing to be held upside down. It is ideal for those who enjoy playing phone games and want to improve their chess strategy. Additionally, it is appealing specifically to Boston University students as the homepage includes the BU logo, and the avatar icons are pictures of faculty and students at the university.

### 3.0 Component Description

*Lead.* Coordinated efforts and tasks for things that members failed to self-delegate. Coordinated meetings to discuss project progress, what issues are going on, and what should happen next. Contributed ideas to improve the app both in terms of gameplay and marketability.

*GUI.* Without relying on an instruction screen, ensured that the user will intuitively know how to use the app. Made buttons clear and concise. Ensured user could not choose to move pieces to an invalid location. Found appealing images for the home page, avatar icons, and game pieces.

*Interface.* Set up Github for code sharing. Ensured that the homepage lead to the avatar page, which in turn lead to the game board. Coded chosen icons to carry over to game screen. Playing game to ensure functionality, look for bugs.

*Processing.* Coded possible moves for each piece type. Coded color changing squares with various meanings on board. Commented code for readability.

*Documentation.* Recorded timeline of progress. Documented completed tasks and approximate effort contributed by each member. Outlined, organized, and wrote report with input from all members.

### 4.0 Task Distribution and Assessment

Group Member	Tasks	Effort
Natalie	Writing report/organizing project; documenting app components, describing code processes, writing report	15%
Jared	Front-end development; making the app appealing, adding images and avatars Back-end development; adding "advanced mode" Creating README file	15%
Ethan	Front-end development; making the app appealing, adding images and avatars Back-end development; adding "advanced mode" and instructions page.	15%
John	Back-end development; developing general structure of working chess game; pieces, board, moves, etc. Front-end development; allowed both players to choose avatars, included loading screen	50%
Mark	Recording and documenting software architecture; Edited Report; Uploaded to Google Play	5%

Important to note that previously assigned roles were not strictly adhered to, and that the project more closely resembled one coherent group effort with each individual working on smaller specific tasks.

## **5.0 Project Timeline**

**April 10** - Switched project from Connect 4 to Chess for a more complicated project

**April 15** - Completed working chess board

**April 16** - Added chess piece visuals

**April 17** - Coded valid piece moves, improved chess board graphics/colors

**April 20** - Check/checkmate errors fixed; back-end of app is mostly finished

**April 23** - Added colors to chess board and checkmates (blue square for selected piece, green squares for valid moves, red square for checkmate, pink for check)

**April 24** - Began adding images, avatars for user; fixed main menu bugs and added graphics

**April 26** - Added “advanced mode” which removes move guide

**April 27** - Included loading screen between home page and game board, animate spinning image on loading screen

**April 30** - Programmed game board to flip for ease of access when passing phone between player, allowed both local players to choose avatars

**May 1** - Added instruction page from home screen to increase user accessibility

**May 2** - Development team initiated process for Google Play release in near future for Android Users.