How to Play Backgammon Game

Setup

This should only need to happen before the first time you launch the game

- **Download python. You can do this from appsAnywhere** (if you do this, try install anaconda 3.9.12 as its what I'm using, this isn't a necessity though).
- Option 1: Unzip the backgammon.zip folder
  - o On Mac:
    - ▪ Two-finger click the backgammon folder
    - ▪ Go down to services
    - ▪ Open folder at terminal
  - o Otherwise:
    - ▪ Open up the command line (terminal/ command prompt)
    - ▪ Use the "cd" command to traverse to the folder
    - ▪ E.g. if your folder is saved in downloads:
      - • Cd downloads/backgammon
    - ▪ Once you've navigated to backgammon, type "dir" into the command prompt and ensure you see "Code", "Images" and "requirements.txt" in there
      - • If not, but you see something like "OpenBG" or "OpenBGV2", use the "cd" command to navigate there as well. Run the 'dir' command again and ensure you see Code, Images and requirements.txt. if not, send me a photo of what you see and I'll try sort it out
    - ▪ Depends on your folder structure – I can call and help you with it if needed
- Option 2: Download from git
  - o URL: https://github.com/w1ll-farmer/backgammon
  - o Can either download as zip or clone from command line:
    - ▪ Go to termina/ command line/ command prompt
    - ▪ Type: git clone git@github.com:w1ll-farmer/backgammon.git
      - • This will only work if you have git set up on local machine. If not, easier to download zip from git or get me to send it to you directly
- Paste the following into terminal and press enter

pip install -r requirements.txt

- Like this:

```
(base) williamfarmer@MacBook-Air-578 backgammon % pip install -r requirements.txt
```

- Wait until the terminal window prompts for input:

```
(base) williamfarmer@MacBook-Air-578 backgammon %
```
  - o
- Then enter this:

```
(base) williamfarmer@MacBook-Air-578 backgammon % python Code/main.py
```
  - o

- o After pressing enter, wait for a little bit. You should eventually have a window open. This is the game!
- Here's what it looks like when I do it on the command prompt on a library windows pc. Note how the first time I tried to pip install -r requirements.txt it didn't work because I needed to navigate into the OpenBGV2 folder.

AIs

- There are currently different Ais of varying ability. For the purpose of the project I won't disclose the difficulty of each AI, but here are the names of them:
  - o RANDOM
  - o EXPECTIMAX
  - o GREEDY
  - o GENETIC
  - o ADAPTIVE
  - o DEEP
- To play a certain difficulty, in the step above type USER GENETIC after python Code/main.py to play against the legendary difficulty AI.
  - o As follows, for random AI type USER RANDOM afterwards, USER EXPECTIMAX after for expectimax AI and USER GREEDY for greedy AI
  - o For example:

  - o
  - o **CAPITALS MATTER. If you get an error, let me know asap and copy the error message to send to me**
  - o **If it doesn't work with python Code/main.py, try again with python3 Code/main.py** if this doesn't work, send me a photo and I'll sort it out.

Playing the game

- If you followed the steps above, you should always be the white player.
- The game might take a second to boot up the first time, should be much quicker from then onwards
- The first dice roll is automatic and determines who plays first.
- After the opponents turn, you may see a square with a number in on the left side. That is the doubling cube. Click the doubling cube to offer a double to the opponent.
- If you don't want to double, click anywhere else. This will trigger the dice roll.
- If the opponent doubles you, you will get a pop up. To accept the double, click the tick. To reject the double (and forfeit the game) press the X
- Once you've rolled your dice, all available pieces will be highlighted green. To move a checker, click the checker you want to move and then use the left or right arrow key. The left arrow key uses the left die, and the right arrow key uses the right die.
  - If you get a double, you'll be able to use the left arrow twice and the right arrow twice. If you get stuck in a double, try using the other arrow key.
- You should hold the click until you press the arrow key. Once you've pressed the arrow key, release your hold on the mouse and the arrow key. This will update the screen.
  - You'll note that the places you can move a piece too will be highlighted when you're clicking on it. This is just to indicate the possible moves.
- **There is no undo system yet** – sorry its just not assessed and will waste time that I need to put towards other parts of my diss. If I have more free time over easter I'll try get one functioning.
- Sometimes there may be 'ghost' pieces that stay highlighted even after they've been moved; this is a bug. The game won't let you move them as the bug is purely visual. Sorry if this causes confusion.
- Once all of a player's pieces have been borne off, the score will update and the board will immediately reset for the next game in the match. If you'd rather not play all of the games at once, you can take note of your score and quit the game
  - To continue playing from what the score was, launch the program with the following statement in the command line:
    - Python Code/main.py USER {AI} {WhiteScore} {BlackScore}
    - Where {AI} is the AI you want to play
    - {WhiteScore} is the score of the white player from the incomplete match
    - {BlackScore} is the score of the black player from the incomplete match
    - E.g. Python Code/main.py USER DEEP 2 0 will launch a game against the DEEP AI with the score 2-0 to the user
- The matches are played to 25 points as this is the format of the world championships

Again, thank you so much for helping out with this. If you encounter any problems give me a call or text and I'll try sort it for you.
Phone number: 07465410238

Cheers,
Farmer