

Levels

When we set up levels initially, we can choose from level 0 to 4 by supplying it to the command line. In this case, if the scriptfile1 and scriptfile2 are not provided, level 0 will use sequence[1-2].txt in default. Moreover, we might want to come back to the level we previously were on. In this case, the game will resume to read the file from where we stopped (i.e. the sequence file has 6 blocks and we only have used 3, when we come back we will get the 4th block as the next block).

Changing the levels would change the level counts on the displays but note that it will be actually applied the upcoming turn (the block that was created before changing level keeps their own level)

Playing the Game

Movement commands will be used to play the game and move blocks around, such as 'right 5', 'left 4', 'down 2' and 'clockwise 2'. Note that for most commands that take in integers, if no integer is entered, 1 will be used as a default. Using these commands, the players can move the block to the location they want and rotate it as many times as they want, as long as the block in motion stays within the borders of the game. If a command would take the block out of bounds, the game does the command as much as it can without taking out of the borders. For example, if 'right 100' is entered as a command, the game moves the block to the right as much as possible and stops there. Once the block is in the desired location and rotation, the player can use the command 'drop' optionally with an integer afterwards in order to drop the current block to the bottom of the grid and spawn a new block or multiple blocks. If the block is still in the air when the 'drop' command is used, then it falls down until it makes contact with the "ground" or another block. Also, depending on the integer after the 'drop' command, it will spawn one or more blocks (as much as the integer given). The blocks that spawn in between will be automatically dropped where they spawn (the left side of the game).

When playing the game, instead of entering the full command, players may also enter commands that can be auto completed, such as 'rig' instead of 'right'. If the players' commands do not match with any of the commands, then the game suggests the player possible commands to choose from.

Changing the Level

While playing the game, if the players want to increase difficulty for higher scores, they may do so by using the command 'level[up|down]', this command can also take multiplicities from 0 to 4 and any multiplicities above than 4 would be considered as maximum level anyway.

- Level 0 : the game reads the sequence[1-2].txt files and dispenses the blocks in that specific sequence (norandom [file] and random are not expected in this level).
- Level 1 : the game dispenses the blocks in biased manner as described in biquadris.pdf (norandom [file] and random are not expected in this level)
- Level 2 : the game dispenses the blocks in equal probability (norandom [file] and random are not expected in this level).

- Level 3 : the game dispenses the blocks in biased manner as described in biquadris.pdf plus they have special rule applied for each movements (right, left, clockwise, counterclockwise, down) - blocks moves down additional 1 block (but this not drops the block)
- Level 4 : the game dispenses the blocks in the same probability as in Level 3 and also has the same special rule applied as same and in level 3 but in addition it also creates a 1x1 brown block at the center column of the game every 5th consecutive drop without any removal of rows.

Using Special Actions

When players destroy multiple rows, they will gain access to special actions, which can be useful for defeating the opponent. They can be used by writing the respective commands into the terminal.

Note that the special actions must be set by the user (command list does not recognize special action calls: e.g. force I, heavy, and blind)

- Heavy : heavy is applied to the opponent player for 1 turn (until they drop) this drags down 2 rows maximum for each left and right movements and if they can't drop 2 rows, then it drops the block in place. For this penalized drop, special action is not triggered even if they cleared multiple rows by the heavy's drop.
- Blind : blind hides the center portion of the grid for one turn (until the opponent drops the next block).
- Force: force changes the next block that the opponent of the current player will get. If the block cannot be spawned in the initial spot, then the opponent loses.

Command-line Interface

Command lines that are given beside the ./biquadris can set the program before running the program.

- `-text` : text only turns the text display and not the graphic display.
- `-seed xxx` : set the randomness, same seed will result same already result same blocks
- `-scriptfile[1-2] xxx` : uses xxx instead of sequence[1-2].txt
- `-startlevel n` : starts the game at level n, 0 by default.

Demo:

To test our program, we included sample sequence1.txt sequence2.txt cmdlist1.txt for the sequences of the block and command lists for the sequence command. Please take a look at them.