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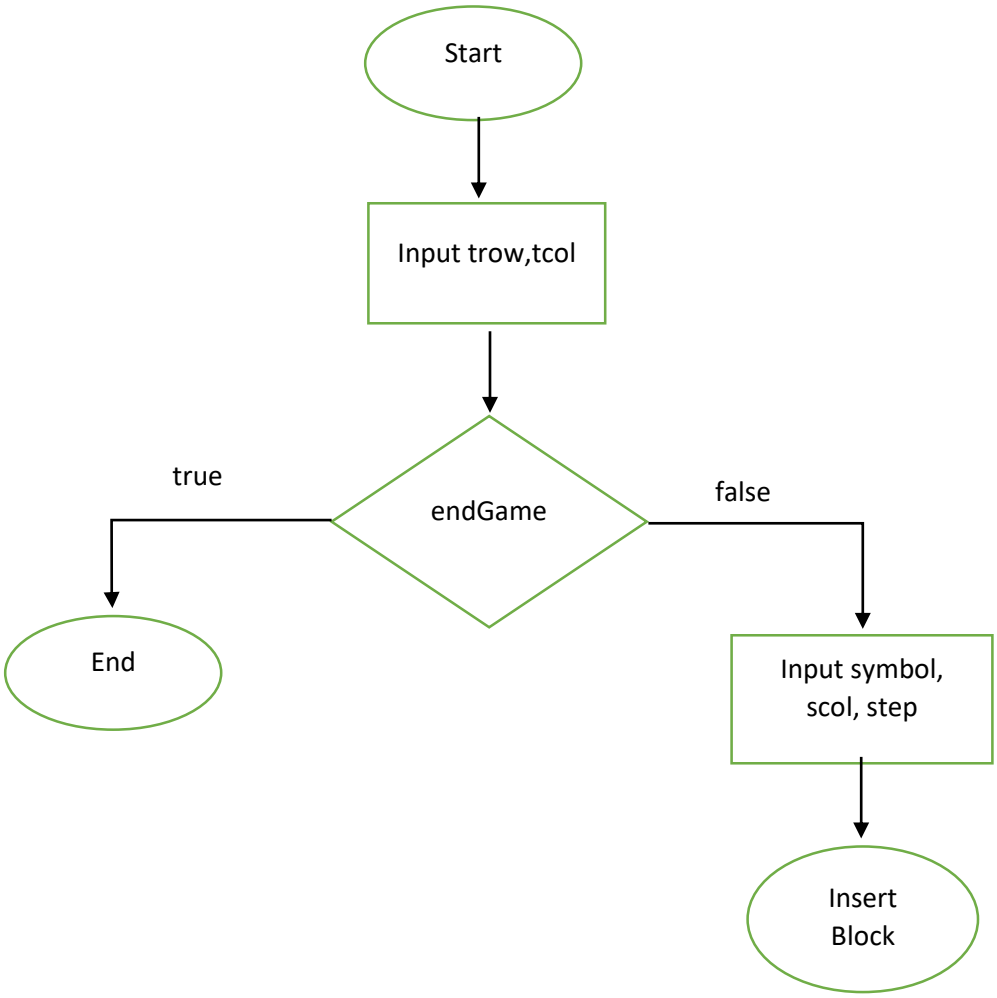
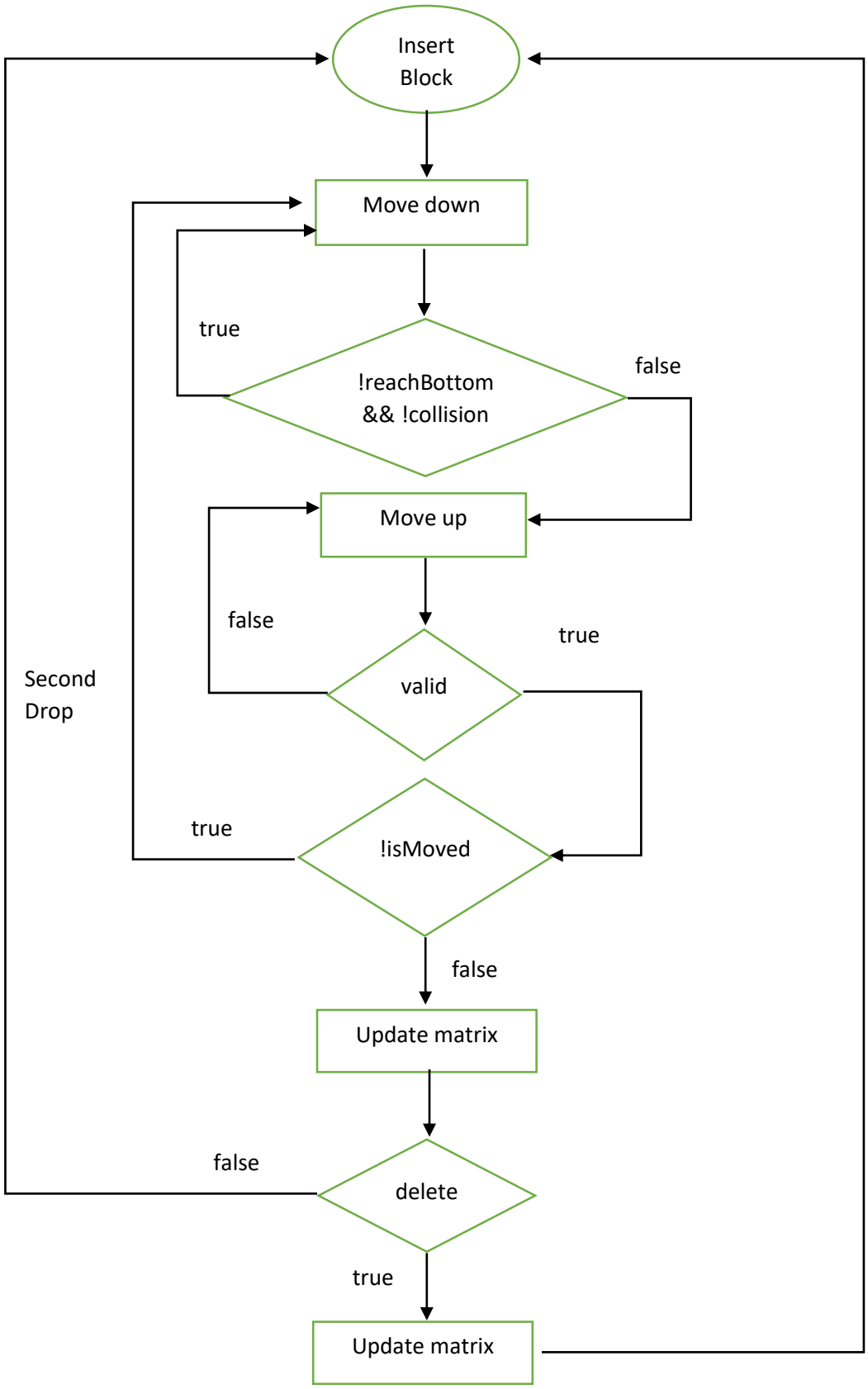
Program Flowchart




Insert
Block
Move down
true
!reachBottom
&& !collision
false
Move up
false
valid
true
Second
Drop
true
!isMoved
false
Update matrix
false
delete
true
Update matrix

Detailed Description

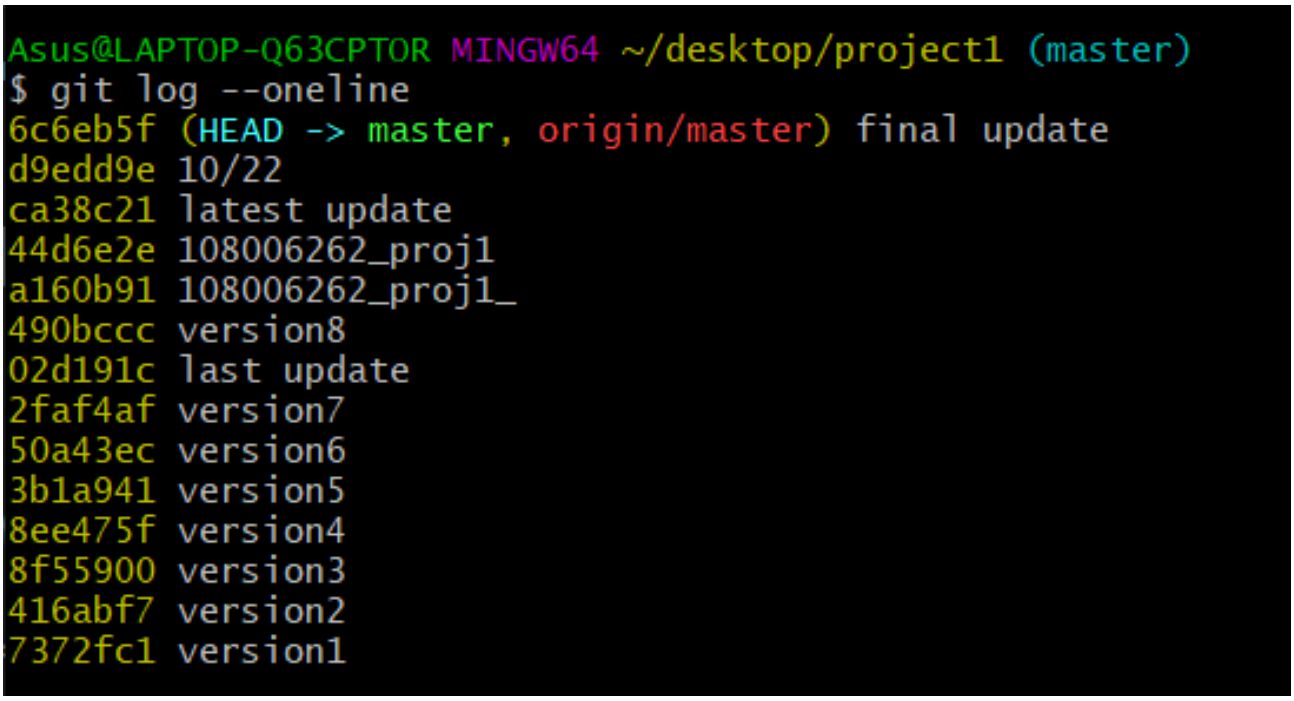
The rows and the columns are all start from index 1. Build a (trow+1)*(tcol+1) array(matrix), for store the input in first. Then, check if the endgame condition reached. If the endgame condition reached, then stop read in input, and print the output in the output file. Otherwise, the program will keep read in the data (symbol, scol, steps) into the array. The game block is a 4*4 array(block), and is set according to the shape (symbol).

While inserting the game blocks, start insert from the targeted column and row (scol, game block's row), then justify the row of matrix is valid for the blocks to move down, if is valid then keep checking until the blocks reach the bottom row of the matrix or the blocks are having collision with the other blocks. When the blocks reach bottom or collide with each other(matrix+gameblock>1), the blocks will move up and keep checking until the blocks can fit into the matrix, else the game is over. After the blocks are fit into a position, then it will be moved to left or right according to the "steps" read from the input file. After moved, the blocks will go to second drop to check whether there are free spaces to fit, if not then the block will move up again to find a place to fit into the matrix. After the blocks went for second drop and found a place to fit, the deletion will start. Check the current row where the blocks fitted, the column are all 1, if the row are all 1, change it to all -1. Then keep checking until there is row with not -1, then change the row(s) full with -1 with the one is not. Then, set all the -1 to 0, the deletion was done.

Detail Description of Testcase

My test case is to test is it possible when there are 3 rows need to be deleted.

Github-Bash



https://github.com/eunice-chen/108006262_proj1_final