Web Programming Midterm Project
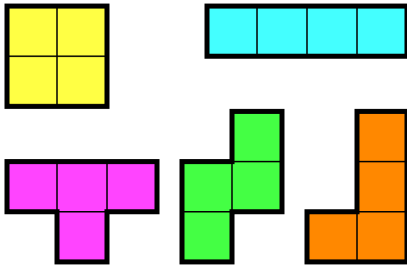
Tetris-like game development
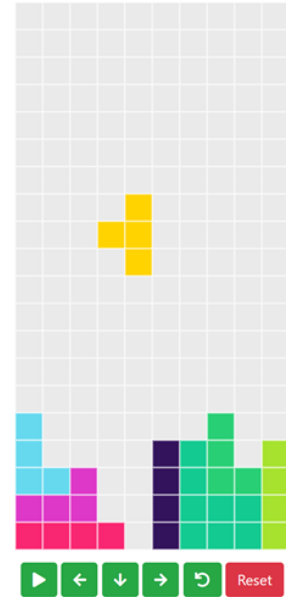
Deadline: 2023/12/02 11:59pm

1. HTML UI Elements: (15%)
   a. HTML Canvas
   b. Buttons: Start, Left, Right, Rotate, Reset, Pause
   c. Design your own blocks and UIs: 15%

2. 5 Tetris Blocks (10%)

   5 general Tetris blocks as shown above.

3. Animation (10%)
   a. Randomly create one of the 5 Tetris blocks and appear from the top of the game area.
   b. Automatically Move 1 unit downward each second.
   c. The next block will be created after 5 sec.

4. Each Block can detect the collision of each other. (30%)
   a. The bottom and the two sides of the canvas are boundaries that blocks cannot go through. 5%
   b. Blocks cannot go through (penetrate) each other. (i.e., you cannot move the block to somewhere it cannot go through.).   25%
   c. The block stops moving when its bottom reach the bottom of the canvas or hit other existed blocks. The block's status is then set to dead.

5. Interactive Control with the buttons: (30%)
   a. Start/Pause/Reset the game 5%
   b. Left: move the selected block to the left   2%
   c. Right: move the selected block to the right. 2%
   d. Rotate: rotate the selected blocks 90 degree clockwise. 3%
   e. You can use mouse to select which block you would like to control 15%
      • Only blocks which are not dead yet can be selected.

- The block is selected if the mouse clicked inside the block.
- The selected block will move (dragged) along the mouse until the mouse is released.
  f. The selected block should be highlighted with a red bold bounding box. 3%

bounding box
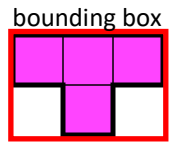
6. The game is over when the block died at a place higher than the ceiling. (Set your own ceiling) 5%

ceiling