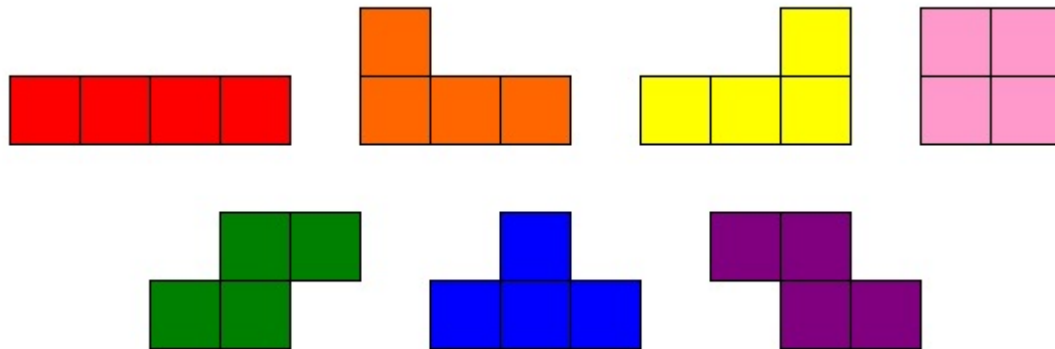




Tetris

- Designed and programmed by Alexey Pajitnov in the Soviet Union
- First released in 1984
- Tetra + Tennis = Tetris



Tetris³

Video link: http://youtu.be/_cMNnFFE_8I



Game link: <http://users.csc.calpoly.edu/~zwood/teaching/csc471/finalproj24/gzipkin/>

A 3D Tetris game scene. The background is black. The top and bottom borders are made of gray 3D cubes. The game board is a grid of 3D cubes. On the left, a red I-tetris piece is falling. To its right, a yellow L-tetris piece is on the board. On the right side, there are several other pieces: a red I-tetris piece, a yellow L-tetris piece, a blue Z-tetris piece, a cyan S-tetris piece, and a red I-tetris piece. The text "Te3Ds" is in the center, and "- 3D Tetris in WebGL" is below it.

Te3Ds

- 3D Tetris in WebGL



WebGL (Web Graphics Library)



- Javascript API
 - Useful to render interactive 2D and 3D graphics with all modern web browsers.
- Consists of code written in Javascript and shader code that is executed on a computer's Graphics Processing Unit (GPU)



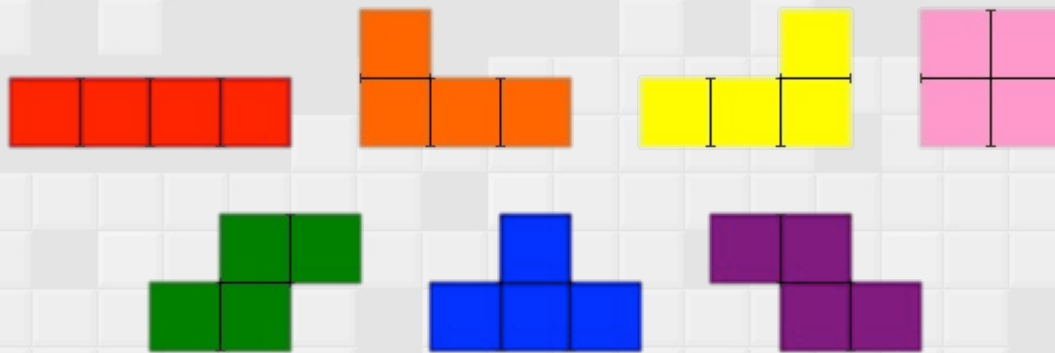
OpenGL to WebGL



- Syntax
 - `gl_TRIANGLE` -> `gl.triangle`
 - `glBufferData` -> `gl.bufferData`
- Shaders
 - Uses GLSL instead of GLSL #130
 - » in `vec3 N` -> `varying vec3 N`
- Glut
 - No Glut because we're using HTML canvas

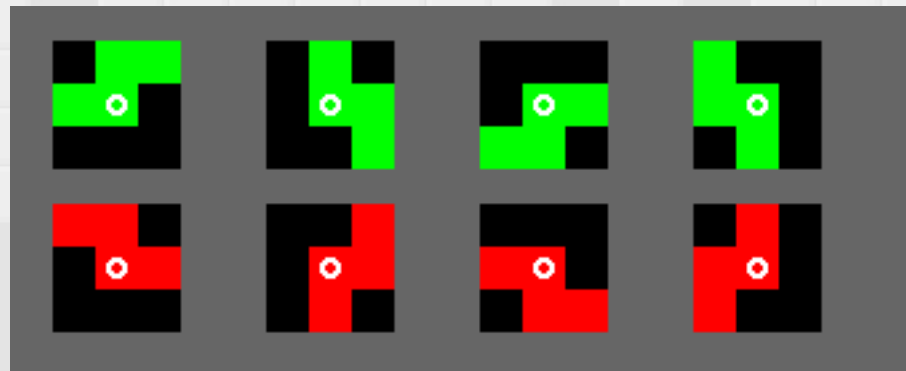
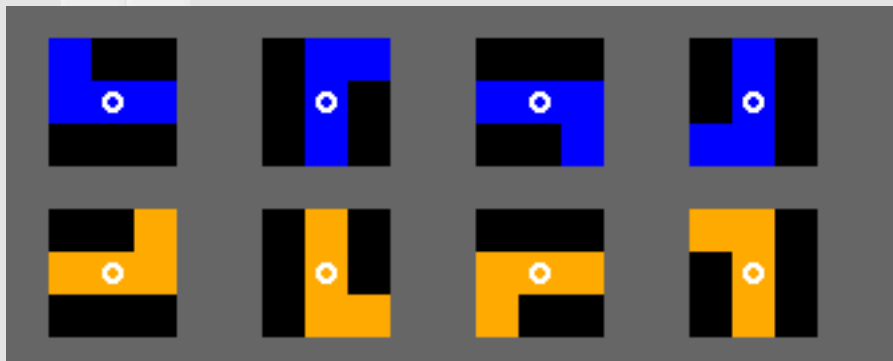
Te3Ds

- Starts with an empty container
- One of the five different shapes (L, I, T, S, Cube) falling down from the top of the container at a slow pace



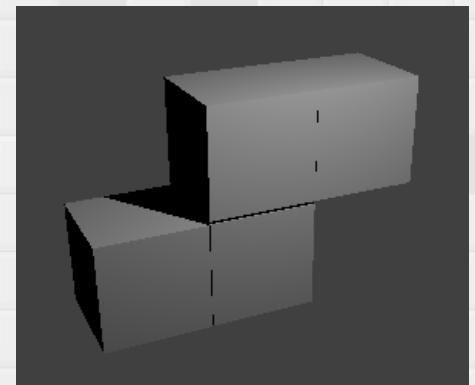
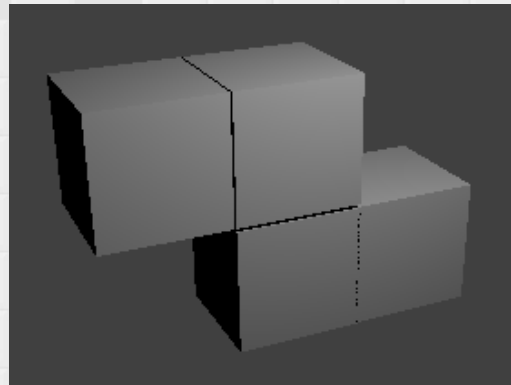
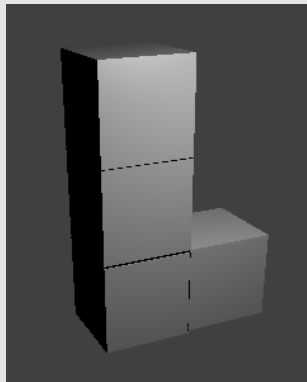
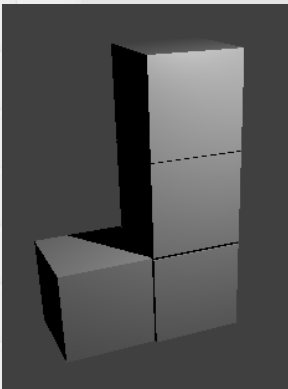
L and S Rotations

- Classic 2D Tetris



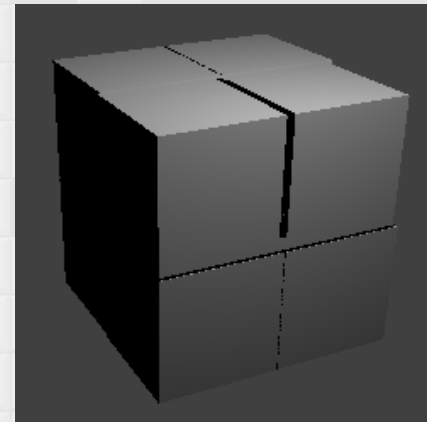
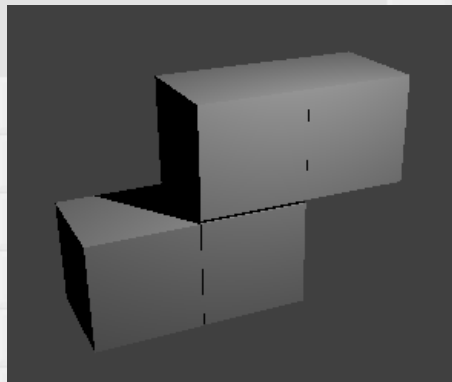
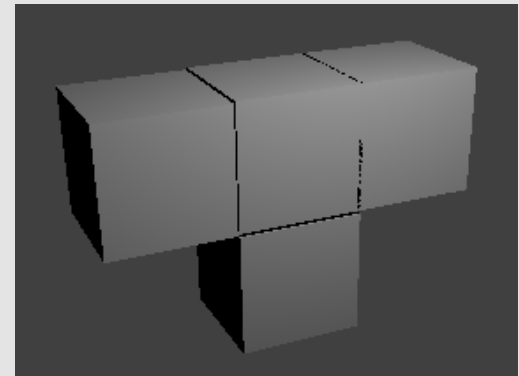
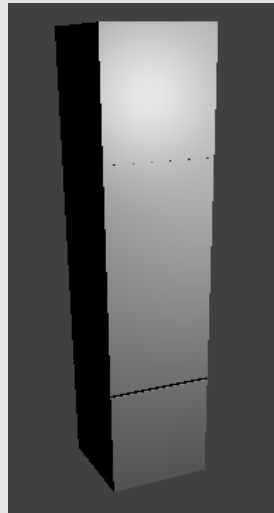
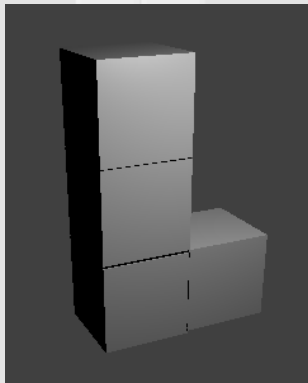
L and S Rotations

- Te3Ds




The 5 Shapes

- The L, I, T, S and Cube shapes



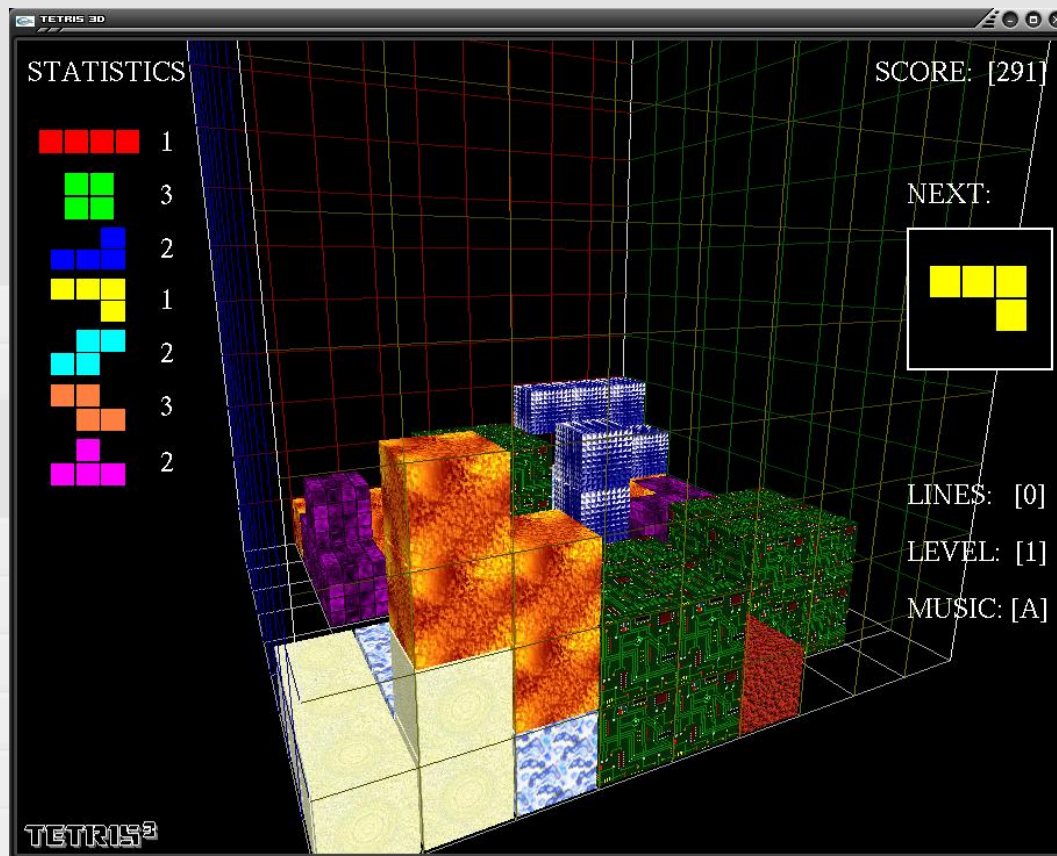


Deliverables

- 
- CAD in WebGL
 - Tetris components (The 5 Shapes)
 - Tetris controls
 - Shape translation
 - Shape rotation
 - Camera movements

Deliverables Continued...

- Screen layout of the game
- Texture mapping (if time permits)





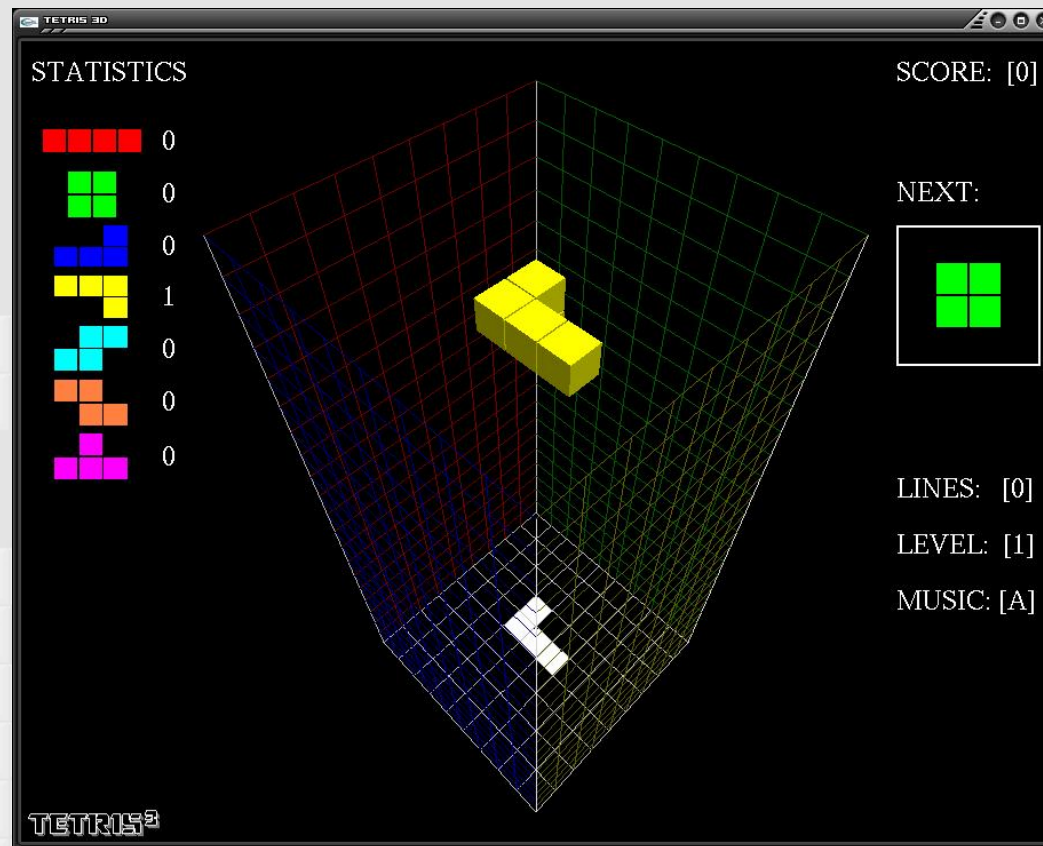
Deliverables Continued...



- Keep track of the states of the game
 - Game statistics
 - Number of components
 - Occupied and free grid space
- Background music and sounds

Deliverables Continued...

- Shading and shadows





Demo

- 
- Demo demo demo demo
 - <http://youtu.be/u5kXg4QB3zg>