

Checkoff List

The Commitment

- 3D graphics renders at ≥ 5 fps, 320x180 resolution
- 3D projection pipelined for division in projection, demonstrate in software
- Demonstrate tilePainter to work in software
- 8 parallel BRAMs for tile painting
- demonstrate appropriate BRAM/DRAM storing/retrieval of data

The Goal

- 3D graphics renders at ≥ 30 fps, 320x180 resolution
- additional parallelization using 16 parallel BRAMs
- additional bounding box logic to skip unnecessary tile painting if triangle doesn't overlap tile
- demonstrate integrated game logic (including controls with fpga buttons/switches) in hardware
- some form of sprite also included

Stretch Goal

- 3D graphics renders at ≥ 15 fps, 1080x720 resolution
- obstacles generated so that course is always possible
- texture and/or shading on 3-dimensional train car obstacles to increase realistic rendering