ASTEROIDS
Implementation of the classic Atari game

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Overview

• Originally developed on MOS 6502 CPU and Digital Vector Generator
Ship

• Challenges:
  – geometry of triangle
  – vector drawing

• Utilize Bresenham line drawing algorithm
Ship

• Physics of motion
• Trigonometric functions:
  – Lookup table
Bullet

- Limited number of bullets
- Inputs:
  - Ship position
  - Ship velocity
  - Ship heading
Asteroid

- Couple together smaller asteroids
- Store internal "randomness" variable
Logic

• Care about:
  – Asteroid and Bullet interaction
  – Asteroid and Ship interaction

• Hardware intense
Sound

• Sound on relevant collisions
• Sounds stored on BRAM
• Expect 5k x 8 memory
• On multiple sounds, play most recent
Visual

- Score sprite
- Show asteroids, asteroids can overlap
- Bullets
- Ship
Timeline

• Nov 23 – Individual Modules
• Nov 30 – Game Logic
• Dec 3 – Sound
• Dec 5 – Integration