

Motion Controlled Driving Game

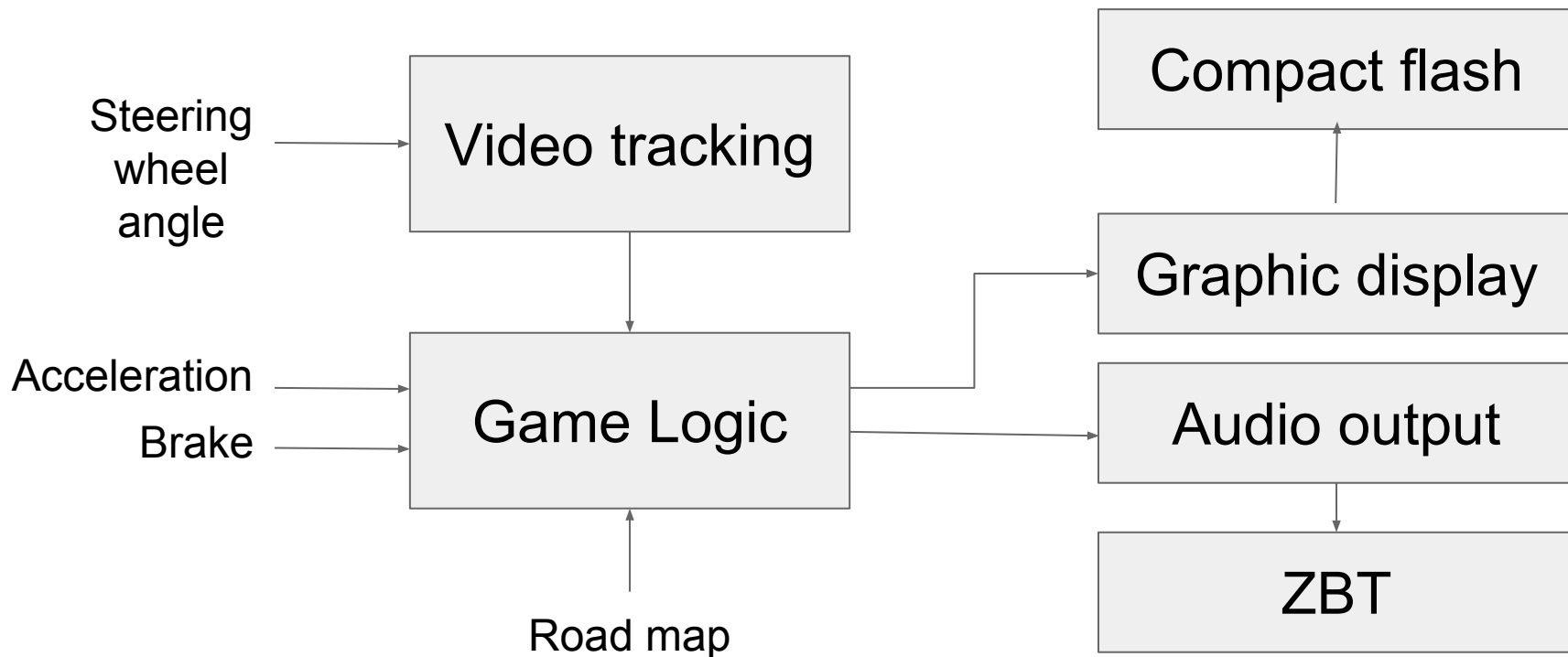
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Overview

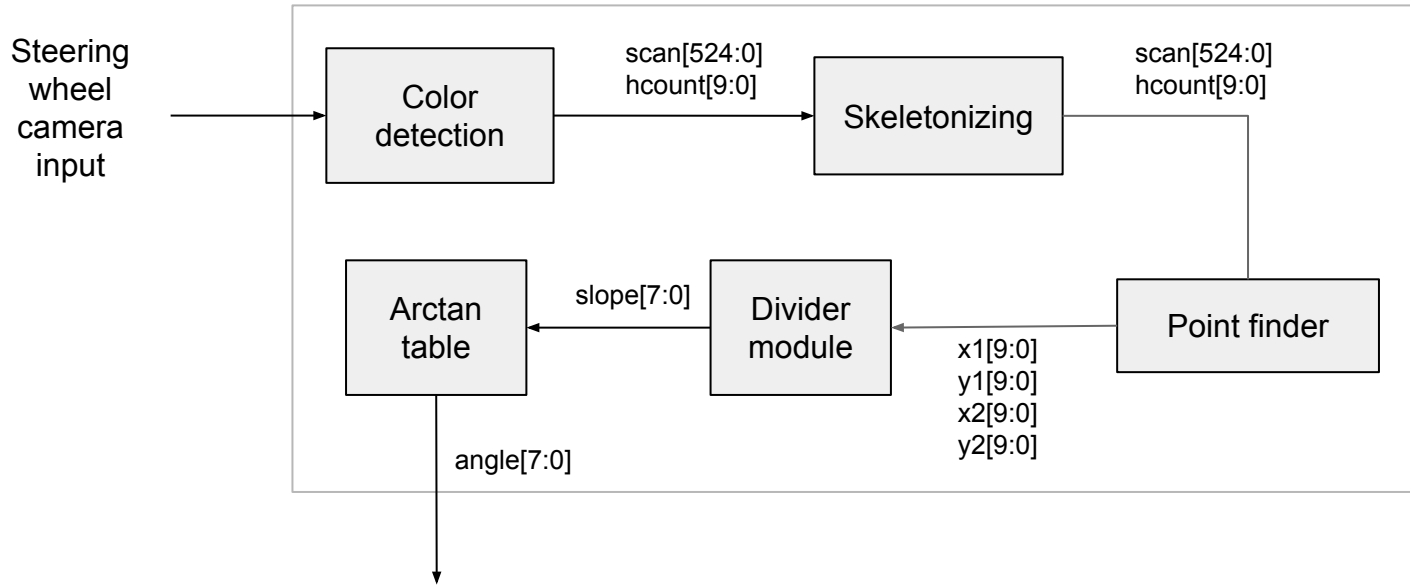
- Driving game!
- Player can turn their steering wheel to navigate a car
- Road map has turns and obstacles



High Level Block Diagram



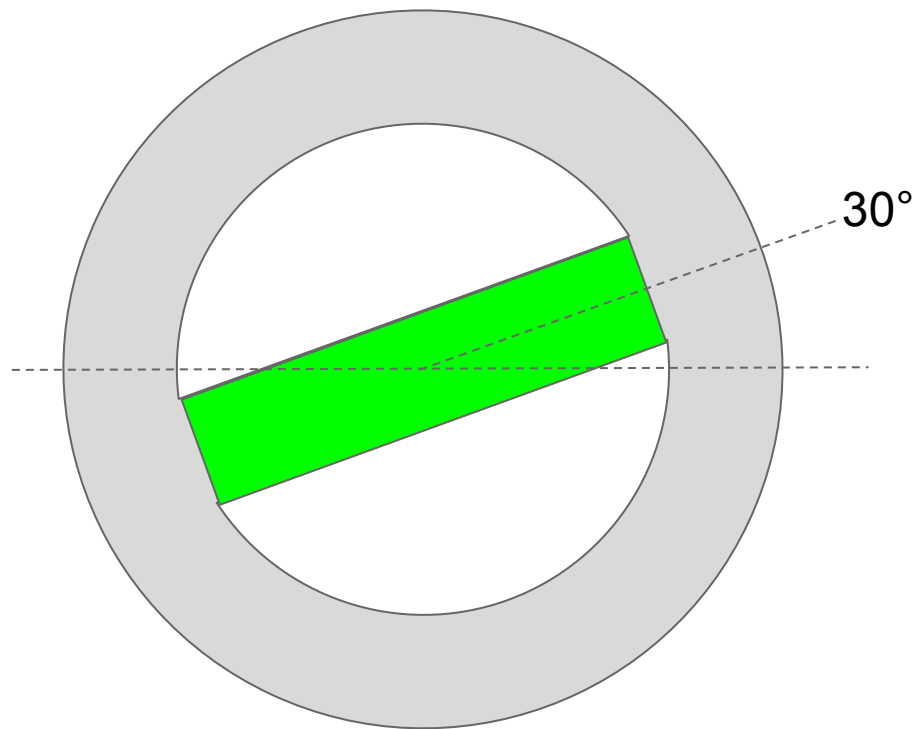
Video tracking



Video tracking

Steering wheel

- Straight: 0°
- Left: 0° to 90°
- Right: -90° to 0°



Video tracking

- NTSC camera
- Convert RGB to HSV
- Skeletonization

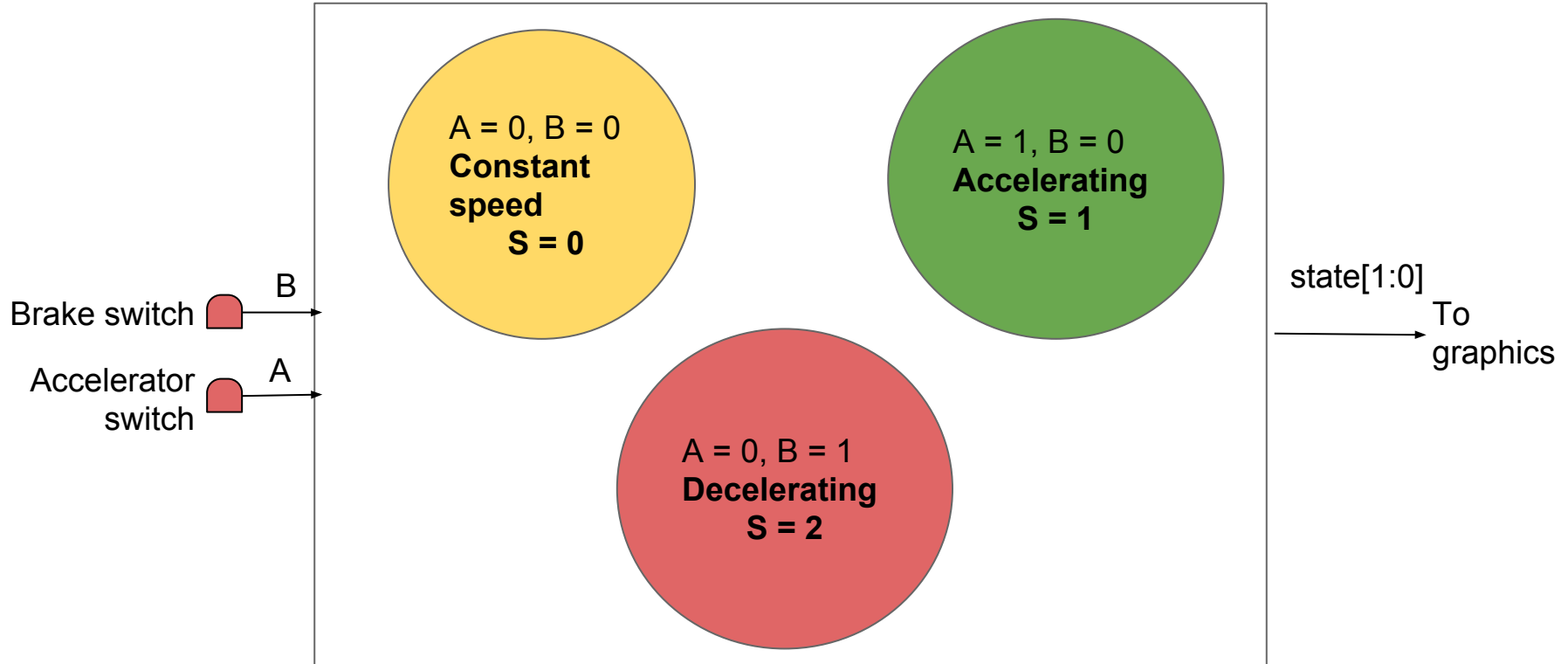


Video tracking

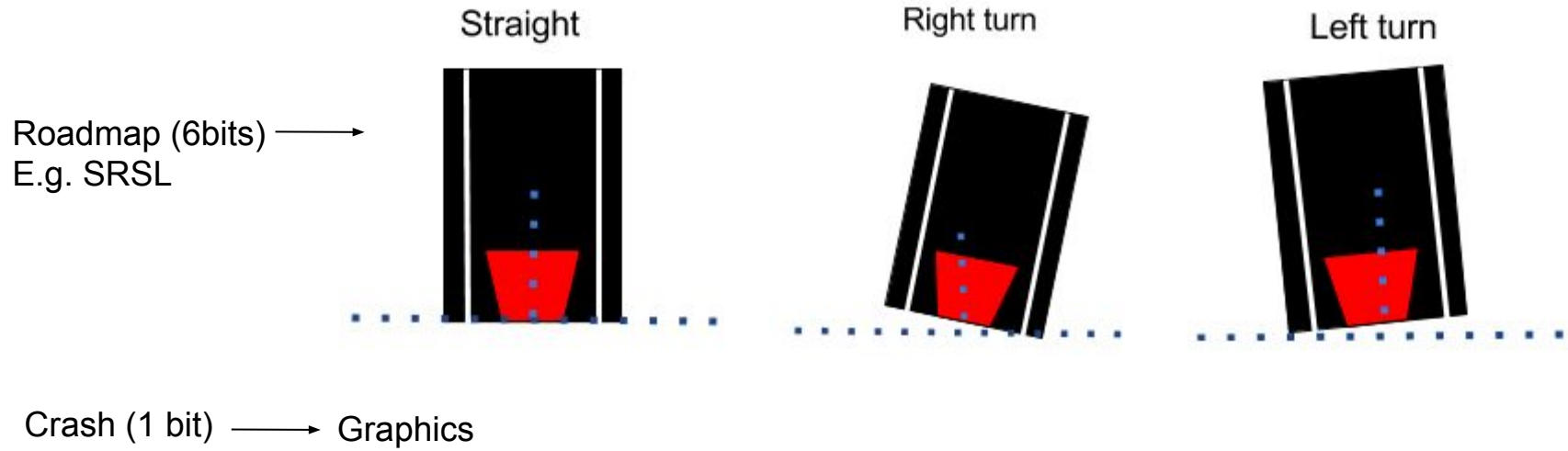
- Determine endpoints
- Calculate slope
 - Build divider module
- Convert to angle
 - Arctan table



Game Logic – Speed of the car

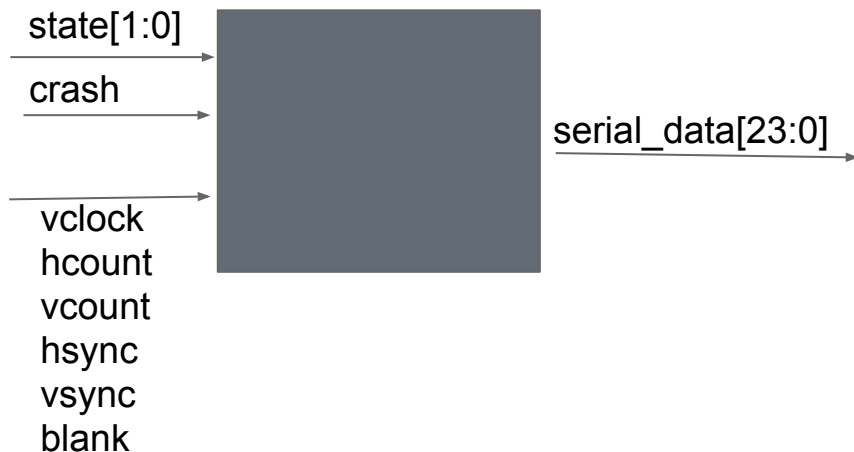


Game Logic - Direction of the car



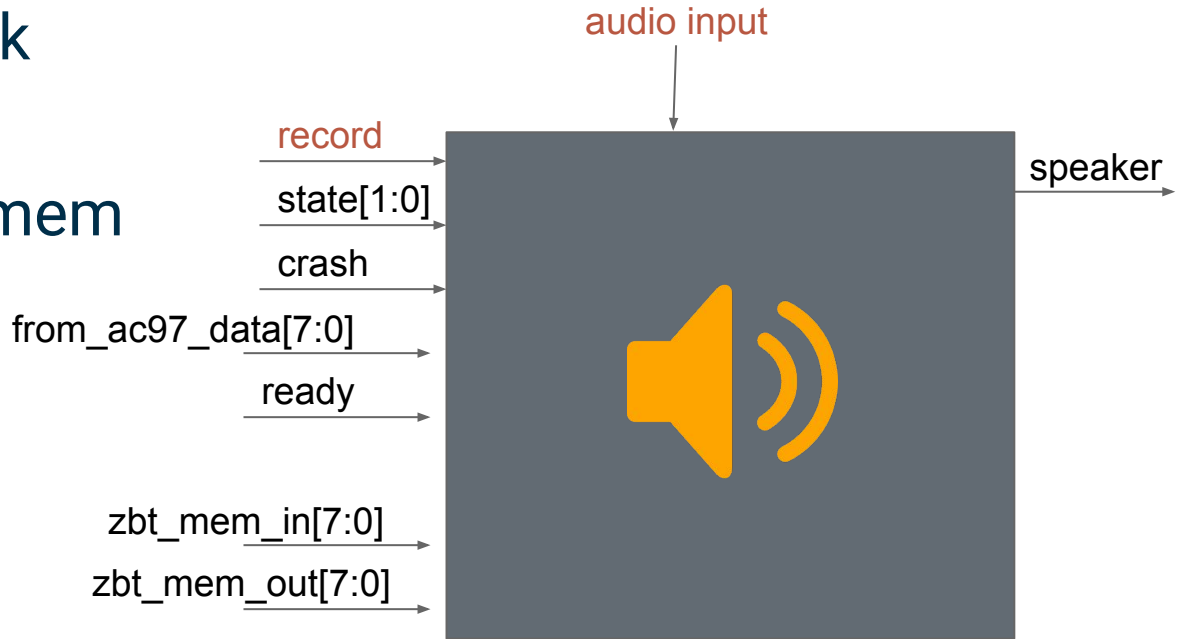
Graphics

- VGA Video Output
- Blob modules for street
- Clipart for other images:
 - Trees, horizon, etc.



Audio

- Record and playback
 - Lab 4
- Store audio in ZBT mem
- Acceleration sound
- Crash sound effect



Timeline

- 11/17: Implement modules with base level performance
- 11/22: Integration of modules
- 12/01: Continue working to achieve goals and attempt stretch goals
- 12/08: Final Debugging
- 12/11 Project checkoff