

High Striker

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6.111 Fall 2010 Project Presentation

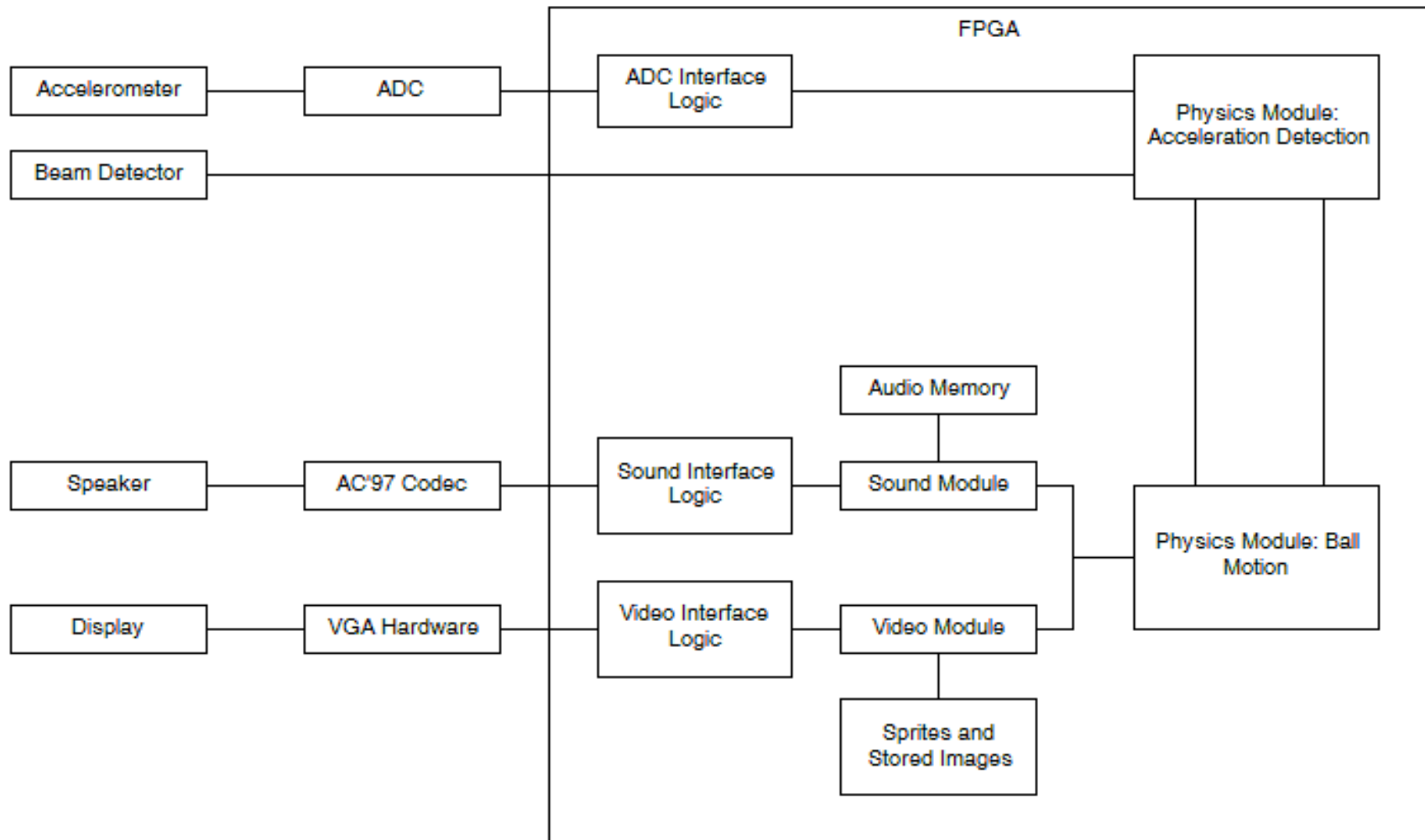


What is High Striker?

High Striker aka Test Your Strength

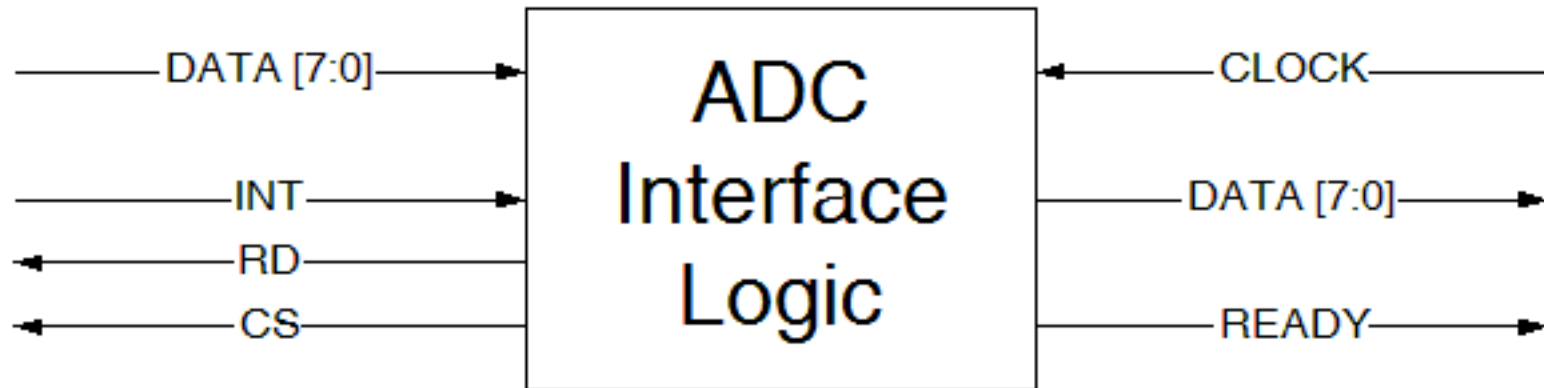


Project Diagram



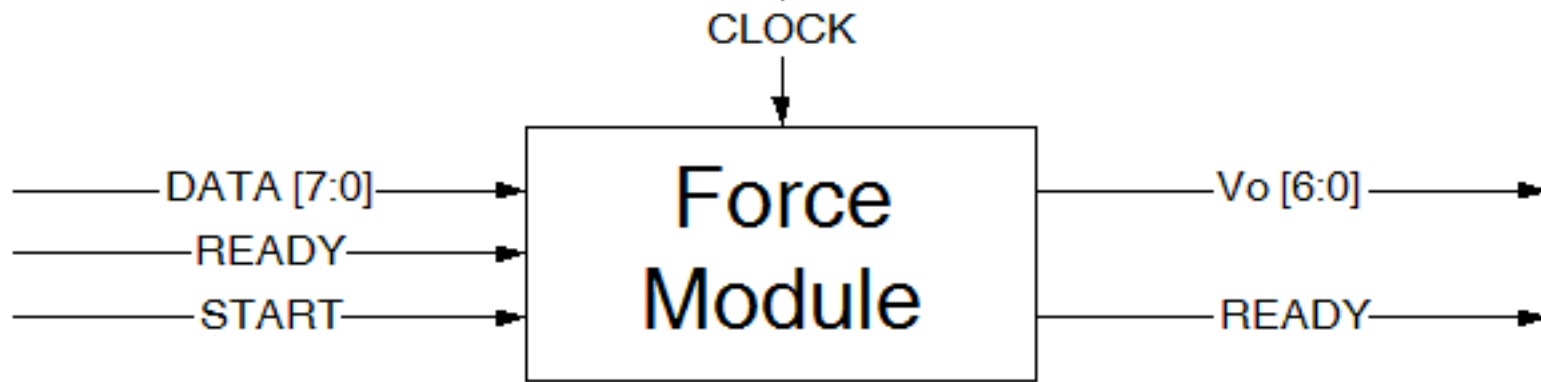
Accelerometer, ADC Interface

- FSM to generate control signals for ADC
- Samples incoming analog signal as fast as possible and presents data to other modules



Accelerometer force to velocity

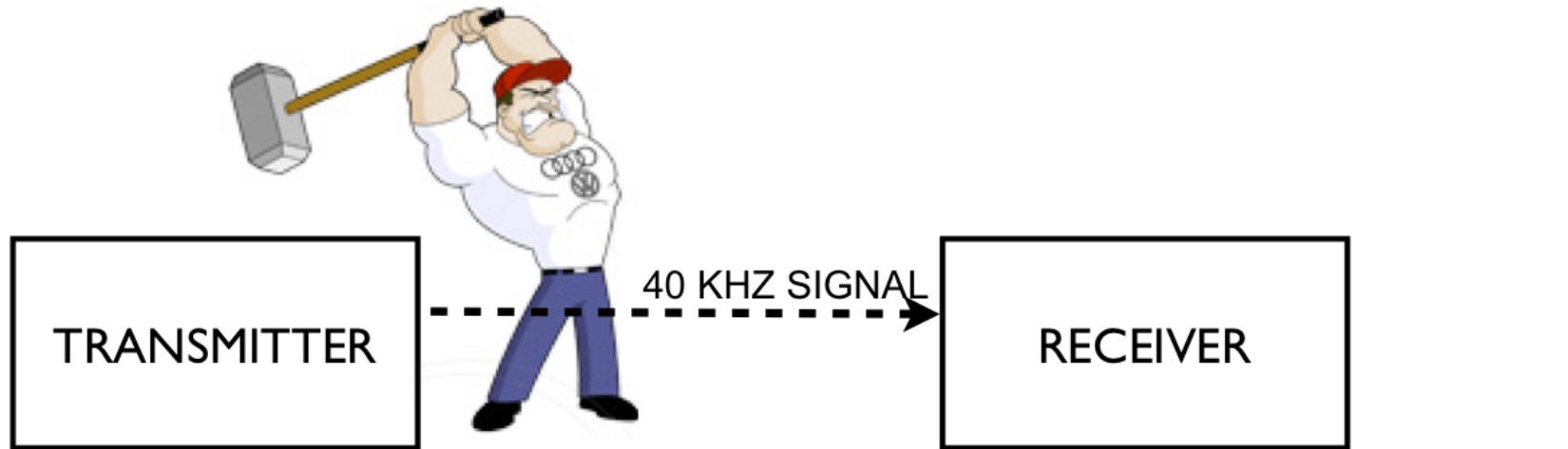
- Time integral of acceleration
- On each ready signal, add data value to accumulator
- Scale by "mass": adjustable sensitivity



$$v_0 = \frac{1}{m} \int_0^t \vec{a} dt$$

Signal Detector

How to know when the game has started
Hijacking from lab 4b



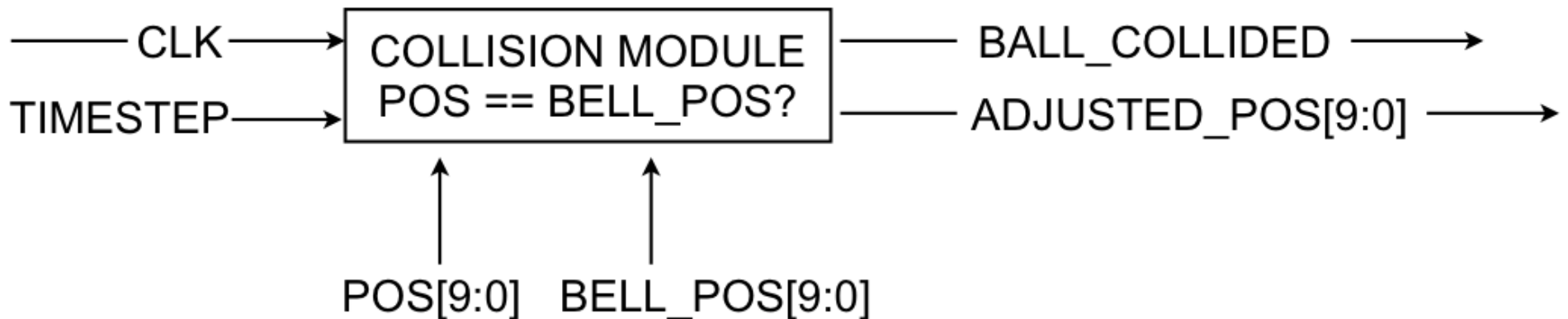
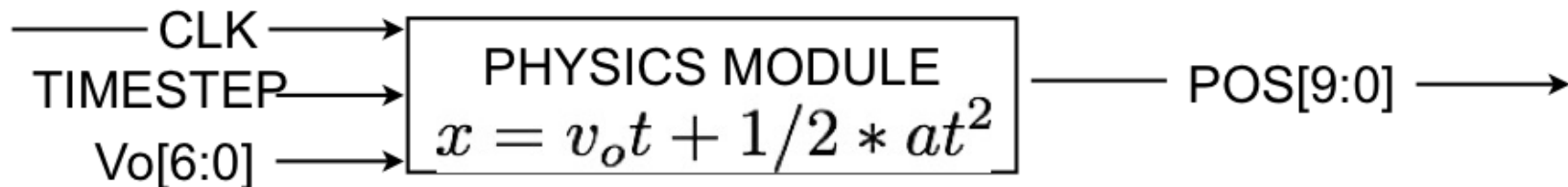
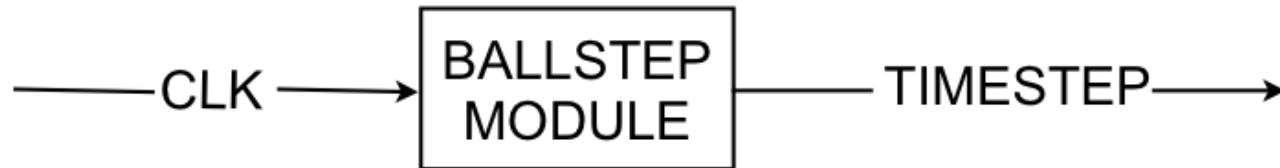
IF(SIGNAL) GAME NOT STARTED



ELSE START GAME & RECORD ACCELERATION

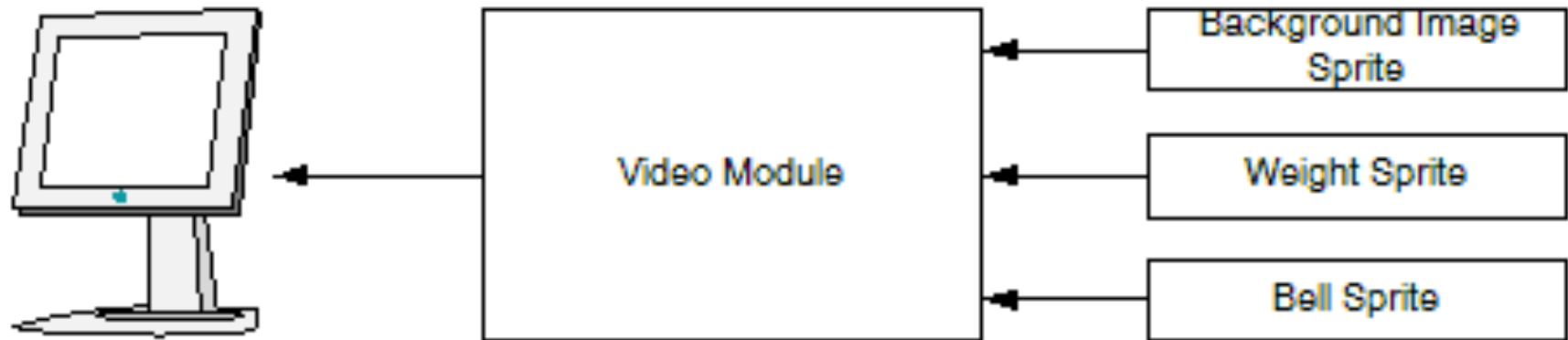
Physics Module

- * *The motion of the ball moving up and down the pole*
- * *Adjusting if the ball hits the bell*



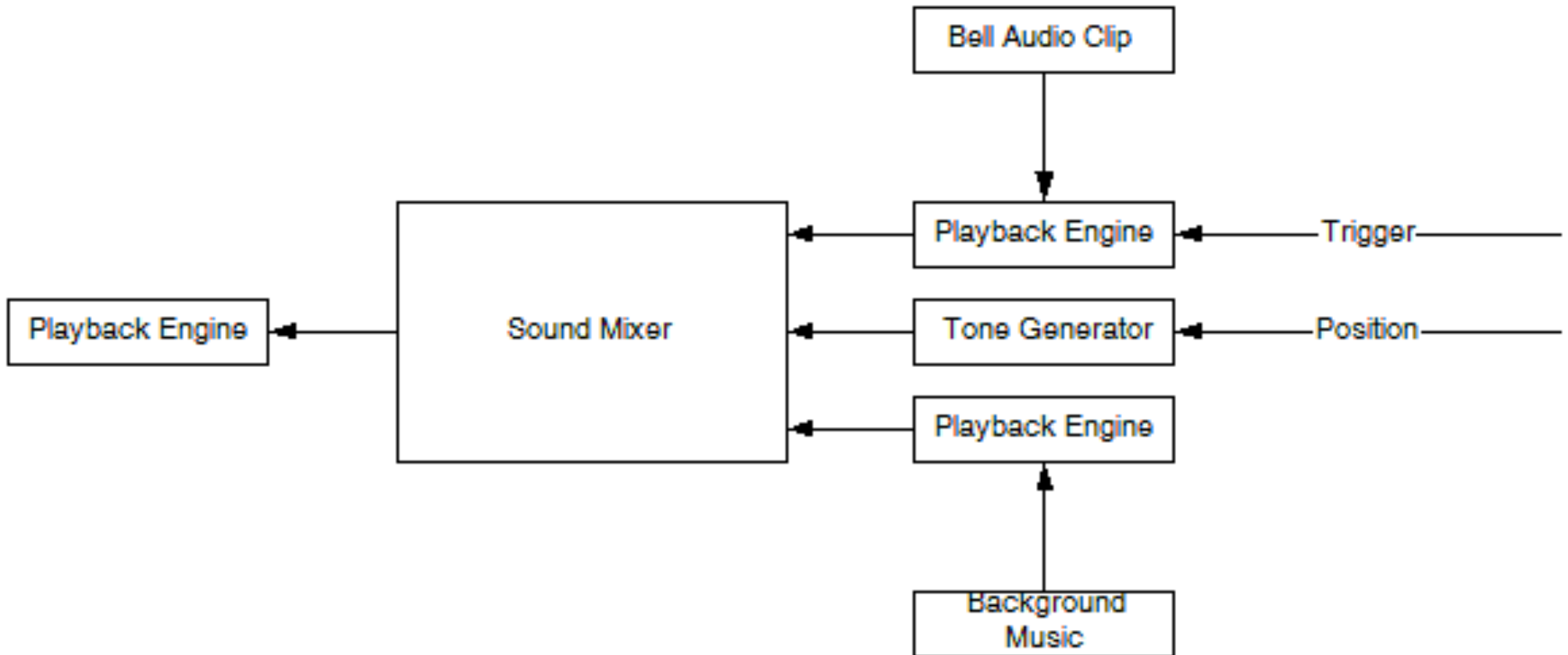
Graphics

- * Matlab will convert images to coe files stored in ROM
- * Performance/Memory: 800x600, with 4 bit color
- * Additional z-order logic



Audio Modules

- Matlab will convert audio clips to COE files stored in ROM



Timeline

Week	Jenny's Goals	Mike's Goals
Nov 15	Signal Detector	ADC Logic and Force Module
Nov 22	Physics + Graphics Modules	Sound Modules
Nov 29	Load + Display Images	Debugging and Audio Extensions
Dec 6	Debugging + Extensions	Debugging + Extensions