Project Description

- We created a new, fun project based off of “America’s” game that used concepts learned in lecture as well as lab.
- Hardware Necessary: SSMI Board, 7 LED’s, Extra large breadboard, 2 Push buttons, 1.5 kΩ Resistor DIP, 25 kΩ Trimpot
- Uses LED’s to simulate a “pitch” starting from the first yellow LED. The RTI timing system is then used to determine quickness of the “Batter”, then the rest of the red LED’s produce the result of the timing as a number of bases reached.
Circuit Schematic
Overview

- Game is started by the “Pitcher” pressing his/her button. The yellow LED’s then light up in order, starting at the “pitcher” and ending at the bottom red LED. At the instant the bottom red LED lights up, a timer is started and the batter has 0.25 seconds to press his/her button.
Timing
Modifications to the Original Design

- Added pitching speed adjustments
  - Potentiometer added
- Three new speed variances
  - Slow (half a second delay between lights)
  - Normal (three tenths of a second)
  - Fast (tenth of a second)
Software Implementation

Interrupt for LED4 timing with RTI system
if (Timing for batter is incorrect)
  LED1 on
delay
reset RTI and LEDs
if (Timing for batter is poor)
  LED5 on
delay
reset RTI and LEDs
if (Timing for batter is decent)
  LED5 on
delay
  LED6 on
delay
reset RTI and LEDs
if (Timing for batter is good)
  LED5 on
delay
  LED6 on
delay
  LED7 on
delay
reset RTI and LEDs

main()
set up PTT appropriately for inputs and outputs
set up PTM appropriately for inputs and outputs

while(1)

Read analog voltage from potentiometer
Convert to digital voltage with A/D conversion
Assign digital voltage value to a delay value  //for pitch speed

if (Pitcher button is pressed)
  LED1 on
delay
  LED2 on
delay
  LED3 on
delay
start timer for RTI system
LED4 on
toggle interrupt
Questions?