

FPGuitar Hero Project Checklist (Sarah Spector and Alejandro Diaz)

	Alejandro	Sarah
Minimum	<ul style="list-style-type: none"> ● 5 possible notes that stream down according to stored music (Note Lookup module for x position & pitch) ● Notes stored in Lookup Table in beat chunks, one note per beat (Music Lookup Module) ● 2 hands displayed on Screens(x, y correspond to paddles in Gameplay Module) ● Intersection with Hands and Notes produces the correct audio output (Gameplay Module checks intersections) 	<ul style="list-style-type: none"> ● User-controlled dynamic HSV thresholding for 1 color ● Use of erosion to reduce noise ● Demonstrated x/y centroid tracking of 1 colored light
Goal	<ul style="list-style-type: none"> ● 13 possible notes for the possibility of a full octave (Note Lookup Module) ● Realistic sounding mixing of multiple notes/preloaded notes from Memory (Mixing Module) ● Multiple different lengths of notes - $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1 (Gameplay Logic Module) ● Score Calculated & Displayed on the Hex Display (Score Module) 	<ul style="list-style-type: none"> ● Extension of user-controlled HSV thresholding and centroid tracking to 2 colored lights ● Add filtering option (such as IIR) on x/y output to smooth tracking
Stretch	<ul style="list-style-type: none"> ● Guitar sounding notes (Sine Wave Mod) ● Score Displayed on the VGA Display (Score Module & Number Display Mod) ● Menu Settings selection & Game Over Screen: ideally using the hand to choose the options (Game Screen FSM w/ Gameplay Mod) ● Notes stream out diagonally from the top center of the screen (Note Movement Module) ● Add on Note Streaks as part of Score Keeping (Score Module) ● Use Y value to control volume or some other feature (Gameplay Mod) ● Multiple levels and/or songs (Gameplay Mod) ● Different speeds/difficulty for songs ● Two Player Mode (Gameplay Mod) ● Note color changes if it has been hit ● Notes that are hit do not continue to the bottom of the screen 	<ul style="list-style-type: none"> ● Extension of user-controlled HSV thresholding and centroid tracking to 3 or more colored lights ● Automatically detect number of colored lights present in scene ● Interfacing with SD card to read notes for longer/multiple songs