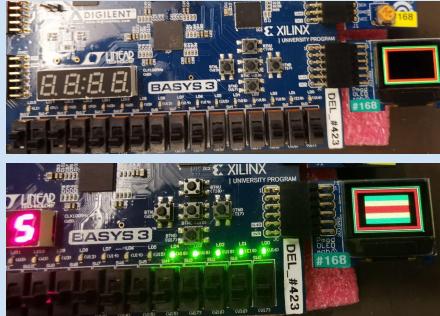
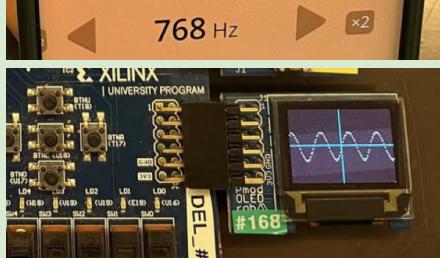
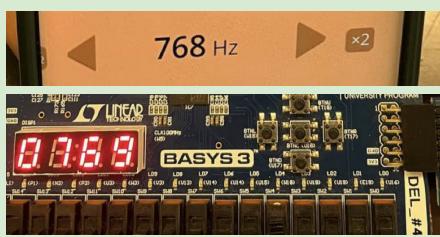
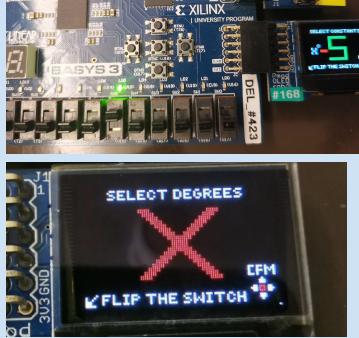
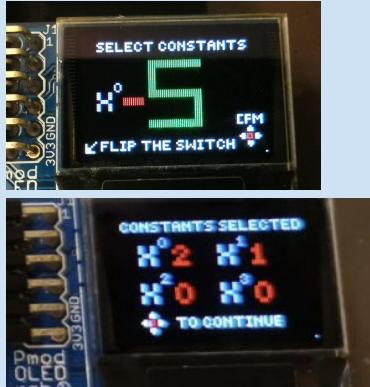
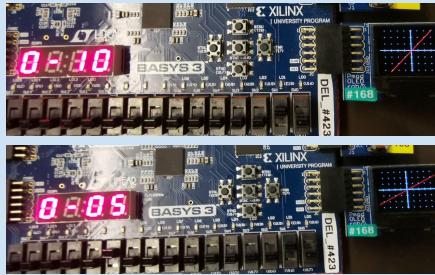


Brief Feature Name	Feature Description	Images/Photos
Student A: Marvin Pranajaya Oled Task A - Borders + AVI2A	SW[15:13] = 100 : Border Hidden + AVI feature disabled SW[15:13] = 101 : Border Shown + AVI feature disabled SW[15:13] = 011 : AVI feature enabled	
Student B: Amit Rahman Oled task B - Bars + AVI2B	SW[15:13] = 110 : Bar Hidden + AVI feature disabled SW[15:13] = 111 : Bar Shown + AVI feature disabled SW[15:13] = 011 : AVI feature enabled	
Team: Selection menu for different components of the project	PBU : Move up and highlight menu items PBD : Move down and highlight item PBL : Select highlighted item on menu PBR : Return to main menu Other feature(s): Moving background	
Student B: Amit Rahman Audio Spectrogram Ref: http://www.cromptonusa.com/Oscilloscope.pdf https://people.ece.cornell.edu/land/courses/ece5760/FinalProjects/s2017/ijt5_jgf82_js633/illyscope/index.html	OLED: Mic input is plotted on a 1000x scale to produce a waveform of tones played, sampled at 20kHz. Each pixel rep 5e-5s time scale. SW[4] = 1 : Pauses the waveform	
Student B: Amit Rahman Pitch detector	Segment display: Frequency of paused waveform is calculated based on zero point crossing and displayed on segment display SW[4] = 1 : Pauses the frequency of waveform	
Student A: Marvin Pranajaya Polynomial plotter Stage 1 : Polynomial Degree Selection + Confirmation page Synopsis: this polynomial plotter will plot the graph $y = ax^3 + bx^2 + cx + d$ on the OLED display.	Stage 1a : Degree Selection Flip on one switch below to select the corresponding degree. SWi = 1 : degree i (only up to degree 3 supported) Upon flipping the correct switch, the LED above the flipped switch will light up. The OLED display will show the current degree being selected at that point. If invalid switches are selected, all LEDs will light up and the OLED display will show an invalid ("cross") display. Only when input is valid will the user be able to confirm. PBC : to confirm the selection Stage 1b : Display degree confirmation	

	OLED display confirmation screen PBC : to proceed to the next stage	
Student A: Marvin Pranajaya Polynomial plotter Stage 2: Polynomial Degree Selection + Confirmation page	<p>Stage 2a : Constants selection Depending on the degrees (e.g. x) selected previously, Select x + 1 constants to feed it into the polynomial function.</p> <p>Flip one switch SW[9:0] to choose the corresponding constant (SW5 -> 5) (only constant 0 - 9 possible). To select a negative constant, flip SW15 to 1.</p> <p>PBC: to confirm the constant for each of the variables.</p> <p>Stage 2b : Display Constant Confirmation OLED display confirmation screen PBC : to proceed to the next stage</p>	
Student A: Marvin Pranajaya Polynomial plotter Stage 3: Show Graph + Zoom Function	<p>The oled display will plot the function using the input given. By default, each cross in the axis represents multiple of 10 units from the origin. We can zoom in the x-axis by flipping the following switches</p> <p>SW[12:10] = 000 -> X-axis is multiple of 10 SW[12:10] = 001 -> X-axis is multiple of 5 SW[12:10] = 010 -> X-axis is multiple of 2 SW[12:10] = 100 -> X-axis is multiple of 1 The selection is also showed in the segment display PBC : to plot a new graph!</p>	
Team: M-O-R-S-E Code! Main Menu	<p>The OLED will display 2 choices. Flip the following switches to access the modes.</p> <p>SW[1:0] = 10 : Training Mode SW[1:0] = 01 : Timed Mode SW[1:0] = 00 : Back to Menu</p>	
Team: M-O-R-S-E Code! Training Mode	<p>The OLED will display randomly generated letters and corresponding morse code in a flash card style learning aide.</p> <p>Mic will pick up users' audio input and transcribe it to dots and dashes displayed on the segment display.</p> <p>If user input matches the correct sequence of dots and dashes, a small check mark will appear indicating the user got the right answer, and move on to the next randomly generated letter.</p> <p>PBC: Clears current morse code input</p>	
Team: M-O-R-S-E Code! Timed Mode	<p>Timed mode is similar to training mode with a timer.</p> <p>There is a countdown timer, where users have to input the correct sequence of audio for dots and dashes within the stipulated time of 8s.</p> <p>PBC: Clears current morse code input</p>	