**Group Members:**

Alex Weir

Braedon Linforth

**Project Overview:**

Our project aims to create an LED matrix sound visualization system utilizing an FPG. We will use a microphone to capture sound signals and translate them into visual representations displayed on the LED matrix. The LED matrix will serve as a dynamic visualizer, responding to various frequencies and amplitudes of sound in real-time.

**Components and Budget:**

LED Strip Lighting: 2 meters x $20/meter = $40

Power Supply: $20

Resistors, wires, and miscellaneous components: $10

Total Budget: $70

**Expected Outcome:**

Upon completion, we expect to have a fully functional LED matrix sound visualization system using an FPGA. The system will accurately react to various sound inputs, providing a visual display with the possibility of synchronizing it with music.

**Potential Challenges:**

Ensuring accurate sound detection and translation to LED patterns using FPGA logic.

Optimizing FPGA code for real-time responsiveness.

Power management for LED matrix and FPGA.

**Conclusion:**

The LED matrix sound visualization project offers a stimulating opportunity to blend technology and creativity. With a budget tailored to accommodate an FPGA and LED strip lighting, we are poised to deliver an immersive and functional product within the stipulated timeline.