**DLD Project Proposal**

**Group Members**

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**Length Measurement Device using Ultrasonic Sound Waves**

**Objective:**

The main objective is to create a device that would replace the standard measuring tape with a much more advanced and reliable machine.

**Components (may change due to the complexity of the project):**

* Ultrasonic Wave generator
* Ultrasonic Wave receiver
* Display for showing the distance
* Buttons to activate or de-activate the machine
* Wires
* Laser/LED to point to the place to measure the length
* Timer(May use a 555 timer IC)
* Microprocessor/Chip to process info

**Circuit Diagram (may change due to the complexity of the project):**

Wall

Ultrasonic Wave Generator

Display

Ultrasonic Wave Receiver

Timer

Processor

* Length = VSOUND \* Time
* Measured Length = length/2

Laser/LED

**Abstract:**

The idea of the project is simple. There will be a sound wave generator that will be sent towards a wall or some object after the press of a button. The receiver will then receive the time and calculate the time between send and receive. We will suppose that pressure of the air is constant and that there is not that much difference in specific acoustic impedance, and assume a constant value of the speed of sound. We will then calculate the length and divide by 2. In the end, we will display it on a screen.