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ECE 411 Homework: 3 Project Ideas

Idea 1: ASL Glove (cont. from ECE 212)
- Brief description: Device that translates ASL to English or other languages in real time to text and/or speech. Optimized for better processing and speed
- List of sensors: Gyroscope, Accelerometer, Resistive flex sensor
- List of controllers: ESP32 or Arduino Nano
- List of actuators: Phone App

Idea 2: Tile Rhythm Game
- Brief description: Similar to BopIt™, but a tiled "drum pad" with X number of pads that light up and play a sound in a particular order which the user then has to repeat back.
- List of sensors: Capacitive or Piezo force sensors
- List of controllers: ESP32, RPi Pico, or Arduino Nano
- List of actuators: LEDs, sound

Idea 3: LED20
- Brief description: D20 that lights up the rolled number, may play sound upon rolling a 1 or 20. May detonate upon rolling 2 consecutive 1s
- List of sensors: Gyroscope, Accelerometer,
- List of controllers: ESP32-S3 or RP2040
- List of actuators: LEDs, sound

Why we chose LED20: The idea seems reasonable to achieve within the timeframe of the class. Additionally, it checks all the project requirement boxes.