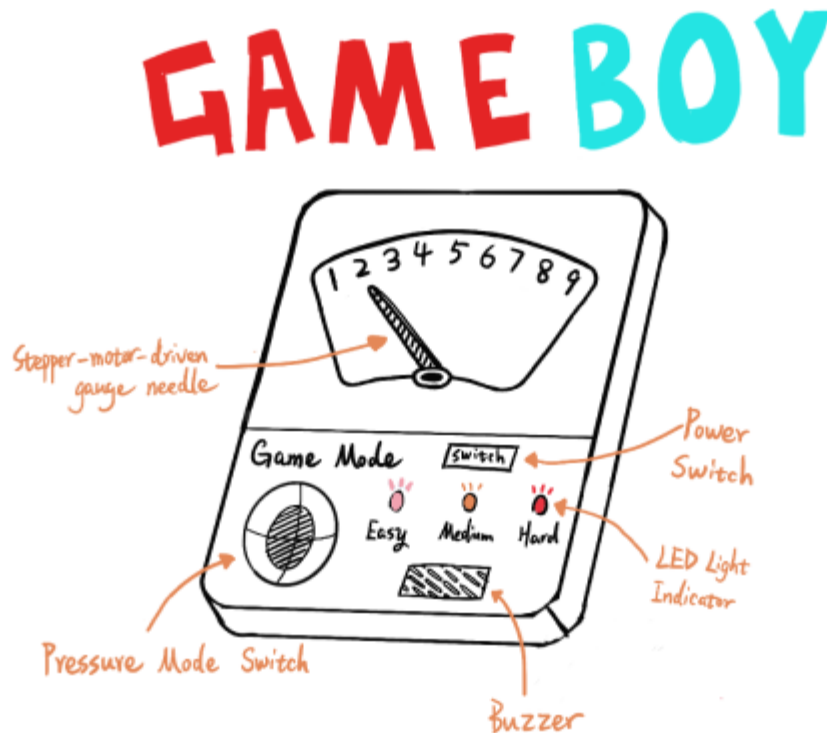# System Architecture with Diagram

Dial Lock Memory Gameboy

Brief

I want to make a memory training product which references the design of a combination carousel lock. The user needs to memorize a string of numbers randomly generated by the system, and judge whether they have memorized them by clicking on the numbers in sequence.

Sketches

GAME BOY

Stepper-motor-driven gauge needle

Game Mode

Switch

Power Switch

Easy   Medium   Hard

LED Light Indicator

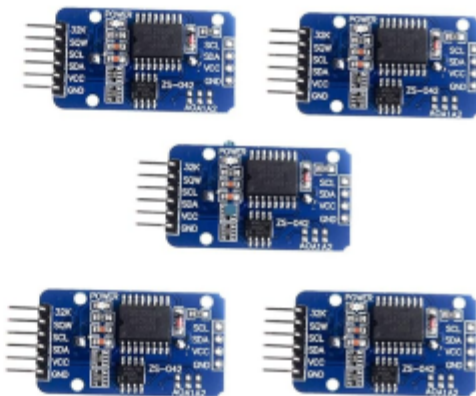Pressure Mode Switch

Buzzer

Sensor

1x Pressure Sensor
FSR

1x Timer alarm clock
DS3241

Select the game mode as well as the difficulty of the game by using the pressure sensor

Count and record the time, if spent to much time game will be over.

Sketch
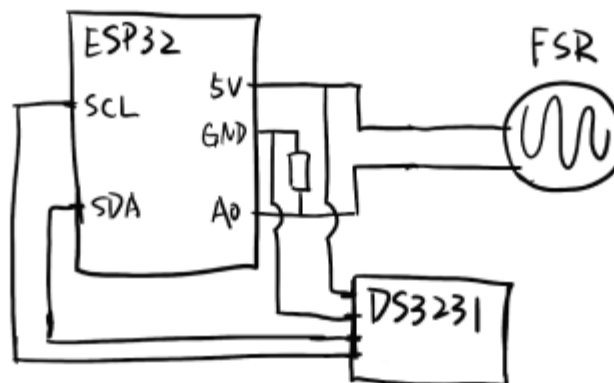
Display

1x Stepper-motor-driven gauge needle

Use the rotation of the needle to indicate the number, and return directly to the origin in case of input errors

3x LED Light

Use the LEDs to indicate the game mode and whether or not you have answered correctly.

Sketch

Diagram

```
                    ┌─────────┐
                    │  Start  │◄──────────────────────┐
                    └─────────┘                       │
                         │                            │
                         ▼                            │
                    ╱─────────╲                       │
                   ╱ Choose the ╲                     │
                  ╱ game mode by  ╲──────────┐        │
                  ╲ pressure sensor╱          │        │
                   ╲──────────────╱           │        │
               easy │      medium │      hard │        │
                    ▼             ▼           ▼        │
            ┌──────────┐  ┌──────────┐  ┌──────────┐  │
            │generate 6│  │generate 8│  │generate 10│ │
            │random num│  │random num│  │random num │ │
            │from 1-9  │  │from 1-9  │  │from 1-9   │ │
            └──────────┘  └──────────┘  └──────────┘  │
                    └──────────┼───────────┘          │
                               ▼                      │
            ┌──────────────────────────────────────┐  │
            │ The user presses the buttons          │  │
            │ corresponding to the numbers in the   │  │
            │ memorized sequence                    │  │
            └──────────────────────────────────────┘  │
                               │                      │
                               ▼                      │
                       ╱───────────────╲              │
                      ╱  Determine if the ╲            │
                     ╱ user has entered the╲───No──────┘
                     ╲ correct numbers     ╱
                      ╲───────────────────╱
                               │ Yes
                               ▼
            ┌──────────────────────────────────────┐
            │     Play music of success via buzzer │
            └──────────────────────────────────────┘
                               │
                               ▼
                         ┌─────────┐
                         │   END   │
                         └─────────┘
```
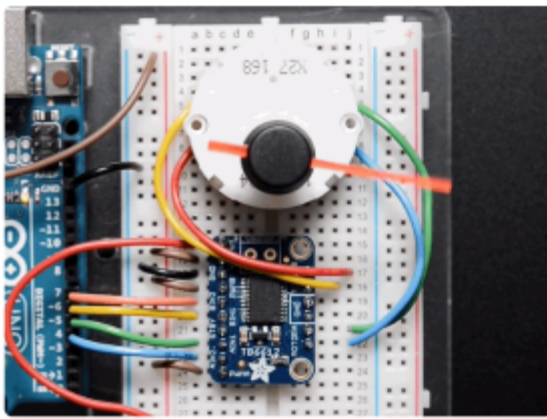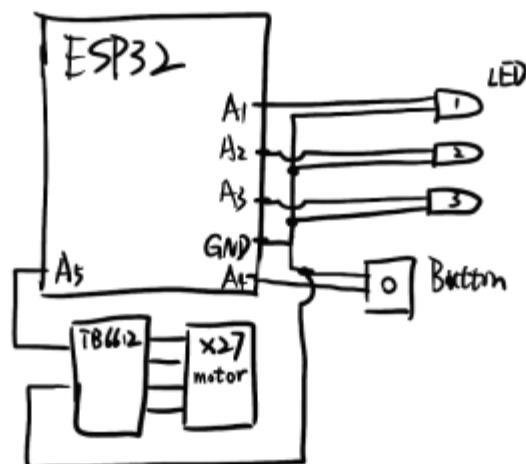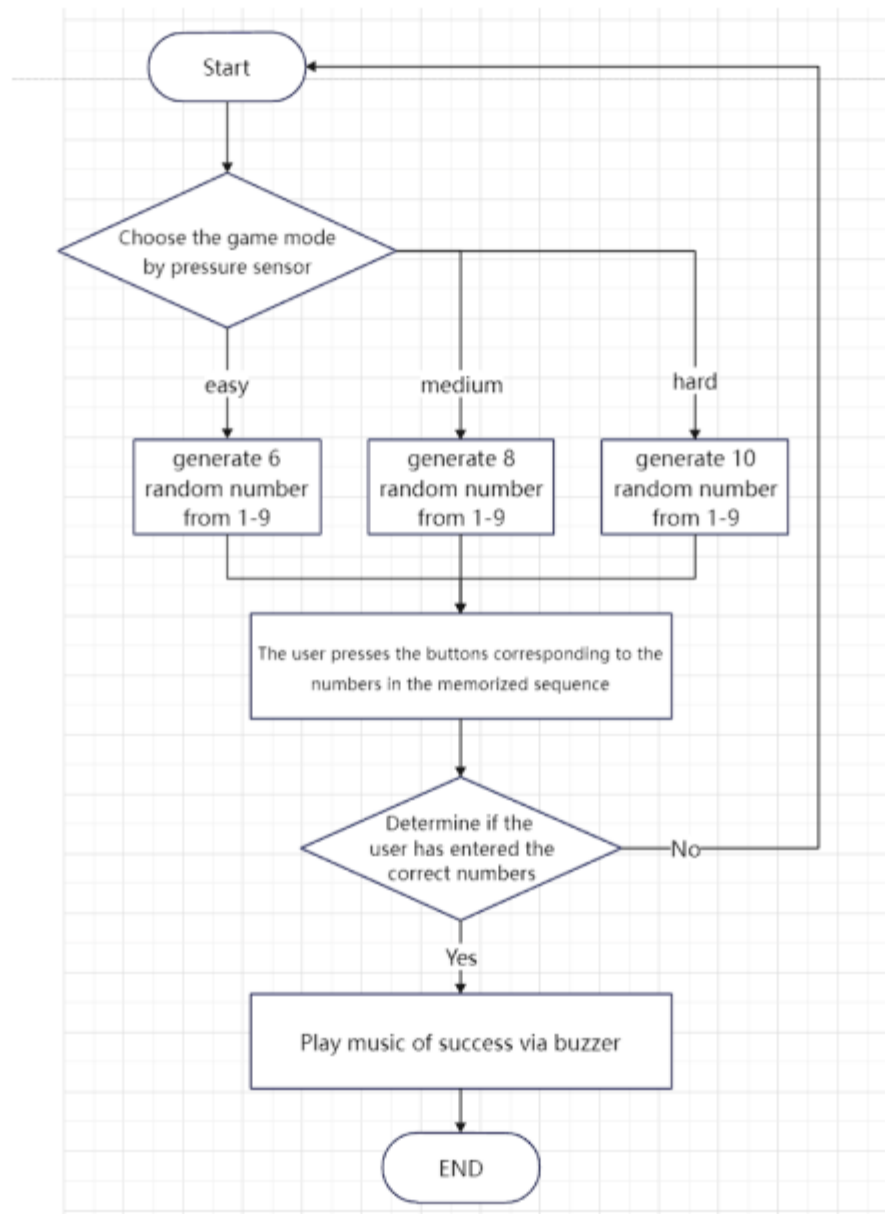
Connection

Sensor

Press | to open

Device — Choose the game mode via button → After playing

Phone

Game | Data
Bluetooth | or Wifi

Wire

LED

Motor