**Baby monitoring:**

**IoT Baby Monitoring System using ESP32 + Blynk + DHT22 + MPU6050 + Servo**

**What This System Does:**

* Monitors **temperature** and **humidity**
* Detects **baby movement**
* Takes **baby cry input** via Serial monitor
* Swings the **cradle** using a **servo** (on user input from Blynk)
* Sends baby status ("Sleeping", "Crying", or "Baby Moving") to Blynk

**STEP 1: Required Components**

| **Component** | **Quantity** |
| --- | --- |
| ESP32 | 1 |
| DHT22 Sensor | 1 |
| MPU6050 Module | 1 |
| Servo Motor | 1 |
| Jumper Wires | As needed |

**STEP 2: Circuit Connections**

| **Module** | **Pin on ESP32** |
| --- | --- |
| DHT22 VCC | 3.3V |
| DHT22 GND | GND |
| DHT22 DATA | GPIO 21 |
| MPU6050 VCC | 3.3V |
| MPU6050 GND | GND |
| MPU6050 SDA | GPIO 21 |
| MPU6050 SCL | GPIO 22 |
| Servo Signal | GPIO 15 |
| Servo VCC | External 5V (recommended) |
| Servo GND | GND |

**STEP 3: Blynk Cloud Setup**

1. **Go to** <https://blynk.cloud>
2. Login and click **“Templates” → “+ New Template”**
   * Name: baby care
   * Hardware: ESP32
   * Connection: WiFi
3. Click **“Datastreams”** and add:

| **Datastream Name** | **Type** | **Virtual Pin** |
| --- | --- | --- |
| Temperature | Double | V1 |
| Humidity | Double | V0 |
| Baby Status | String | V2 |
| Cradle Switch | Integer | V6 |

1. Copy your:
   * BLYNK\_TEMPLATE\_ID
   * BLYNK\_TEMPLATE\_NAME
   * BLYNK\_AUTH\_TOKEN

**STEP 4: Blynk App Setup (Mobile)**

1. Download the **Blynk IoT App** from Play Store or App Store.
2. Log in → Your device will auto-appear.
3. Click device → tap **Edit icon**.
4. Add 3 widgets:
   * **Label (V0)** → Humidity
   * **Label (V1)** → Temperature
   * **Label (V2)** → Baby Status
   * **Switch (V6)** → Cradle Swing ON/OFF

**STEP 5: Arduino IDE Setup**

**Install Required Libraries:**

* Blynk (from Library Manager)
* DHT sensor library
* Adafruit Unified Sensor
* Wire
* MPU6050 (by Electronic Cats)
* ESP32Servo

**Select Board:**

* Tools → Board: ESP32 Dev Module
* Tools → Port: Your COM port

**STEP 7: Monitor on Blynk App**

You will now see live:

* Temperature on **V1**
* Humidity on **V0**
* Baby Status on **V2**
* Cradle Swing controlled by **Switch on V6**

