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ARDUNIO CODE_ FOR HAND GESTURE CAR

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#include <Wire.h>
#include <MPU6050.h>

MPU6050 mpu;

// Pin definitions
const int ledPin1 = 9; // LED for on/off
const int ledPin2 = 10; // LED for blinking

// Thresholds for gesture detection
int threshold = 10000; // Adjust this threshold based on your testing
int tiltThreshold = 20000; // Threshold for tilt detection

void setup() {
  Serial.begin(9600);
  Wire.begin();
  mpu.initialize();

  pinMode(ledPin1, OUTPUT);
  pinMode(ledPin2, OUTPUT);

  if (!mpu.testConnection()) {
    Serial.println("MPU6050 connection failed");
  } else {
    Serial.println("MPU6050 connection successful");
  }
}

void loop() {
  int16_t ax, ay, az;
  mpu.getAcceleration(&ax, &ay, &az);

  // Print accelerometer values for debugging
  Serial.print("ax: "); Serial.print(ax);
  Serial.print(" ay: "); Serial.print(ay);
  Serial.print(" az: "); Serial.println(az);

  // Gesture detection
  if (az < -tiltThreshold) { // Tilt forward
    digitalWrite(ledPin1, HIGH); // Turn on LED1
    digitalWrite(ledPin2, LOW); // Ensure LED2 is off
  }
  else if (az > tiltThreshold) { // Tilt backward
    digitalWrite(ledPin1, LOW); // Turn off LED1
    digitalWrite(ledPin2, LOW); // Ensure LED2 is off
  }
  else if (ax < -tiltThreshold) { // Tilt left
    digitalWrite(ledPin1, LOW); // Ensure LED1 is off
    blinkLED(ledPin2); // Blink LED2
  }
```

```
  else if (ax > tiltThreshold) { // Tilt right
    digitalWrite(ledPin1, HIGH); // Turn on LED1
    digitalWrite(ledPin2, LOW); // Ensure LED2 is off
  }
  else {
    digitalWrite(ledPin1, LOW); // Ensure LED1 is off
    digitalWrite(ledPin2, LOW); // Ensure LED2 is off
  }

  delay(100); // Small delay for stability
}

// Function to blink LED
void blinkLED(int pin) {
  digitalWrite(pin, HIGH);
  delay(250);
  digitalWrite(pin, LOW);
  delay(250);
}
```