**COMPONENTS REQUIRED**

MPU6050

16x2 LCD (with LiquidCrystal library)

Active Buzzer

Two LEDs (Bank Angle & MCAS alerts)

Jumper Wires

| **Component** | **Arduino Uno Pin** | **Description** |
| --- | --- | --- |
| **LCD RS** | 12 | LCD Register Select |
| **LCD E** | 11 | LCD Enable |
| **LCD D4** | 5 | LCD Data Line 4 |
| **LCD D5** | 4 | LCD Data Line 5 |
| **LCD D6** | 3 | LCD Data Line 6 |
| **LCD D7** | 2 | LCD Data Line 7 |
| **LCD VSS** | GND | Ground |
| **LCD VDD** | 5V | Power Supply |
| **LCD VO** | Potentiometer Mid | Contrast control (middle of 10k pot) |
| **LCD RW** | GND | Set to Write Mode |
| **LCD A (LED+)** | 5V via 220Ω | LCD Backlight Anode (+) |
| **LCD K (LED−)** | GND | LCD Backlight Cathode (−) |

**MPU6050 I2C Connections**

| **MPU6050 Pin** | **Arduino Uno Pin** | **Description** |
| --- | --- | --- |
| VCC | 5V | Power supply |
| GND | GND | Ground |
| SDA | A4 | I2C Data |
| SCL | A5 | I2C Clock |

**Buzzer and LEDs**

| **Component** | **Arduino Uno Pin** | **Notes** |
| --- | --- | --- |
| **Buzzer +** | 9 | Tone output |
| **Buzzer −** | GND |  |
| **Bank LED** | 6 | Indicates bank angle alert |
| **MCAS LED** | 7 | Indicates nose angle alert |
| LED GND (both) | GND | Use current-limiting resistors (~220Ω) |

**LCD Contrast Control (Optional, but Recommended)**

* Connect a 10k potentiometer:
  + One side to **GND**
  + One side to **5V**
  + Middle pin (wiper) to **VO** on LCD