**Software Used**

1. **Arduino IDE**
   * Used for writing, compiling, and uploading code to the NodeMCU (ESP8266).
   * Compatible with C/C++ language and supports various libraries used in this project.
2. **Proteus (Simulation)**
   * Used to simulate and visualize the circuit design before actual hardware implementation.
   * Enables testing of sensors, buzzer, and display with virtual components.
3. **Blynk IoT Platform**
   * Used to create the mobile/web-based control interface for remote monitoring and alerting.
   * Provides features like:
     + Button triggers (Theft, Medical, Acknowledge)
     + Live sensor data
     + Event notifications (push alerts and logs)
4. **MQTT (via HiveMQ Cloud)**
   * MQTT protocol is used for real-time communication between devices.
   * Broker: HiveMQ Cloud with TLS encryption for secure message transfer.
   * Used to broadcast alerts (e.g., "Fire Detected!") across multiple connected nodes.
5. **ESP8266WiFi Library**
   * Enables Wi-Fi functionality on the NodeMCU board to connect with internet and servers.
6. **PubSubClient Library**
   * Used to manage MQTT communication, including publish/subscribe actions.
7. **BlynkSimpleEsp8266 Library**
   * Interface for connecting the ESP8266 board with Blynk servers via Wi-Fi.
8. **Adafruit SSD1306 and GFX Libraries**
   * Used to control the OLED display for real-time status updates like gas levels, fire detection, and alert messages.
9. **WiFiClientSecure Library**
   * Enables encrypted (TLS) communication between NodeMCU and HiveMQ MQTT broker for data security.