**Scénarios Arduino**

* **Project :** ConsultIQ
* **Group Members :**  
   Rahma hassine

Chaima larbi

Ines Skhiri

Taha Khouildi

Ousama Ajmi

Ridha ben Mnedi

**Office Occupancy Tracking:**

* **Scenario 1:**  
  When the motion sensor detects someone at a desk, your Qt application automatically updates the "Availability" field for the correct consultant in the table.

To achieve this feature, we use the following hardware:

* + 1 PIR motion sensor (HC-SR501)
  + 10 Jumper wires
  + 2 LEDs
  + 1 Resistor
* **Scenario 2:** **Fingerprint Integration When Booking Appointments**  
  As part of our smart consultation office project, we aim to integrate a biometric authentication system to secure appointment booking. This step verifies the customer's identity using their fingerprint, increasing the reliability and personalization of the service.  
  To achieve this feature, we use the following hardware:
* 1 Arduino Uno board
* 1 fingerprint sensor **(not in the site )**
* 2 LEDs (green and red) for visual signals
* 1 piezoelectric buzzer for audible alerts
* 16 Dupont wires for connection **(not in the site )**
* **Scenario 3: Arduino Emergency & Incident Alert System**

This Arduino-based system is designed to detect emergency situations within a smart consulting office — such as gas leaks, fire outbreaks, or panic events triggered by individuals. When an incident is detected, the system:

Emits visual and sound alarms.Sends an emergency alert message to the connected desktop application via serial communication. Optionally displays the type of alert on a small screen (OLED)

Hardware needed :

* MQ-2 Gas Sensor
* Flame Sensor
* Piezo Buzzer (Active)
* Red LED
* 220Ω Resistor
* Push Button
* Breadboard
* Dupont Jumper Wires (Male–Male)
* USB Cable (for Arduino connection)