**Test Scenario: Facial Recognition - Identifying a Known Person**

**Test Case: Recognizing a Registered Visitor**

**Given:**

* The doorbell camera is turned on and connected to the internet.
* The mobile web app is open and displaying the live video feed.
* “Will Smith” is already registered in the system with a reference image.
* The facial recognition feature is enabled.

**When:**

* Will Smith walks up to the door and is within the camera’s detection range.
* The motion sensor detects movement and triggers the camera.
* The camera captures Will’s face and runs the recognition process.
* The system compares Will’s live image with the stored reference image.

**Then:**

* The system correctly identifies Will Smith and confirms the match.
* The video feed is tagged with “Will Smith” in the web app.
* A notification is sent to the homeowner’s mobile device stating, "Will Smith is at the door."
* The event is logged in the system with a timestamp and confidence score.

**Additional Test Scenarios to Consider**

**1. Unrecognized Face**

**Given:**

* Someone who is not registered in the system walks up to the door.

**When:**

* The doorbell camera captures their face.

**Then:**

* The system tags them as "Unknown Visitor" and logs the event.

**2. Low Light Recognition**

**Given:**

* Will Smith arrives at the door during night-time with low lighting.

**When:**

* The camera processes his image.

**Then:**

* The system should still identify him correctly or provide a confidence level for the match.

**3. Multiple People in the Frame**

**Given:**

* Will Smith and an unknown person arrive together.

**When:**

* The camera detects and processes their faces.

**Then:**

* The system should correctly identify Will Smith and mark the other face as "Unknown."

**4. Face Partially Covered (Mask, Sunglasses, Hat)**

**Given:**

* Will Smith is wearing a face mask.

**When:**

* The camera attempts recognition.

**Then:**

* The system should attempt to identify him based on visible facial features or prompt for manual verification.