```plaintext
CopyEdit
BEGIN
    FETCH current_time
    FETCH all_schedules WHERE device_type = "light"

    FOR EACH schedule IN schedules
        IF schedule.time == current_time AND schedule.status == "pending"
            device_id = schedule.device_id
            command = "TURN_ON"
            SEND command TO device_id VIA MQTT
            LOG event "Light ON triggered via schedule" TO database
            UPDATE schedule.status = "executed"
        END IF
    END FOR
END
```

```plaintext
CopyEdit
BEGIN
    MONITOR sensor_input FROM PIR_SENSOR

    IF sensor_input == MOTION_DETECTED
        LOG "Motion detected in Living Room"
        IF time >= 10 PM
            SEND command "TURN_ON_LIGHT" TO living_room_lights
        END IF
    END IF
END
```

. Flowcharts

🖜 Light Scheduling Flowchart

```plaintext
CopyEdit
[Start]
   ↓
[Check current time]
   ↓
[Are there any scheduled events for this time?] → No → [End]
   ↓ Yes
[Trigger corresponding device action]
   ↓
[Log the action in database]
   ↓
[Mark schedule as executed]
   ↓
[End]
```

✅ *Sample API Test - Turn Light ON*

- **Endpoint:** `POST /set-light`
- **Request Body (JSON):**

```json
CopyEdit
{
  "device_id": "light-01",
  "status": "on"
}
```

- **Expected Response:**

```json
CopyEdit
{
  "message": "Light turned on successfully",
  "device_id": "light-01",
  "status": "on"
}
```