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# Document Version

| No | Update | Name | Date | Version |
| --- | --- | --- | --- | --- |
| 1. | Initial version | Gabriel |  | 1.0 |
| 1.1 | Initial version | Kevan |  | 1.1 |
| 1.3 | Initial version | Ivan |  | 1.3 |
| 1.4 | Initial version | Gabriel |  | 1.4 |
| 1.5 | Initial version | Kevan |  | 1.5 |

# 1. Purpose

* 1. Intended Audience

Fire-breakouts have been occurring as of late in HDB apartments. These breakouts especially in apartments where the elderly live alone. Such cases could have been prevented with a system that helps detect early stages of fire.

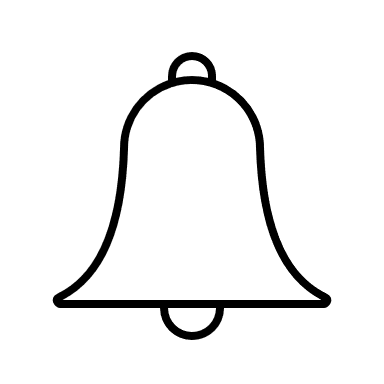
* 1. Intended Use

## 1.4. Definitions and Acronyms

| **Acronym** | **Description** |
| --- | --- |
| DHT11 | DHT11 Temperature & Humidity Sensor |
| Cam | Camera |
| LDR | Light Dependant Resistor |
| M | Motor |
| SM | Servo Motor |
| LED | Light Emitting Diode |
| Buz | Buzzer |
| Notif | Notification Sender |
| SW | Software |
| HW | Hardware |

# 2. Overall System Description

2.1. Use Case Diagrams

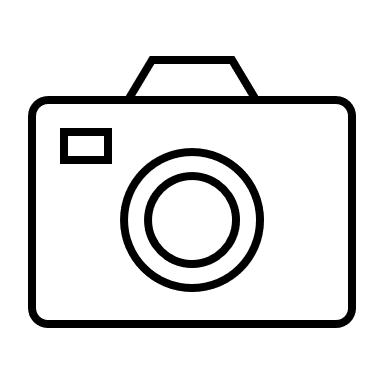


2.2. System Architecture

A green circuit board with many different components

Description automatically generatedA blue and black device

Description automatically generatedA close-up of a transistor

Description automatically generatedA blue sign with white text

Description automatically generatedA black round object with a hole

Description automatically generatedA red led with a red cap

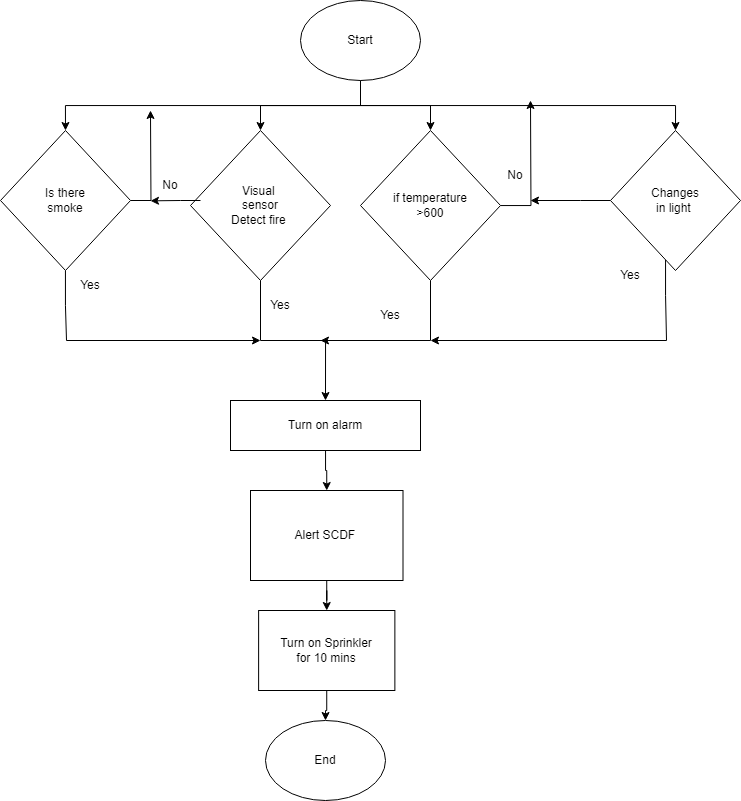
Description automatically generatedA small blue and white propeller

Description automatically generatedA close up of a device

Description automatically generated

## 2.3. Functional Requirements

| **REQ\_ID** | **Requirement** |
| --- | --- |
| REQ-01 | **Check sensors for changes.**   * Temperature sensors * Visual sensors * Light sensors * Smoke detectors |
| REQ-02 | If one of the sensors detect a change (etc increase in temp/smoke/light).   * Enable Alarm. |
| REQ-03 | If two of the sensors detect a change.   * Enable Fire Suppression (sprinkler system) * Notify SCDF |
| REQ-04 | Manual Switch for fire detection   * Enable Fire Suppression (sprinkler system) * Notify SCDF |

Flow Chart for main system 

Flow Chart for AI Detection With Camera Fire AI

