

Design document

**Development of a mobile application to monitor
an intelligent alarm system**

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1. Problematic

Protecting our homes from theft or intrusion attempts is becoming . But existing alarm systems are not precise. Because they often trigger false alarms following a gust of wind or following an animal passing. Also alarms can be activated even when a member of the family is entering home.

2. Solution

Our intelligent video surveillance system is based on the persons detection, image and video analysis. It detects any foreign individual (his face does not exist in the database already populated by the administrator).

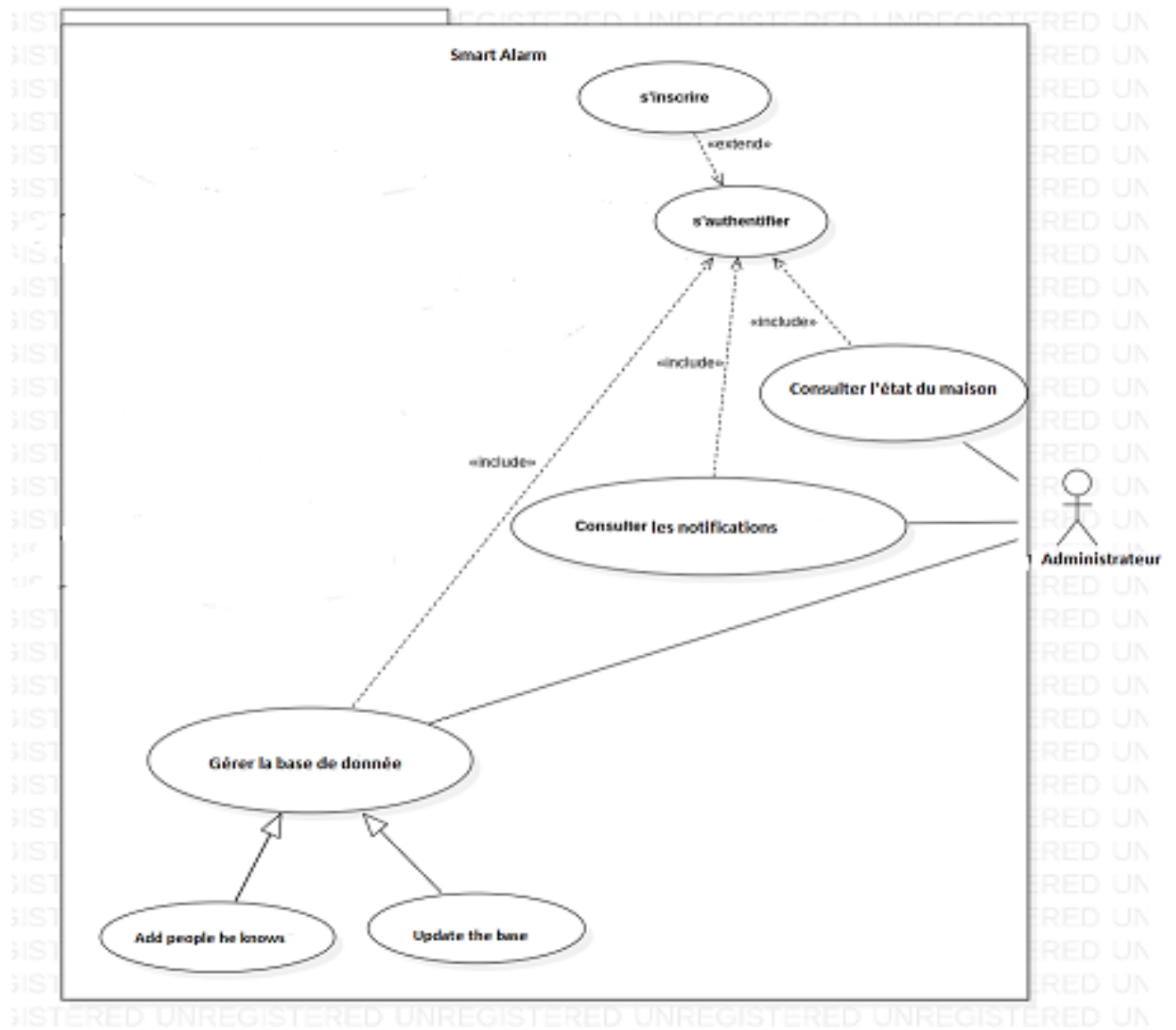
As a result, the owner of the house can consult the alerts generated, the video surveillance in real time, through the mentioned mobile application, etc.

Our solution:

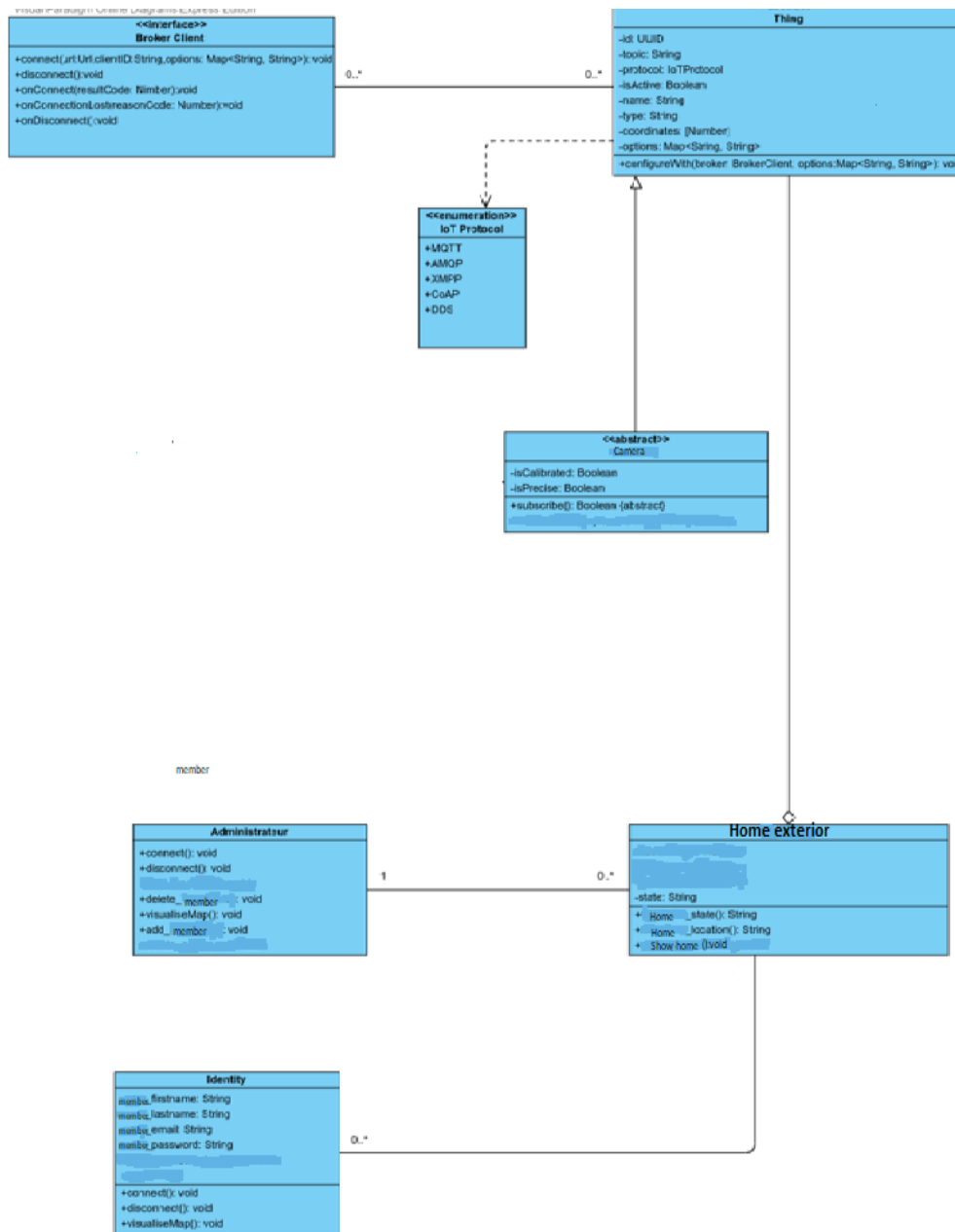
- is intended for homeowners who want to protect their homes.
- It can be always operational with a possibility of activation and deactivation.
- It will be connected to a mobile application. This app will cover the following points :

3. UML Diagrams

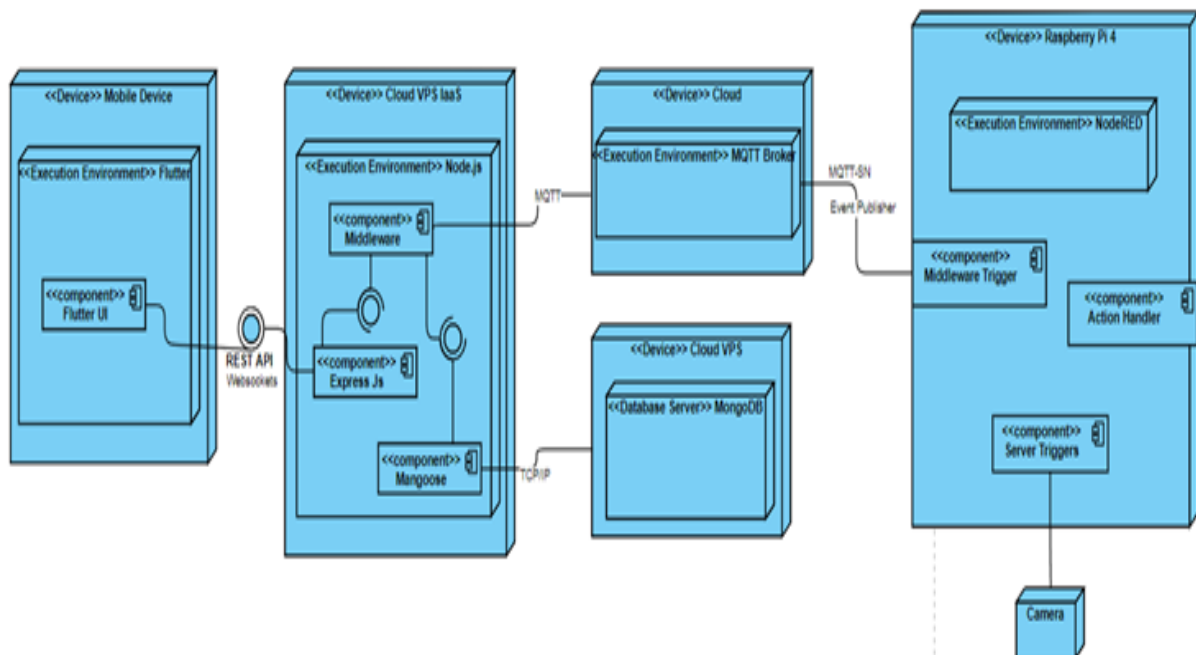
Use case Diagram :



Class Diagram :



Deployment Diagram :



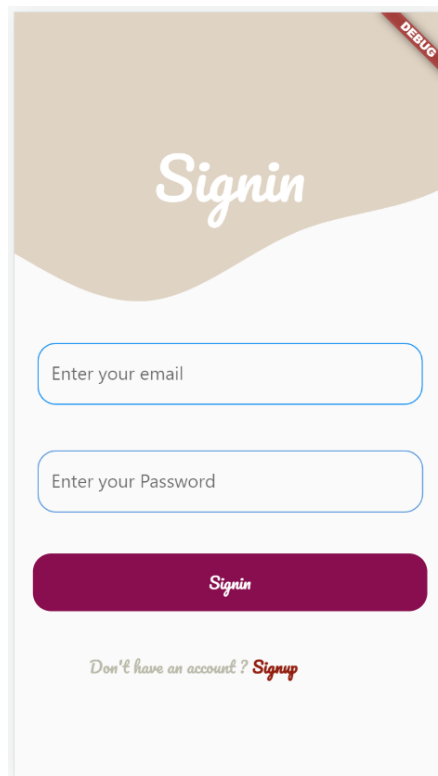
4. Interfaces réalisées :

Authentification

- **Sign up** : Initially , the administrator must sign up by creating an account .

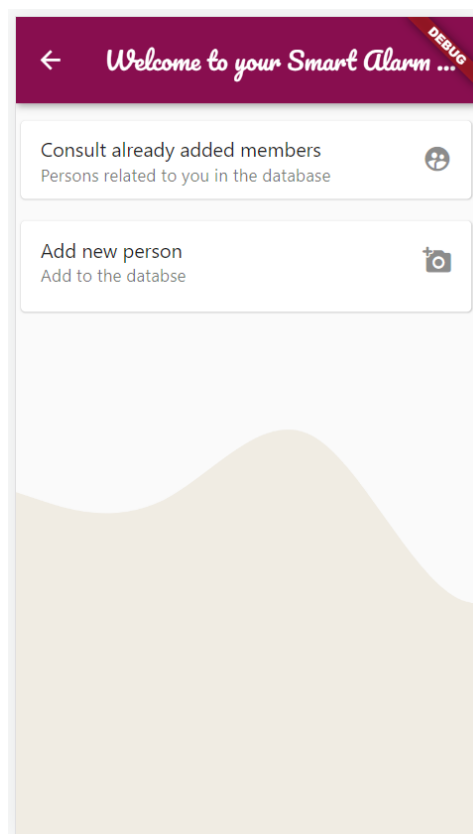
The image shows a mobile application interface for a 'Signup' screen. The header is a dark red banner with the word 'Signup' in white cursive font. Below the banner, there are two input fields: 'Enter your email' and 'Enter your Password'. A green 'Signup' button is positioned below the password field. At the bottom, there is a link that says 'Already have an account? Signin'.

- **Sign in** : Every time the administrator want to connect to the application , he must enter his email and password



A mobile app mockup for a 'Signin' screen. The background is a light beige color with a darker beige wavy shape at the top. The word 'Signin' is written in a white, cursive font. Below it are two white input fields with blue borders: 'Enter your email' and 'Enter your Password'. A dark red button with the word 'Signin' in white is positioned below the fields. At the bottom, there is a link that says 'Don't have an account ? Signup' in a small, dark red font. A red 'DEBUG' label is in the top right corner.

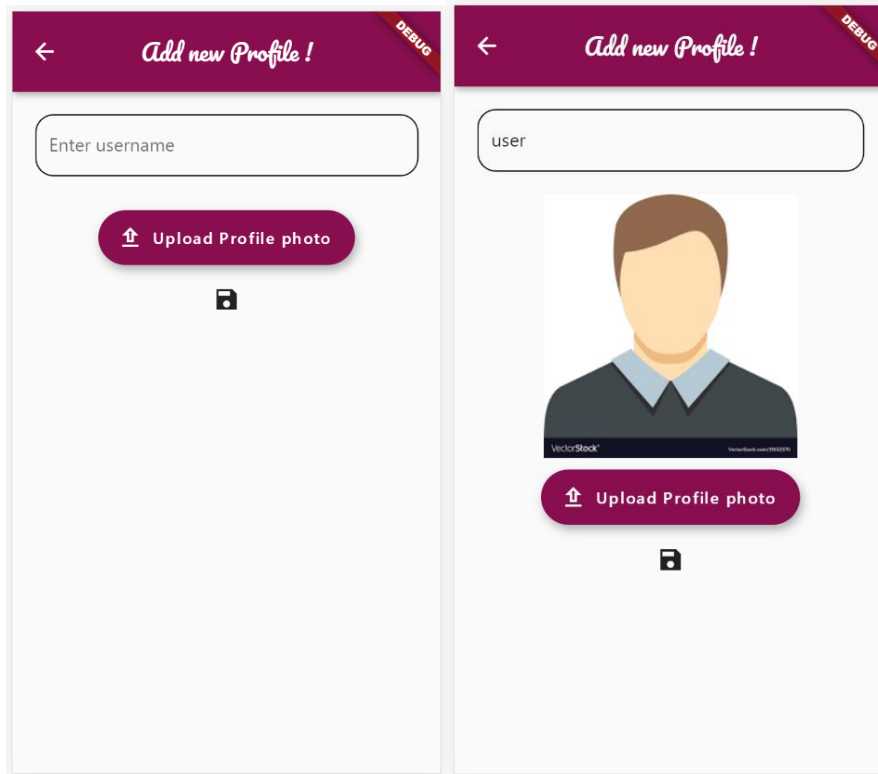
Authentification : After being logged in, the user will be redirected to the home page



A mobile app mockup for a home screen. The top bar is dark red with a white back arrow and the text 'Welcome to your Smart Alarm ...'. Below the bar are two white cards. The first card has the text 'Consult already added members' and 'Persons related to you in the database' with a circular icon containing three people. The second card has the text 'Add new person' and 'Add to the database' with a camera icon. The bottom half of the screen features a large, light beige wavy shape. A red 'DEBUG' label is in the top right corner.

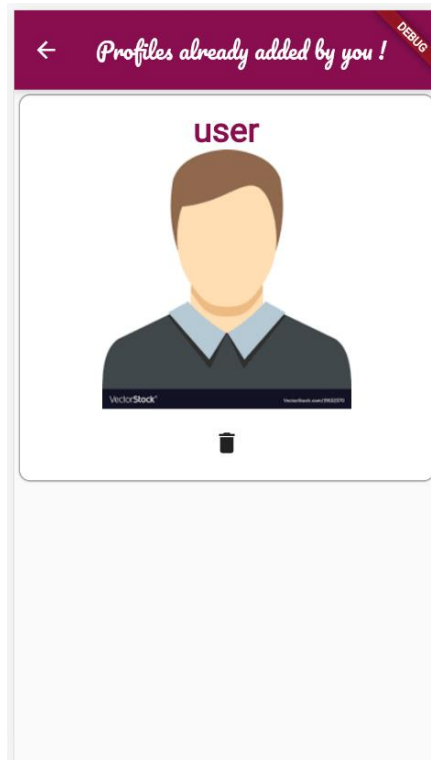
Add known persons to database :

Now , the administrator is able to easily add the people he wants the surveillance camera to recognize them by uploading his image and adding his name .



Consult profiles in his database :

Also he can consult his base regularly. This base is composed from profiles related to him



MongoDB Collections :

Overview Real Time Metrics **Collections** Search Profiler Performance Advisor Online Archive Command Line Tools

DATABASES: 1 COLLECTIONS: 2 [VISUALIZE YOUR DATA](#) [Refresh](#)

+ Create Database

Q NAMESPACES

▼ SmartAlarmDB

- profiles
- users**

SmartAlarmDB.users

COLLECTION SIZE: 577B TOTAL DOCUMENTS: 2 INDEXES TOTAL SIZE: 72KB

Find Indexes Schema Anti-Patterns ⓘ Aggregation Search Indexes ●

INSERT DOCUMENT

FILTER { field: 'value' } **OPTIONS** **Apply** **Reset**

QUERY RESULTS 1-2 OF 2

```
{
  "_id": ObjectId("61cc8be6c3e46c98e3f78ebc"),
  "username": "malek.fakhfakh@supcom.tn",
  "password": "$argon2id$v=19$m=65536,t=11,p=2$otVhJnqHfEGPpr3QDlyfqpTcobWuGx1jvEv/H2...",
  "permissionLevel": 1,
  "created_at": 2021-12-29T16:25:18.248+08:00,
  "__v": 0
}
```

+ Create Database

Q NAMESPACES

▼ SmartAlarmDB

- profiles**
- users

SmartAlarmDB.profiles

COLLECTION SIZE: 1.02KB TOTAL DOCUMENTS: 7 INDEXES TOTAL SIZE: 36KB

Find Indexes Schema Anti-Patterns ⓘ Aggregation Search Indexes ●

INSERT DOCUMENT

FILTER { field: 'value' } **OPTIONS** **Apply** **Reset**

QUERY RESULTS 1-1 OF 1

```
{
  "_id": ObjectId("61d747c608217fb3e1a3dfdc"),
  "username": "user",
  "CreatedByUsername": "malek.fakhfakh@supcom.tn",
  "image": "upload/images/image1641498566723.jpg",
  "__v": 0
}
```