SUP'COM
Higher School of Communication of Tunis

Design Document of COT project

Project name :

Help controlling and reporting the situation of animals

We Care

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Introduction :

Animals have been considered human's closest friends for a very long time. We are dependent on them for food and security (Habitat). Every animal in the world needs to be taken care of by providing them food, shelter, and health care. The behavior of most of domestic animals is mainly observed by how we treat them. If we treat them with good care, love and compassion, they will definitely show the same love and respect towards us.

Animals are dependent on us whether in our presence or absence, so we should provide them with the same safety level in both cases.

The impact of our absence, lack of care, and abundance of animals whether in-home or even in the protectorates and zoo is highly contributing to the illness and weakness of those, especially rare species and those which need highly health care (pregnant, ill...).

The objective of the project :

The project objective is to create a system capable of measuring an animal's body temperature and heart rate (ECG: electrocardiogram) then send the measures taken to an application that will process this data and extract the health status of the animal and send a status report to the keeper. In case of danger, the application will trigger an alert that will be received by the owner who will intervene to save them before reaching any high-level complications.

UML Diagrams :

1. Use case diagram :

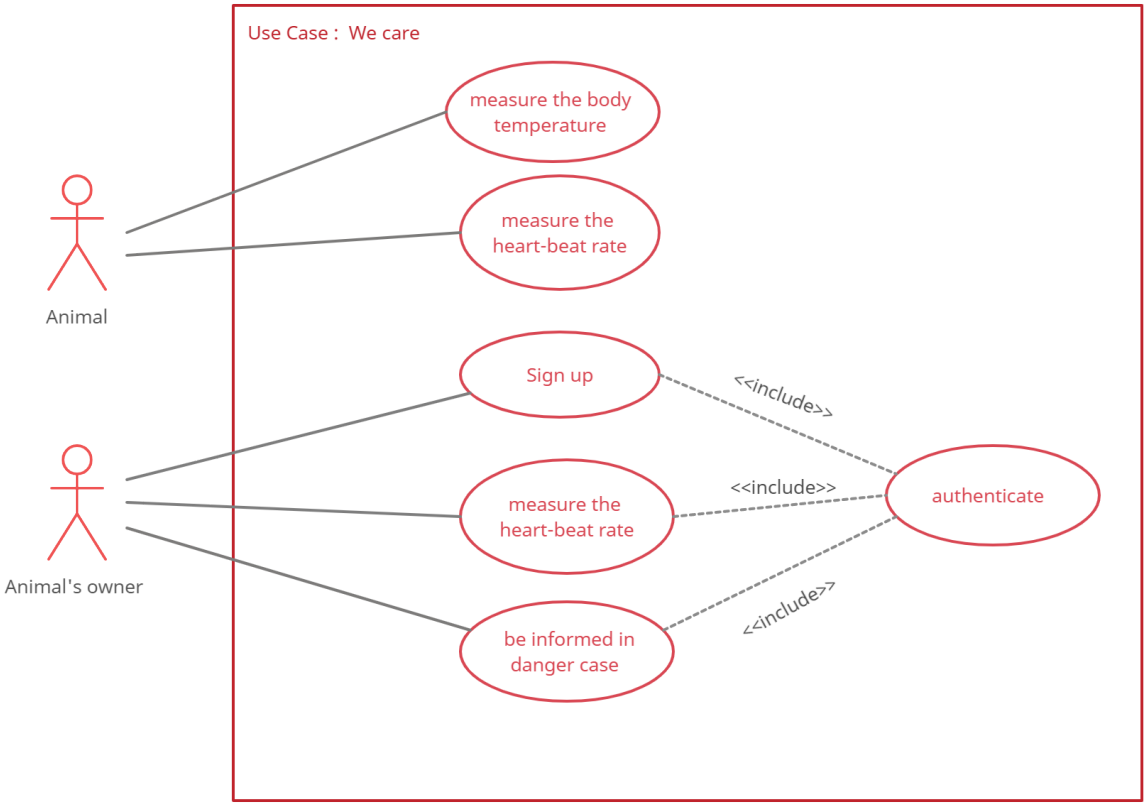
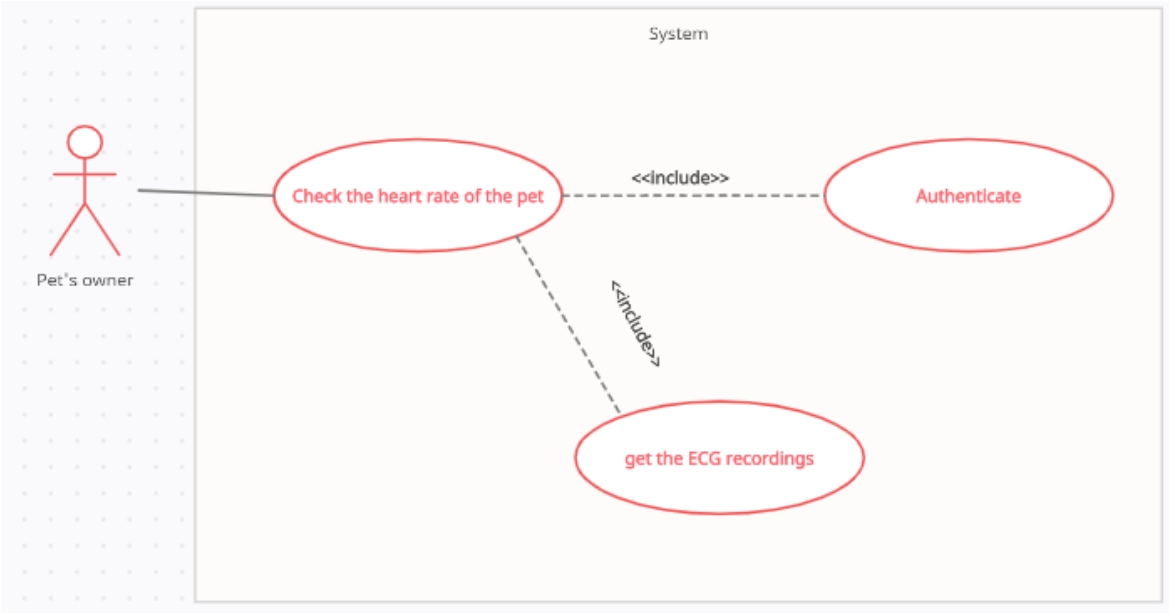
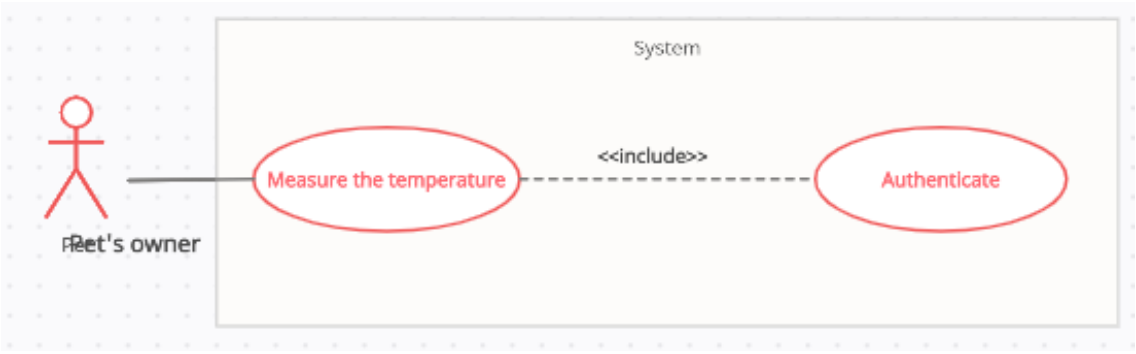
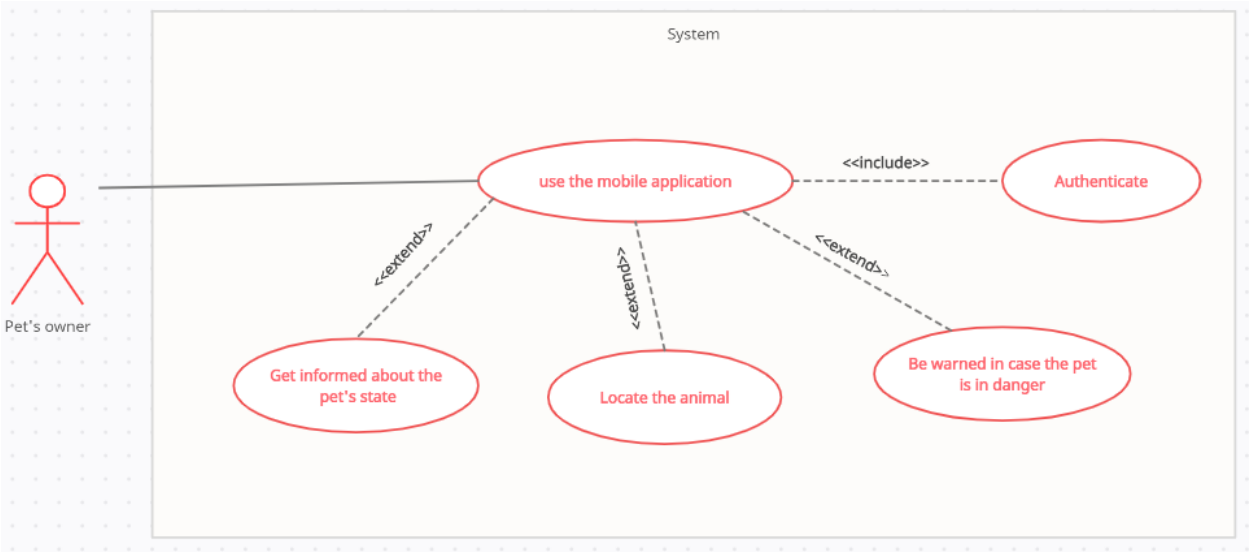


figure 14: Use case diagram


System
Pet's owner
Check the heart rate of the pet
<<include>>
Authenticate
<<include>>
get the ECG recordings


System
Pet's owner
Measure the temperature
<<include>>
Authenticate


System
Pet's owner
use the mobile application
<<include>>
Authenticate
<<extend>>
<<extend>>
<<extend>>
Get informed about the pet's state
Locate the animal
Be warned in case the pet is in danger

2. Component diagram :

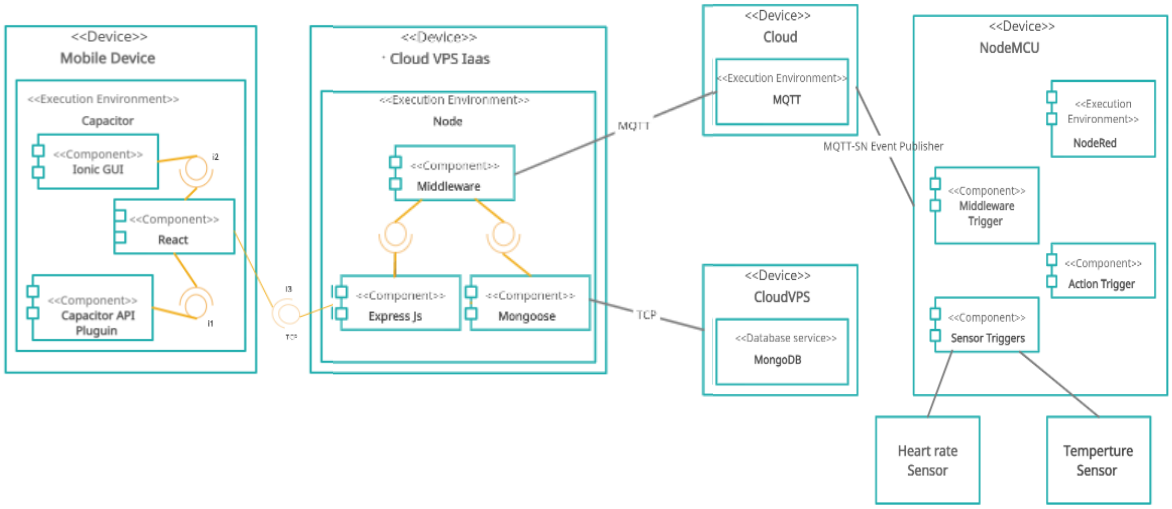
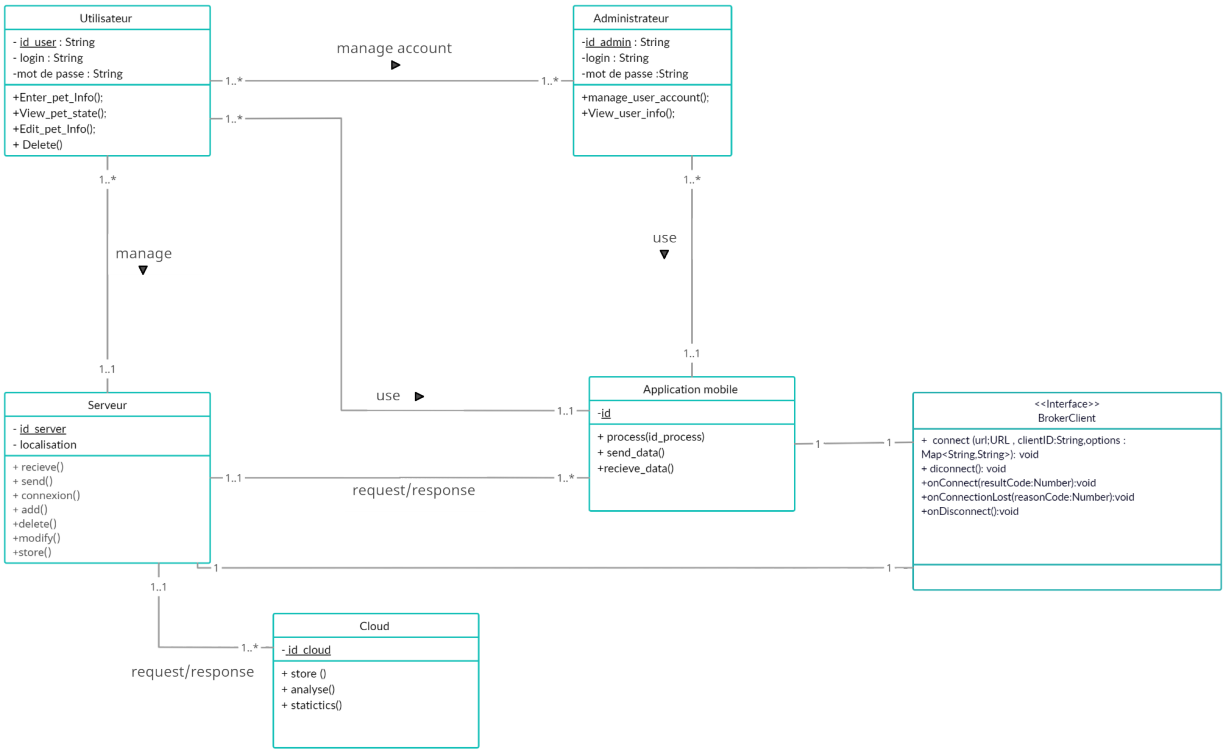
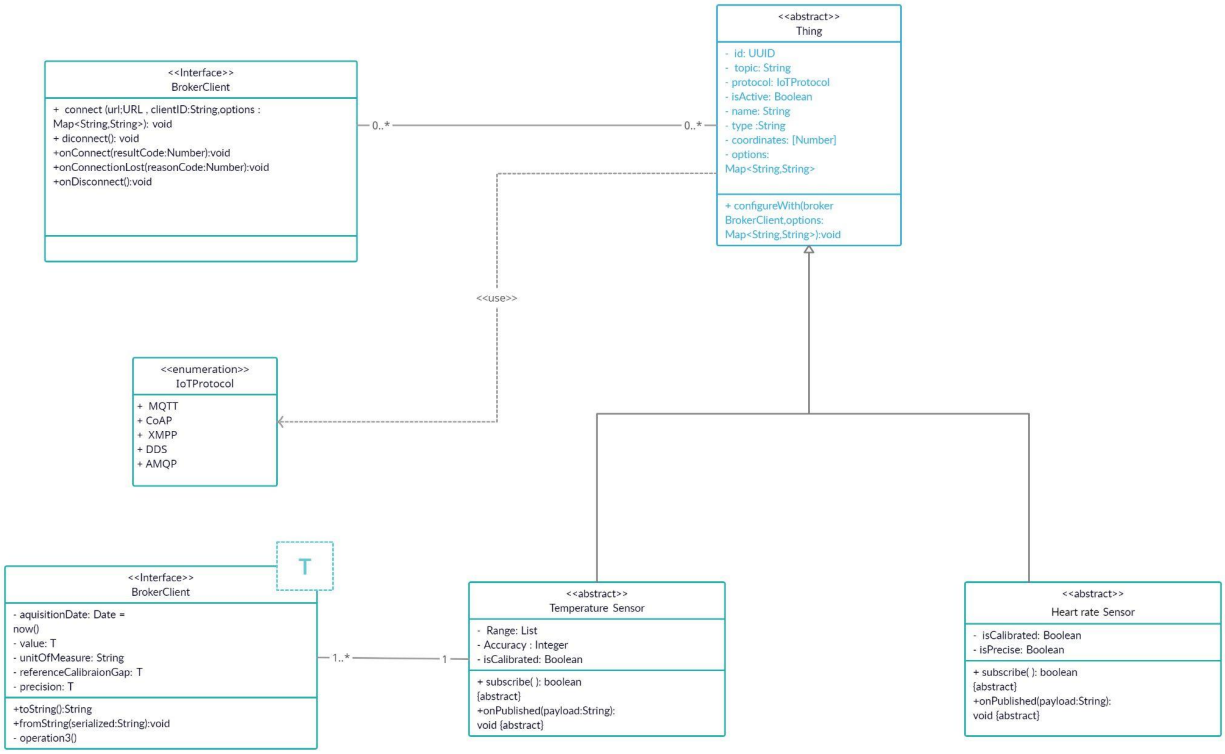


figure 15: Component diagram

3. Class diagram :




<<Interface>>
BrokerClient
+ connect (url:URL , clientID:String,options :
Map<String,String>): void
+ diconnect(): void
+onConnect(resultCode:Number):void
+onConnectionLost(reasonCode:Number):void
+onDisconnect():void
0..*
0..*
<<abstract>>
Thing
- id: UUID
- topic: String
- protocol: IoTProtocol
- isActive: Boolean
- name: String
- type :String
- coordinates: [Number]
- options:
Map<String,String>
+ configureWith(broker
BrokerClient,options:
Map<String,String>):void
<<use>>
<<enumeration>>
IoTProtocol
+ MQTT
+ CoAP
+ XMPP
+ DDS
+ AMQP
T
<<Interface>>
BrokerClient
- aquisitionDate: Date =
now()
- value: T
- unitOfMeasure: String
- referenceCalibraionGap: T
- precision: T
+toString():String
+fromString(serialized:String):void
- operation3()
1..*
1
<<abstract>>
Temperature Sensor
- Range: List
- Accuracy : Integer
- isCalibrated: Boolean
+ subscribe( ): boolean
{abstract}
+onPublished(payload:String):
void {abstract}
<<abstract>>
Heart rate Sensor
- isCalibrated: Boolean
- isPrecise: Boolean
+ subscribe( ): boolean
{abstract}
+onPublished(payload:String):
void {abstract}

4P Marketing Matrix :

Product :

Technical features and characteristics	- Monitor body temperature and heart rate. - Analyze the health of the pet and send a report to its owner. - Trigger an alert in case of danger.
Quality	- Specific measures -Real-time tracking -Early warning in case of danger.
Product-related services: after-sales service	customer service

Price :

price	Subscription: user 1 month: 50dt
How to pay	online payment

Place :

Our customers can download the app from the App Store and Google Play or via a web browser.

Promotion :

Marketing On ligne:

Online reputation is essential to a digital marketing strategy. A negative social media campaign or bad comments can harm the company's brand image, continuous monitoring and prompt action by the «community manager» are necessary to save the brand's digital reputation.

Marketing:

• Provide a good coverage.
• Cheaper than traditional marketing
• Allows you to monitor the effect of communication actions (number of clicks, likes, number of followers, etc.)
• Allows you to create a community around the application.

→ It is for these reasons that we have chosen these digital communication tools:

Create a website:

• A site available anytime and accessible from anywhere
• A way to improve the customer service
• A way to present the application

Social media:

We will create a Facebook page, a YouTube channel and an Instagram page to promote our app. In addition, we can partner with influencers on social media to recommend our app to their patients and followers.

Off Line Marketing:

Advertising hoarding in areas where there is a high concentration of clinics veterinarian and clinics for domestic animals.

Participation in events related to animals.

Conclusion :

This project will be highly beneficial for animals as well as animal keepers. We aim to create a more trustful and certain environment where animals are kept to high health standards. Thus we will be essentially contributing to healing animals wherever and whatever: rare animals, those in the zoo, in shelters, and in homes. We will be assuring the health of all of them thanks to our project concept.

In this project we considered the idea of a web of things application where we set up sensors to control the animal then in real-time we send and visualize results in the mobile app designed to be the communication tool with the animal's keeper. Thus we keep an eye on animals to prevent any dangerous situation.