

# **SHRI RAMDEOBABA COLLEGE OF ENGINEERING AND MANAGEMENT**

**Department of Computer Science and Engineering**  
**Session 2019 - 20**

## **SOFTWARE-TECH LAB-II** **PROJECT**

**VI Semester B.E Shift-I**

### **GROUP MEMBERS**

**Akshay Mishra (33)**

**Amey Bhutada (35)**

**Amin Maskati (36)**

**Anand Sharma (37)**

### **COURSE COORDINATOR**

**Prof. Samir Ajani**

## CERTIFICATE

This is to certify that this project on “**Stray Cattle Problem**” is a bonafide work of Akshay Mishra, Amey Bhutada, Amin Maskati, Anand Sharma submitted to the Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur in partial fulfillment of the award of a Bachelor of Engineering in Computer Science has been carried out at the Department of Computer Science and Engineering, Shri Ramdeobaba College of Engineering and Management, Nagpur during the academic year 2019-20.

Date :

Place : Nagpur

Prof Samir Ajani

Project guide

Department of Computer Science and Engineering

Dr. M.B Chandak

H.O.D

Department of Computer Science and Engineering

## **DECLARATION**

We hereby declare that the project report entitled “**Stray Cattle Problem**” submitted by us to Shri Ramdeobaba College of Engineering and Management, Nagpur in partial fulfillment of the requirement for the award of the degree of B.E in COMPUTER SCIENCE is a record of bonafide project work carried out by us under the guidance of Prof. Sameer Ajani . We further declare that the work reported in this project has not been submitted, either in part or in full, for the award of any degree or diploma in this institute or any other institute or university.

**Place:**

**Date:**

### **Signature of Team Candidates**

Akshay Mishra (33) -

Amey Bhutada (35) -

Amin Maskati (36) -

Anand Sharma (37) -

## **ACKNOWLEDGEMENT**

We would like to thank Prof. Samir Ajani, Shri Ramdeobaba College Of Engineering and Management, for supervising this project and giving assistance when faced with problems. Without his guidance and persistent help, this project would not have been possible. Their guidance, support and motivation enabled me in achieving the objectives of the project.

## **TABLE OF CONTENTS**

<b>SR. NO</b>	<b><u>TOPIC</u></b>	<b><u>PAGE NO.</u></b>
1	Certificate	2
2	Declaration	3
3	Acknowledgement	4
4	Introduction	6
5	Survey & Existing System	9
6	Design	12
7	Methodology	15
8	Output	20
9	References	21

## **INTRODUCTION**

### **PROBLEM STATEMENT :**

The problem of stray cattle on roads is not new in India, and these animals often bring the flow of traffic on busy roads to a standstill along with major road accidents. Stray cattle roaming around freely in the cities have become a serious problem. The menace of stray cattle can be controlled by involving Municipalities, Panchayats, Animal Husbandry, NGO and Civic Forum. Fundamentally there is a disconnection between civil agencies, people and elected representatives.

The aim is to build a mobile based dynamic reporting system which will facilitate the flow of information among all concerned stakeholders. The aim is to provide better governance by more involvement of the public.

### **STRAY CATTLE ISSUE:**

The problem of stray cattle on roads is not new in India, and these animals often bring the flow of traffic on busy roads to a standstill along with major road accidents. Stray cattle roaming around freely in the cities have become a serious problem.

The situation turns all the more worse at night when it becomes difficult for the drivers to spot the stray animals due to darkness. The police are also silent over the issue. These animals also pose problems to drivers; especially during the night. Vehicles usually move at a high speed on the roads thus posing more risk to the lives of their occupants as well as stray animals. These abandoned animals can be spotted at many points in the city.

Most cows roaming in the streets of cities like New Delhi, Allahabad, Ujjain, cities in Haryana and other parts of India are not healthy cows; they do not live on grass or other hygienic foods. Most of these cows constantly eat food from garbage and leftovers. Even though it may not be obvious, many of them are actually diseased or sick. So, eating their meat or drinking their milk is raising the health concerns.

There is overwhelming evidence that animals are reservoirs for several of the most important food-borne and waterborne agents. Manure and wastewater from animal feeding operations have the potential to contribute pathogens and pollutants, such as antibiotics, nutrients (nitrogen and phosphorus), hormones, sediments, heavy metals, organic matter, and ammonia, to the environment and eventually could impact human health. Some of the illnesses resulting from these agents cause only temporary health problems, while others cause severe crises and even death.

Most of these cows come from illegal or unregistered roadside dairies and cattle sheds, many are actually left by owners because they become old, stop giving milk or they cannot afford them any further. Non-milking cattle are also left loose to save on their feed. The owners, after milking the cattle, let them loose so that they can graze outside. Non-milking cattle are also left loose to save on their feed.

The problems of impounding these cattle are many:

- The paucity of trained manpower with the Municipal Corporation to catch and load them in a truck.
- Lack of Gaushalas with adequate space.
- The tendency of the neighbouring towns/cities to catch their stray cattle and leave them outside near the next city.
- Many lives have already been lost and many others have been injured due to accidents involving stray cattle, especially in the rainy season, due to the cow dung roads becoming slippery which invites the road accident in a great way.

#### **Initiatives taken by some state government**

- Rajasthan state government gave an incentive of Rs 50 per cattle per day to any one for the upkeep of stray cattle. "Sheds should be built along the highways where the stray cattle should be herded and lodged".

- The process to set up five cow sanctuaries in Uttar Pradesh has been initiated apart from 426 existing 'Gaushalas' in the state. The problem of stray animals, causing traffic blockades and accidents on city roads, is increasing day-by-day due to the lackadaisical attitude of the administration towards the issue.
- The Delhi government has hired about 150 stray cows' catchers who are supposed to bring 10 cows per day. These people know that if all the cows are removed they will eventually lose their job. Due to the corruption, these stray cattle often make their way back on the street and are often caught multiple times.

### **Way Ahead**

- The solution lies in relocating the dairies, centrally, outside the city.
- The authorities have to create infrastructure for these dairies so that the owners can operate them. Thereafter, creating huge Gaushalas, at appropriate locations, which can take care of stray cattles.



## **SURVEY AND EXISTING SYSTEM**

### **How many stray cattle in India?**

India had approximately 52 lakh stray cattle according to its last Livestock Census, published in 2012. The country has not conducted a census since then, so there has been no realistic estimate of cattle numbers for eight years. The number of cattle, however, is likely to have increased.

In the absence of reliable figures, other government departments that rely on this data have resorted to their own estimates. The Department of Animal Husbandry, for instance, makes rough estimates of milk-producing cattle based on milk production numbers and average yields.

According to a 2017 report by the department, the number of milk-producing exotic or cross-bred cattle in Uttar Pradesh alone doubled from around 6.5 lakh in 2012-'13 to 13.03 lakh in 2016-'17. This includes only cows capable of rearing calves and does not account for old and young cows, or bulls of all ages that would have been counted in the Livestock Census. With the increasing mechanisation of agriculture, bulls are no longer economically productive and so are the first to be abandoned.



## **DRY DAIRY CONCEPT TO TACKLE STRAY CATTLE PROBLEM IN INDIA-Pashudhan Praharee**

The concept of dry dairy farming uses traditional methodologies for composting cow dung into manure, creation of biogas, preparation of biopesticides from cow urine and other innovative ecological initiatives. This module presents India with an opportunity to be the world's first organic nation. It benefits society via skill development, employment, the availability of organic manure and green energy. It helps the animals by providing them with an earned retirement. It is essentially a win-win solution for all stakeholders. Dry dairies are spaces where bovines who can no longer lactate enough and male calves can be kept, given a sustenance diet and they can fuel the village, its fertilizer requirement and take India towards an organic future. It involves the creation of biogas plants and vermicompost pits to make sure that the energy requirements and fertilizer needs are sustainably met. It is a futuristic and scientific solution rooted in our culture. The dry dairy model presents an innovative solution in which the state and the animals greatly benefit.

Many states in India are currently facing drought-like situations, namely Karnataka, Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Jharkhand, Bihar, Haryana and Chhattisgarh. The utilisation of chemical fertilizers on these lands only exacerbates the problems faced by the farmers as these chemicals dry the land and make farming in the future much harder. The chemical fertiliser industry is worth over Rs 70,000 crores and stands to be hit by this model. Vermicompost is sold for Rs 200 to Rs 500 for 10 kgs — this price can be brought down hugely and it can be made available to the average farmer. Much like Sikkim, every state can go organic. Much can be said about the health benefits to the average citizen who today for lack of options consumes food that has been grown with chemical fertilisers.

## **METHODOLOGY AND OUTPUT**

### **PART I:- Type of User's**

There are mainly three types of users:-

- 1.Normal user(Public)
- 2.Professional
- 3.Admin.

### **PART II:- Role of Each User**

#### **Normal User(Public) :-**

Their role for this application is to make a complaint at their respective interface if they found any stray cattle.

#### **Professional User :-**

Their role is to visit the location of the cattle, send by the normal user and take the cattle to the organizations or the agencies which will look after them.

#### **Admin :-**

He is the one who has the right to create the professionals at different places. And he also looks after the quality of work performed by the professionals.

### **PART III:- User Interface**

We have developed an Mobile Application to solve the problem of stray cattle using the famous tool for an mobile application development i.e. , Android Studio.

#### **Android Studio :-**

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

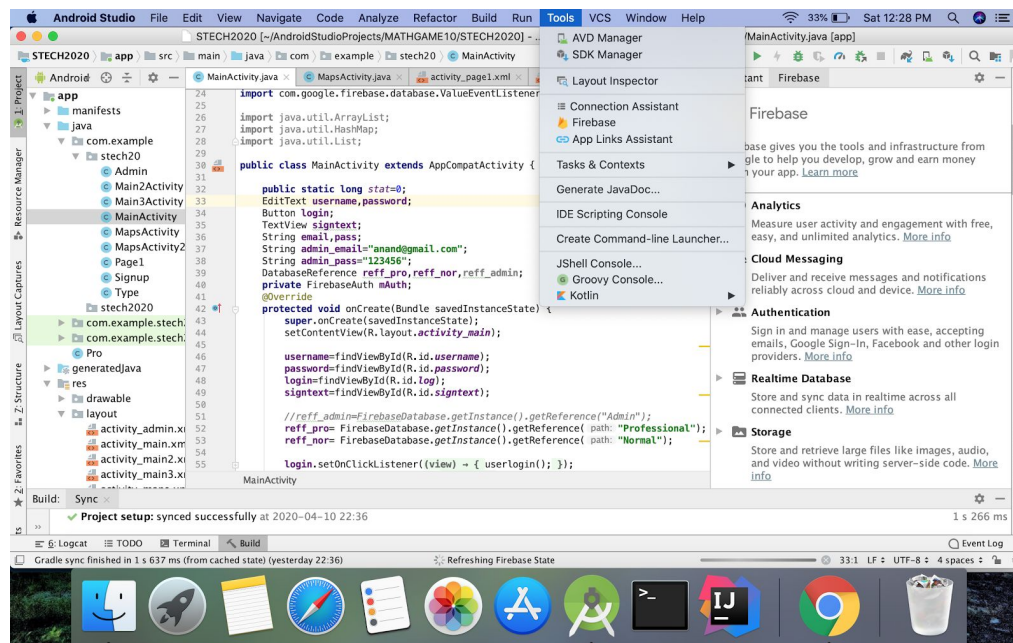
## PART IV :- Database (Firebase)

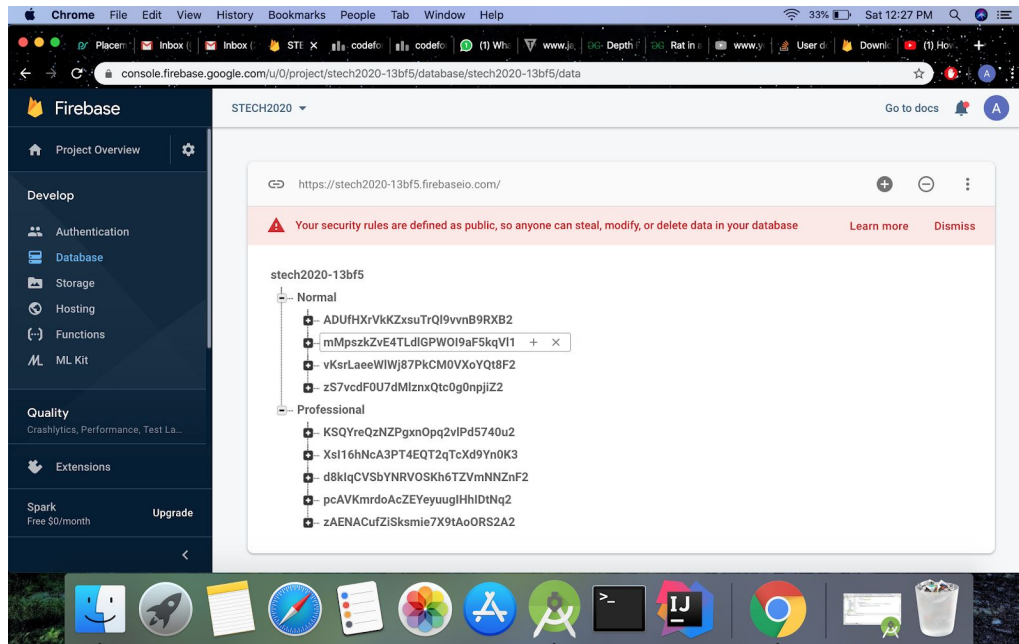
To store the essential data for the future use we need a database, so to handle that sought of data we have used Firebase.

Firebase is a platform for building mobile and web application. You can build application quickly with real time data update. Using firebase is very easy and it stores data in JSON format. You do not need to configure your server when you use firebase. Every thing will be handled by firebase automatically. So no coding on server side. It will save time and will make you more productive.

### Why Firebase?

**Because Android directly supports Firebase. It is present in the tools section.**

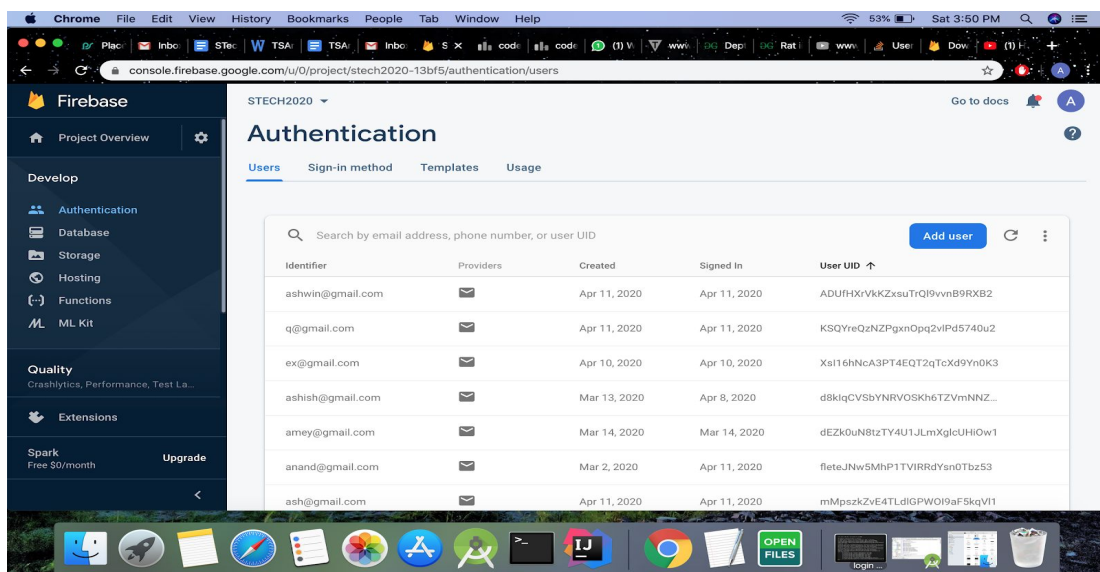




The above pictures show the interface of the Firebase.

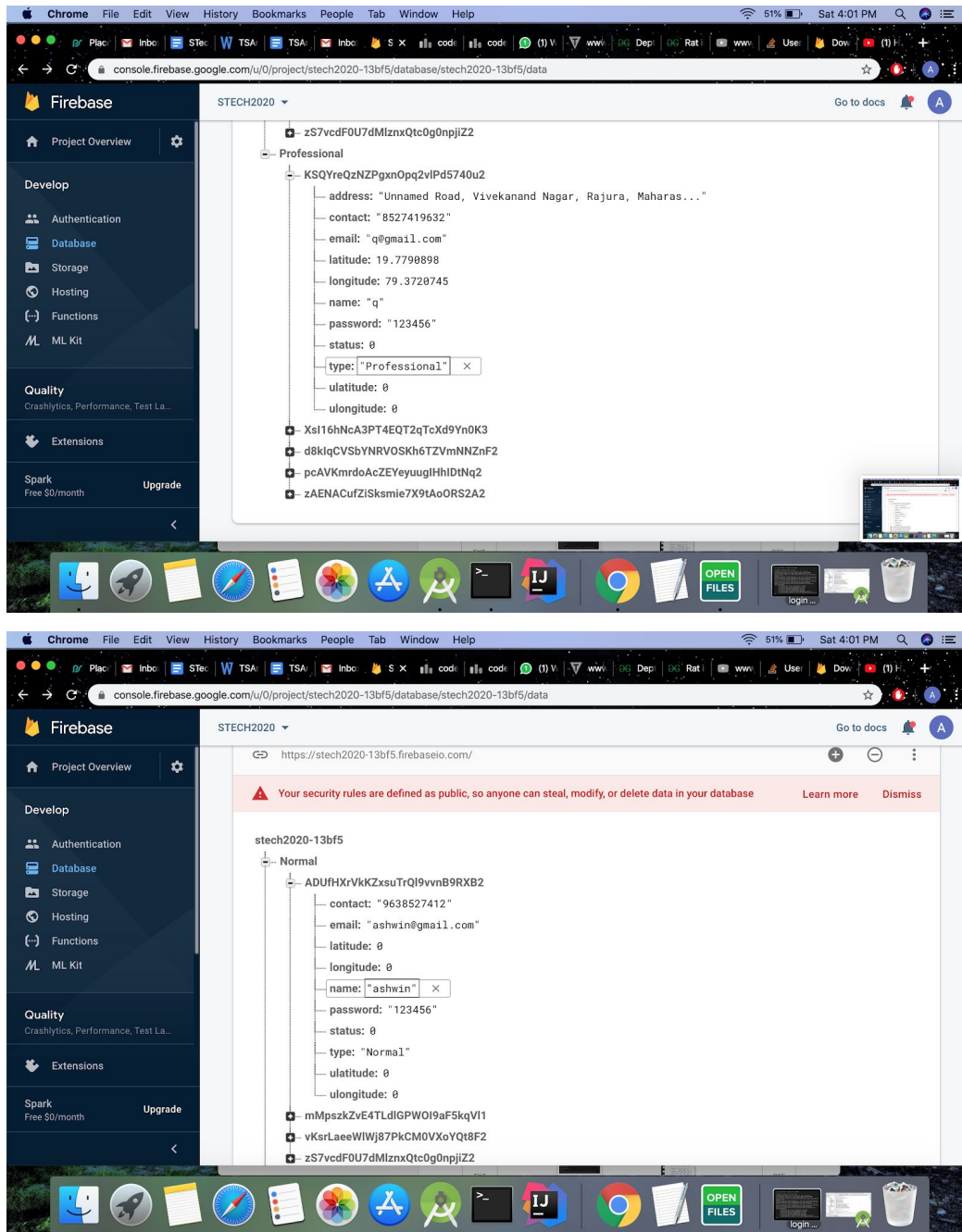
## **PART V :- Features of Firebase used in Stray Cattle App.**

1. **Authentication:-** User's essential details like email and password were authenticated using FirebaseAuth.



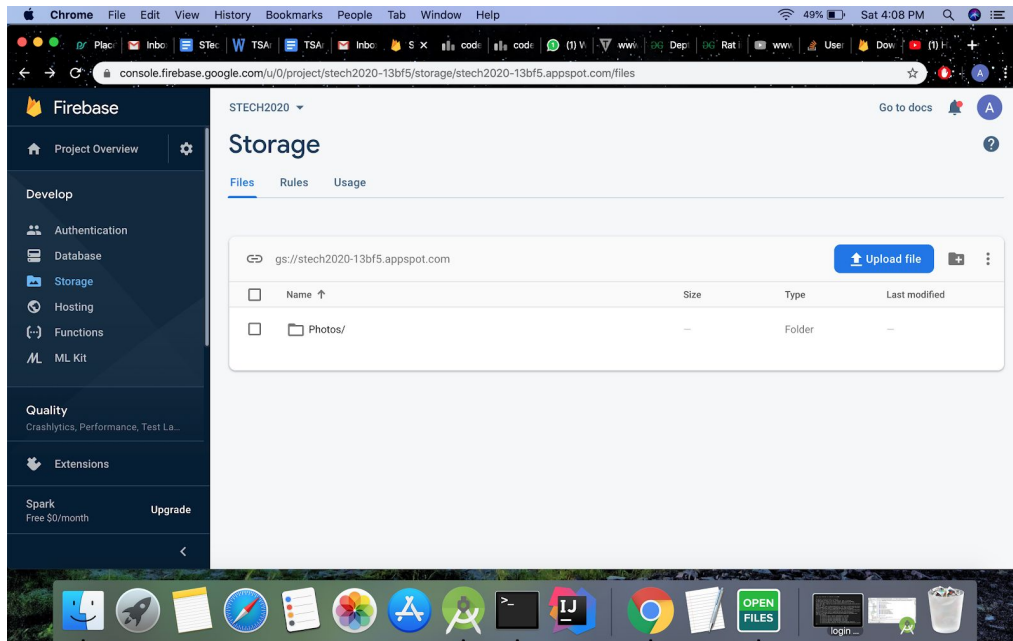
2. **Database** :- We have used RealTime Database, to store the required and the essential data into the database.

The data required is shown in the picture below:-



The two pics show that there are two types of users i.e., Professional and Normal. Both of them are in different branches as both have different work to do.

3. **Storage** :- It is used in our application to store the images of the cattle picked by the public, so that the assigned professional is able to see those pictures and verify the cattle.



## **PART VI :- Creation of Professionals**

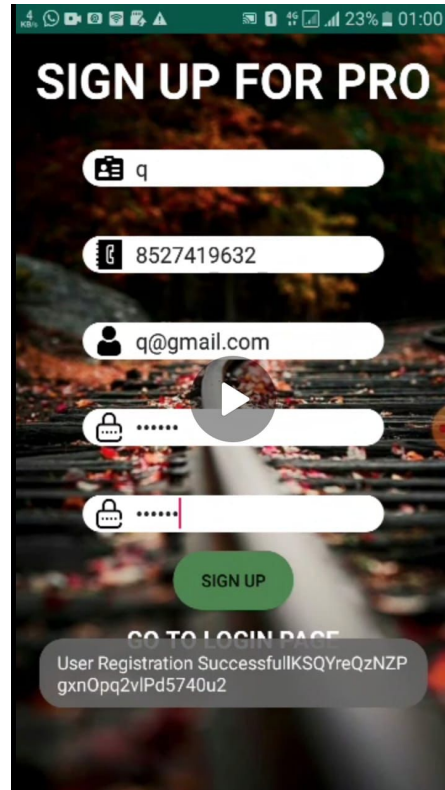
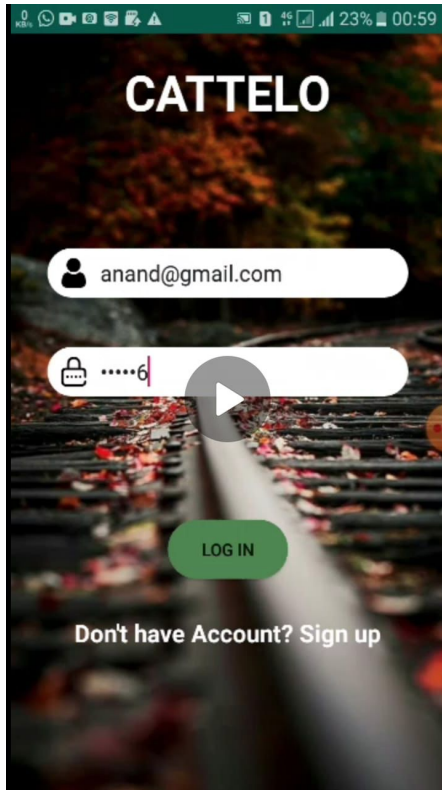
The main part of the complete system is the sufficient amount of professionals in most of the areas, so that most of the complaints can be handled.

So as we mentioned earlier these professionals can only be created by the **Admin** only he has the access to create the professionals.

### **Process of Professional Creation:-**

First the admin logs in using his registered email, if the credential matches to the credentials of the admin than a new page is opened which shows the **SIGN UP FOR PRO** from here the admin creates the Professional.





Here the admin is [anand@gmail.com](mailto:anand@gmail.com).

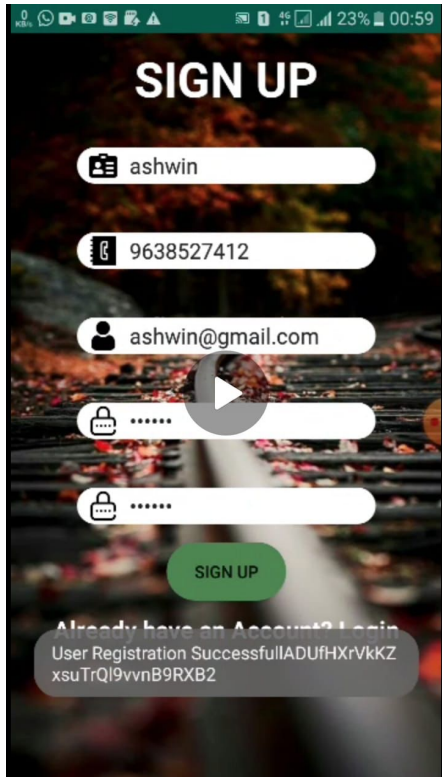
## **PART VII :- Flow of Complete Process**

The process is divided into different steps, the steps are as follows:-

### **Step 1:-**

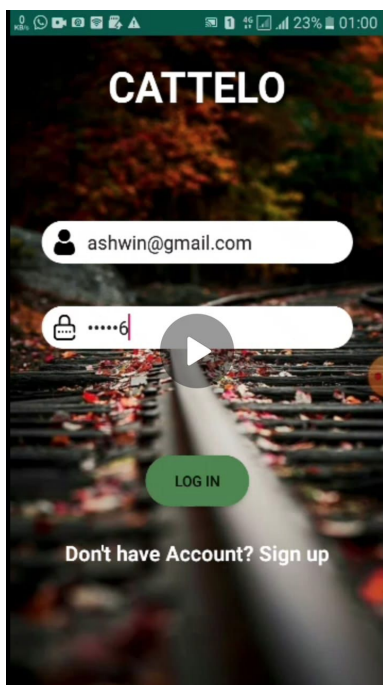
As the user opens the app he/she has login into his/her profile. If he is not the registered user then he needs to sign up first. So first step is to sign up Yourself into the system.



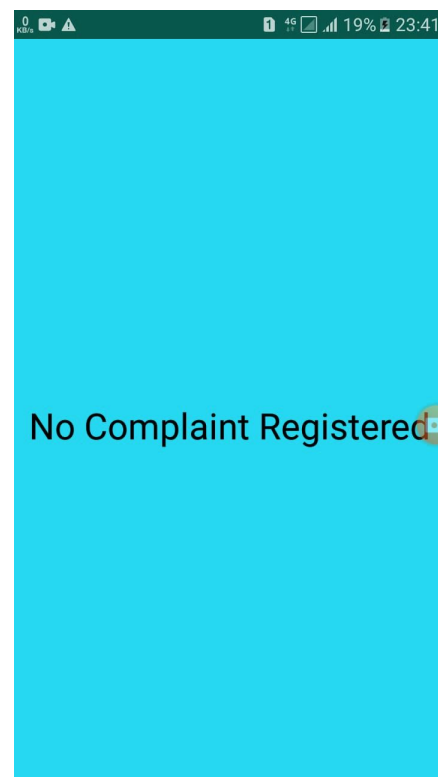
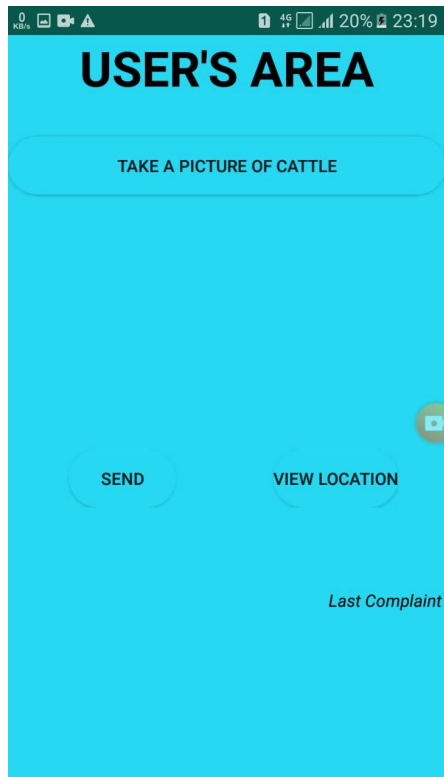


## Step 2:-

As the cattle spotted by the user he will sign in.

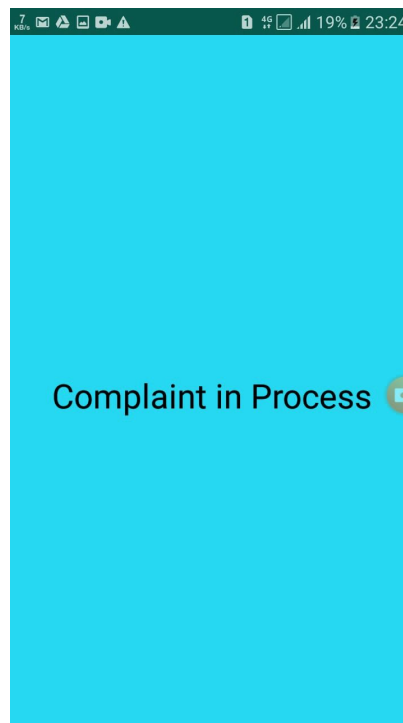
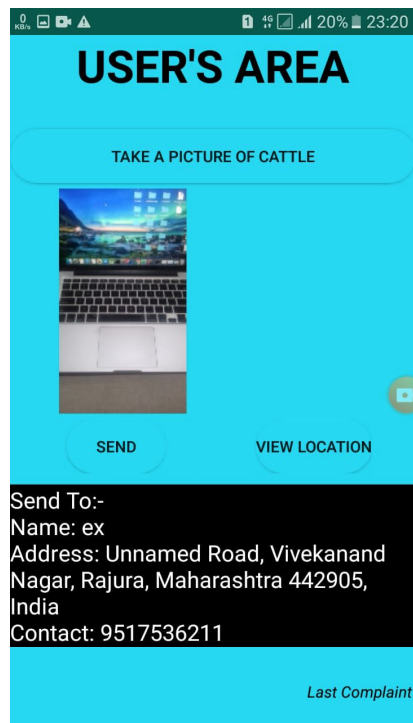


As he signs in he will see a new page in which first he needs to click a picture of the cattle. And yet there is no complaint made, the **Last Complaint** button will show the status of the current complaint.

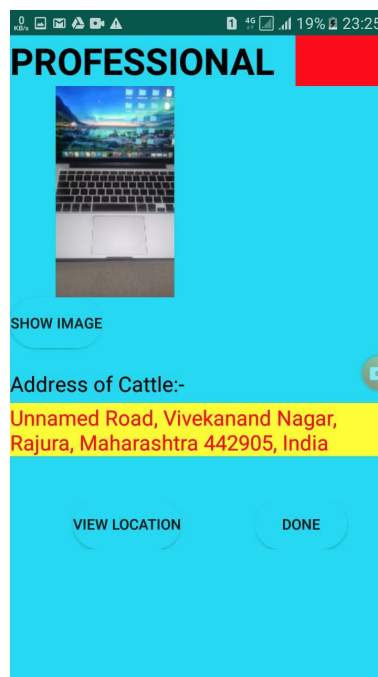
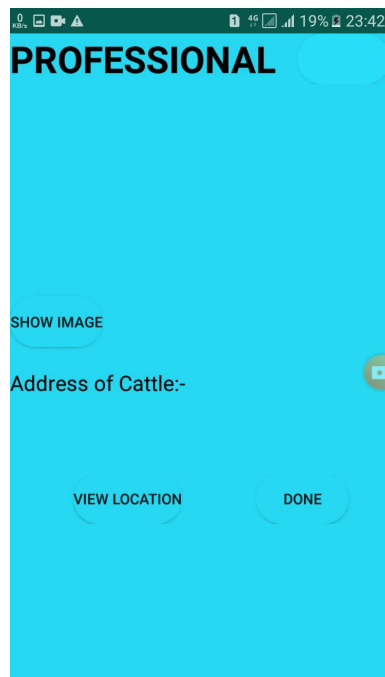


Now as the user clicks the picture and clicks on the **SEND** button the complaint will go to respective professional i.e., the nearest professional(Which is calculated using the ManHattan distance) by the location API.

The below image will show how the users screen changes after clicking the **TAKE A PICTURE AND SEND** button:-



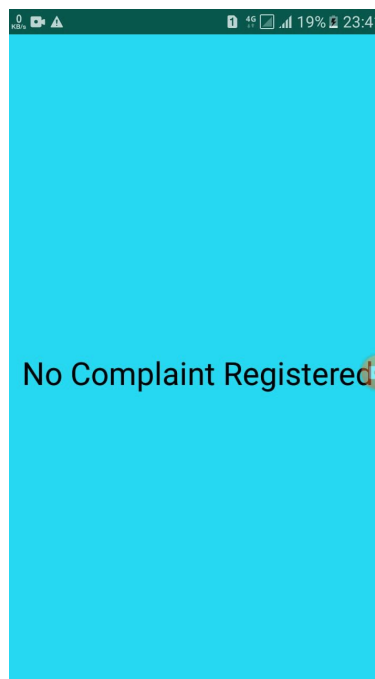
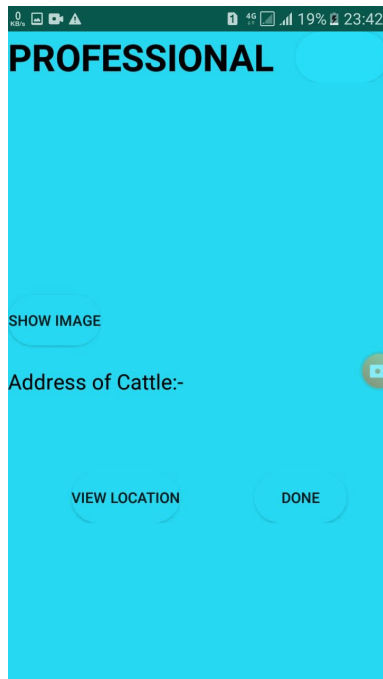
The below image will show how the Professionals screen before and after clicking **SEND** button by the user:-



### Step 3:-

Now as the Complaint received by the Professional he has the address, location and image of the cattle. He will visit the Location solve the complaint made by the user. As he completes his process he will click on the **DONE** button and his screen gets cleared and the notification is sent to the user and his Last Complaint section is updated.

The below image shows screen of Professional and Last Complaint section of the user after solving the Problem:-



In this way the complete process takes place.

## **CONCLUSION**

The designed app will prove helpful in tackling the stray cattle problem. The concerned authorities will find it much easier to address the issue and the public will also be able to do their part pretty easily. Due to the formulation of this app, the count of stray cattle will decrease drastically and with this other factors like diseases and traffic congestion will also decrease.

Some more enhancements that can be made in this application are:

1. Use machine learning for better precision of location of animals.
2. Maintain every user's report and reward them points.
3. Add a feature of crowdfunding by linking payments API.

## **REFERENCES**

1. Problem statement : <https://www.sih.gov.in/sih2020PS>
2. Images : <https://www.google.com/imghp?hl=en>
3. Survey : <https://iasscore.in/national-issues/stray-cattle-issue>