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**Faculty of Computers and Artificial intelligence**  
**Department of Network Technology**

**Citizen Rating System**



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**Graduation Project**  
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**Midyear Short Documentation**  
**Project Short Documentation**

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# 1 Abstract

## 1.1 Problem

In this project, we are concerned with the rising of bad behaviors, scams, harassment and stealing or any other bad behavior that occur daily in our society, these types of behaviors that go unpunished and people who commit such acts usually don't get caught or punished as they should.

## 1.2 Motivation to solve the problem

Our application will help citizens to take a more efficient role in crime fighting by reporting all suspicious acts that they see in their surrounding environment, all bad behaviors that any citizen commits will be recorded fairly and this will help the authorities to identify suspects better by pulling out their behavior history and see if any match exists, also a rating system will be implemented to make an environment where people can rate each other in a confidential and authenticated way without losing the integrity of the rate.

## 1.3 Tools to solve the problem

### **Database**

- To keep personal information about users, physical features, and their images.

### **User friendly Interface**

- That provides the ability for users to search for the suspected citizen by various means like (location, name, physical features, and image or video.)
- That allows users to report suspect's behavior and rate them accordingly in a fair way that doesn't affect the confidentiality and integrity of reporter's information.

### **Administrator Interface**

- Special interface that helps the administrator to manage and store users' records and reports in an organized manner.
- It also sends critical reports that need investigation to the authorities and keep the reporter informed about the updates.

## 2 Background

### 2.1 Main Area of the project

The main area of the project is the behavior of individual citizens and their morals and how to detect criminals of any type and law-breaking citizens.

### 2.2 Motivation/Inspiration

#### **Motivation**

Our project is motivated to limit the rise of ethical crimes that usually go unreported and to help citizens detect criminals and people who don't abide by the law or the moral code.

#### **Inspiration**

It is inspired by an existing system "Social-Credit System" that's implemented in China but with our society's prospect.

### 2.3 Beneficiary

#### **Reduction in criminal activity**

The eagerness to boost the rating will motivate people to be the best version of themselves which leads to them respecting the public rules, law, other individuals, and ensuing etiquette moreover resulting in improving their behavior which encourages less criminal activity and makes the society as safer as possible.

#### **For Organizations.**

When choosing between applicants you are obliged to run a background check on them. Our rating will save your organization's effort, time, and headache of checking the authenticity and integrity of this background check.

#### **For Authorities**

Will help authorities identify suspects more efficiently by running background checks on their previous bad behaviors.

### 2.4 Main techniques

#### **Website**

An easy platform for all users across all platforms. Using PHP, HTML, CSS, and JavaScript.

### **Automated Rating**

To configure the rating process.

### **Image processing**

For facial recognition used in searching for citizens.

### **Security techniques**

Such as MAC, Hashing and Encryption/Decryption.

## **2.5 Main applications**

Our project is applicable for many different types of users such as normal citizens, companies, educational organizations (schools and universities). All in all, any person who carries a phone or owns a personal computer is applicable to use our service.

### 3 Problem

Over the past few years, despite the government valiant efforts, Egypt has suffered from various criminal activities to a point where Egypt climbed up the world crime rate rankings to reach the 59th rank with a crime index of 46.83. On the other hand, the safety index of Egypt is 53.17 with a rank of 126th worldwide. So, Egypt sits near the top of the rankings in crime and at the bottom in safety.

Crime, in general, comes in many forms and types starting with ethical crimes such as bribery, corruption, assaults, and insults. And there are Federal Crimes such as Drug dealing, break-ins, robbery, car robbery, theft, armed robbery, vandalism, and homicide. Also Misbehaving and being rude Isn't a crime in Egypt but it's a problem that Egypt faces and must handle to have a safer, more respectful community.

On the other side, respectful and Good-hearted individuals are not appreciated enough for their contributions to the community they should get something in return for behaving and taking time to help others even though they are do not have to do so.

All these Crimes Must Be reported but some individuals are worried about the problems that follow and the time wasted in court and investigations.

And some individuals think that ethical crimes and Misbehaving are not worth reporting because they are time-consuming and most often Problematic.

Therefore, Something Must be done to report crimes and misbehaving and keep the reporters safe from future harassment

In a quick manner. In addition, we need to have a system that rewards and supports good behavior to encourage individuals to behave and be more respectful.

## 4 Related Work

### 4.1 Social Credit System

In 2020, China announced that it will design a new system called “Social Credit System” to keep track of the good and bad deeds of citizens and reward those who do good in the society and punish who do bad things too. The main question was how China will implement this system an

#### **How Does China’s Social Credit System work?**

The data collected by China for this social experiment comes from digital sources by interacting on social media, search history, purchasing habits so that citizens are going to be monitored according to their personal actions and their actions on internet so everything they do in their daily life whether in their personal life or on the internet affects their score.

### 4.2 Pros and Cons

#### **Pros**

- It generates a good behavior in a variety of situations and instances.
- It rewards morality and punishes corruption.
- It makes China a safer place to live and work.
- It holds people and companies accountable for their actions.

#### **Cons**

- There are mistakes in scoring and algorithm mistakes.
- Individuals and companies have significantly less privacy.
- Lack of knowledge in scoring can lead to corruption.

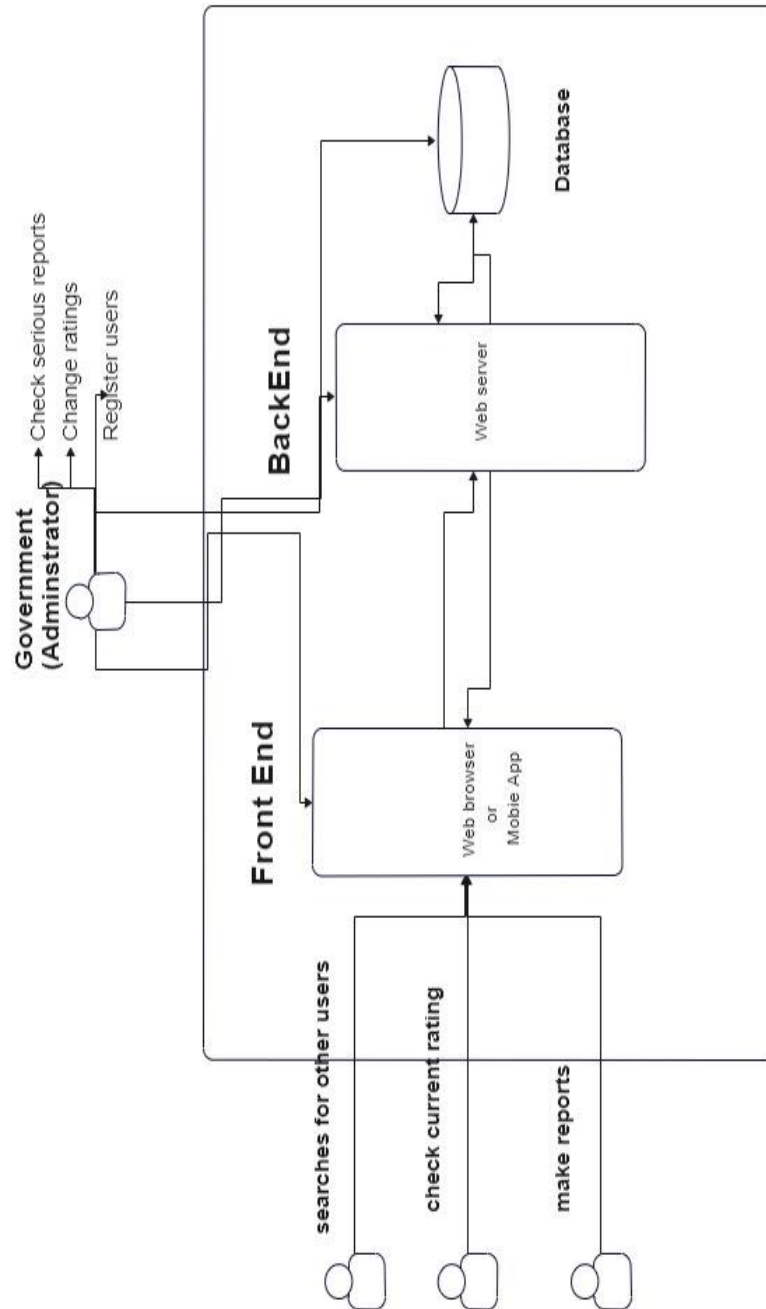
### 4.3 The main differences between them and our project

- Our app will not track people’s action like personal actions or their actions on the internet, it will be concerned with people reporting only bad behavior and crimes of each other.
- It will not punish or reward bad or good people but only reporting them to the specific authority included.
- It will help reporting under reported crimes.



## 5 Project Specifications

### 5.1 System Architecture



## 5.2 Stakeholders

- **Users:** Citizens.
- **Authorities:** Public Prosecution, Court, ministry of health and ministry of interior affairs.
- **Administrator:** In government and police districts.
- **Developers:** Responsible for maintaining website.

## 5.3 Functional and non-functional requirements

### 5.3.1 Functional requirements

#### **Citizen functional requirements**

- Login.
- Contact website.
- Forget the password.
- Search user.
- Report by id.
- Report by name.
- Report by location.
- Report by photo or video.
- Report by physical features.
- Modify email.
- Request Modify address.
- Modify phone.
- Modify job.
- Modify car plate number.
- Get notification of recent changes.
- Check his rating.

#### **Administrator functional requirements**

- Login.
- Signup Users.
- Maintains website.
- Modifies rating.
- Sends critical reports to authorities.
- Updates website.
- Sends initial user's login passwords.

### 5.3.2 Nonfunctional requirements

#### **Portability and Compatibility**

The system works with its maximum functionalities on any device with a web browser and it doesn't conflict with other applications or processes.

#### **Performance and scalability**

The response time of the system is minimal, and the performance is independent of the workload. The only thing that takes time is reporting by video or image report to make sure that it works correctly. The system is not scalable.

#### **Reliability, availability, maintainability**

Normally the system is not expected to face any critical failures and if existed it can be handled as fast as possible. Our system is available all the time.

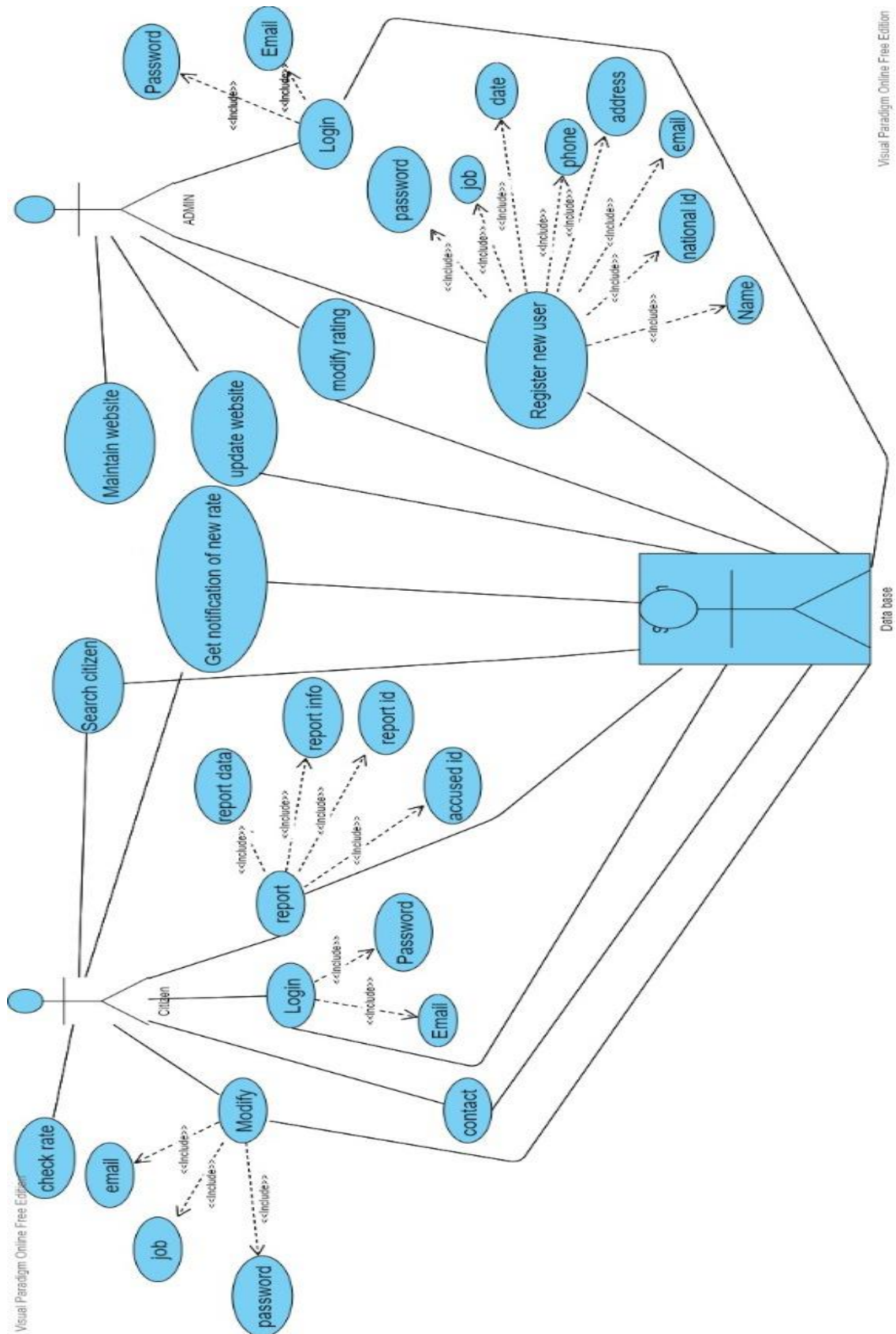
#### **Usability**

Our system is user friendly, as it has an easy-to-use interface.

#### **Security**

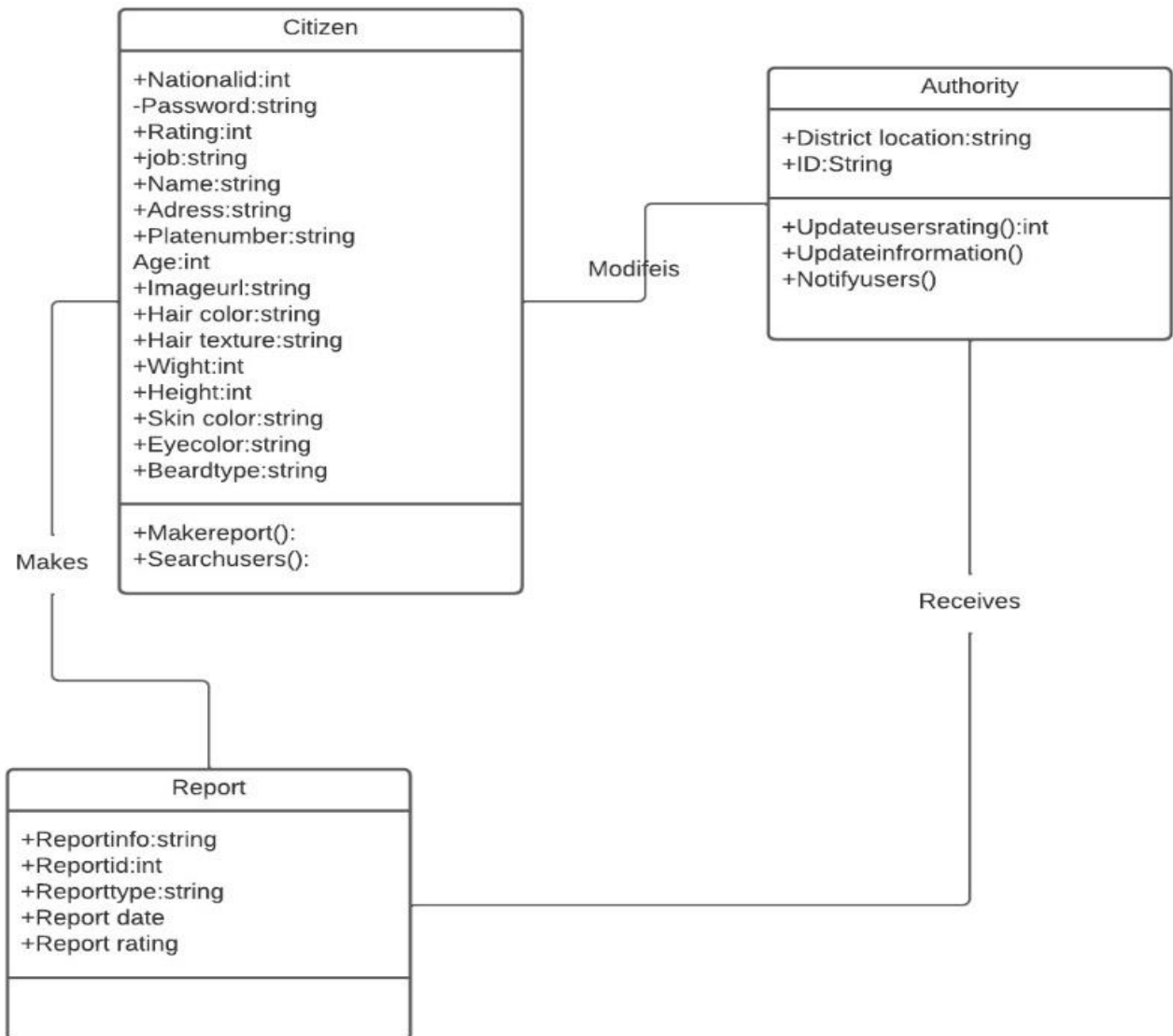
Our system will use encryption and decryption techniques and message authentication techniques.

## 5.4 Use-Case Diagram



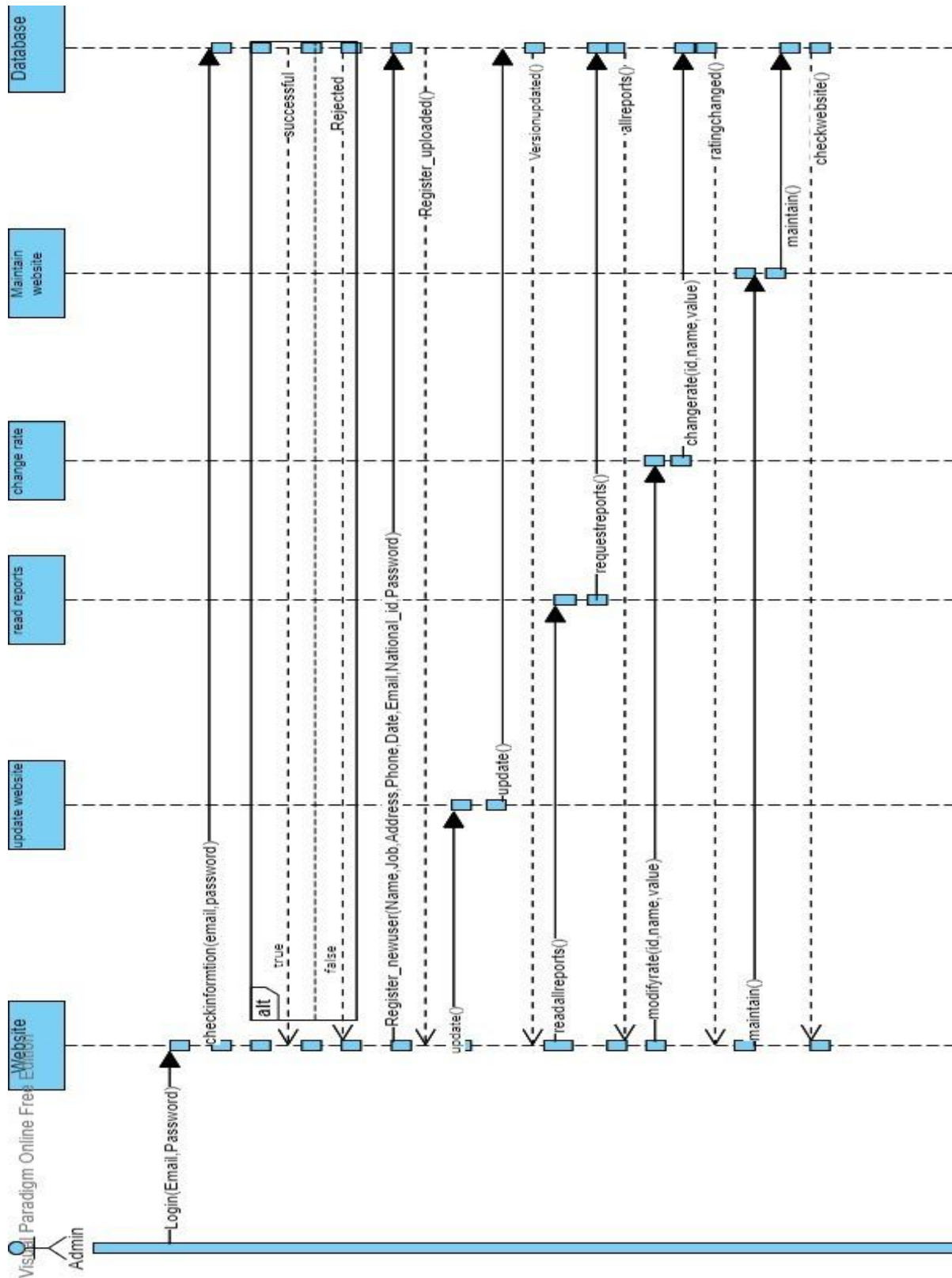
Visual Paradigm Online Free Edition

## 5.5 Class diagram

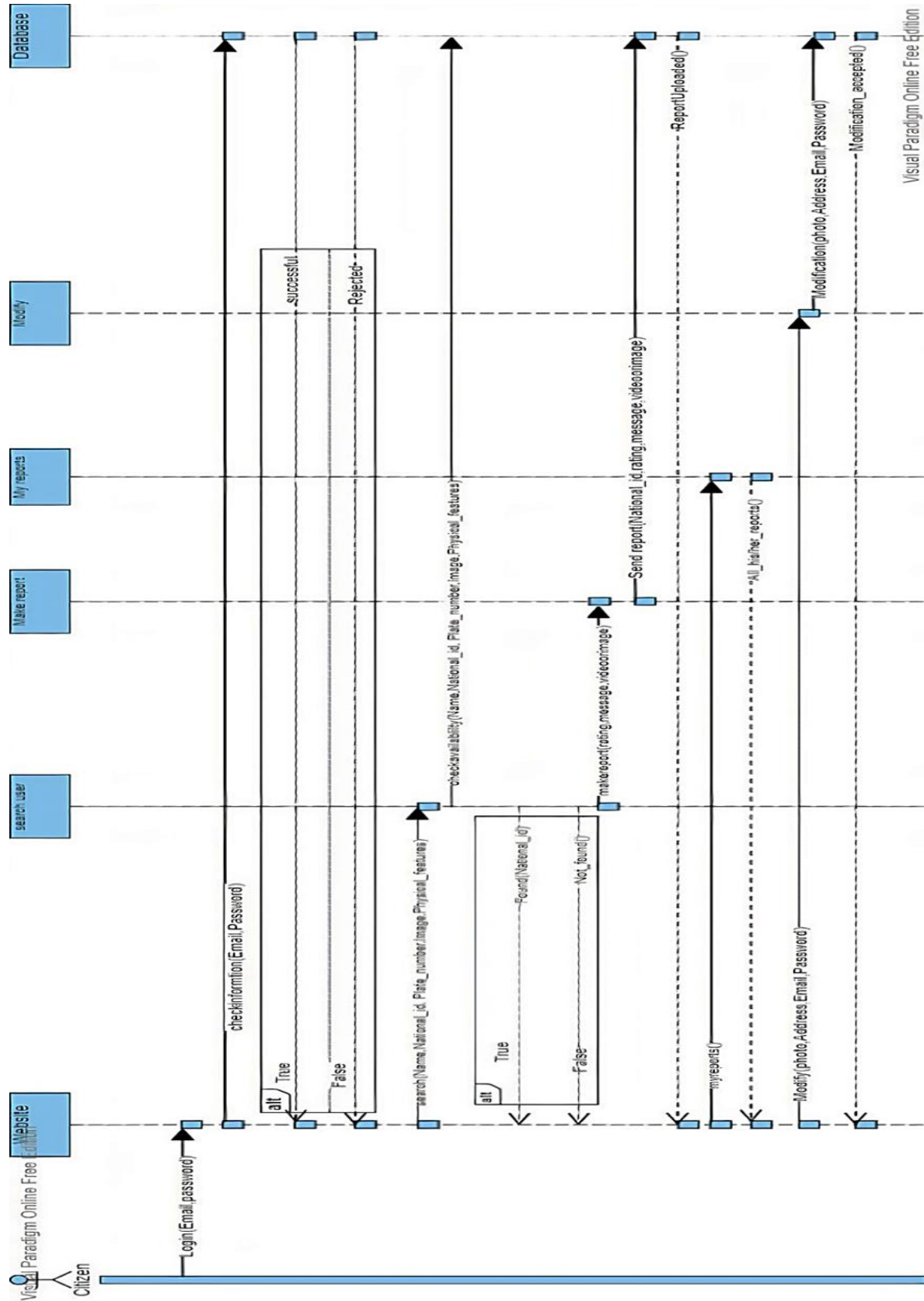


## 5.6 Sequence diagram

### Admin Sequence diagram



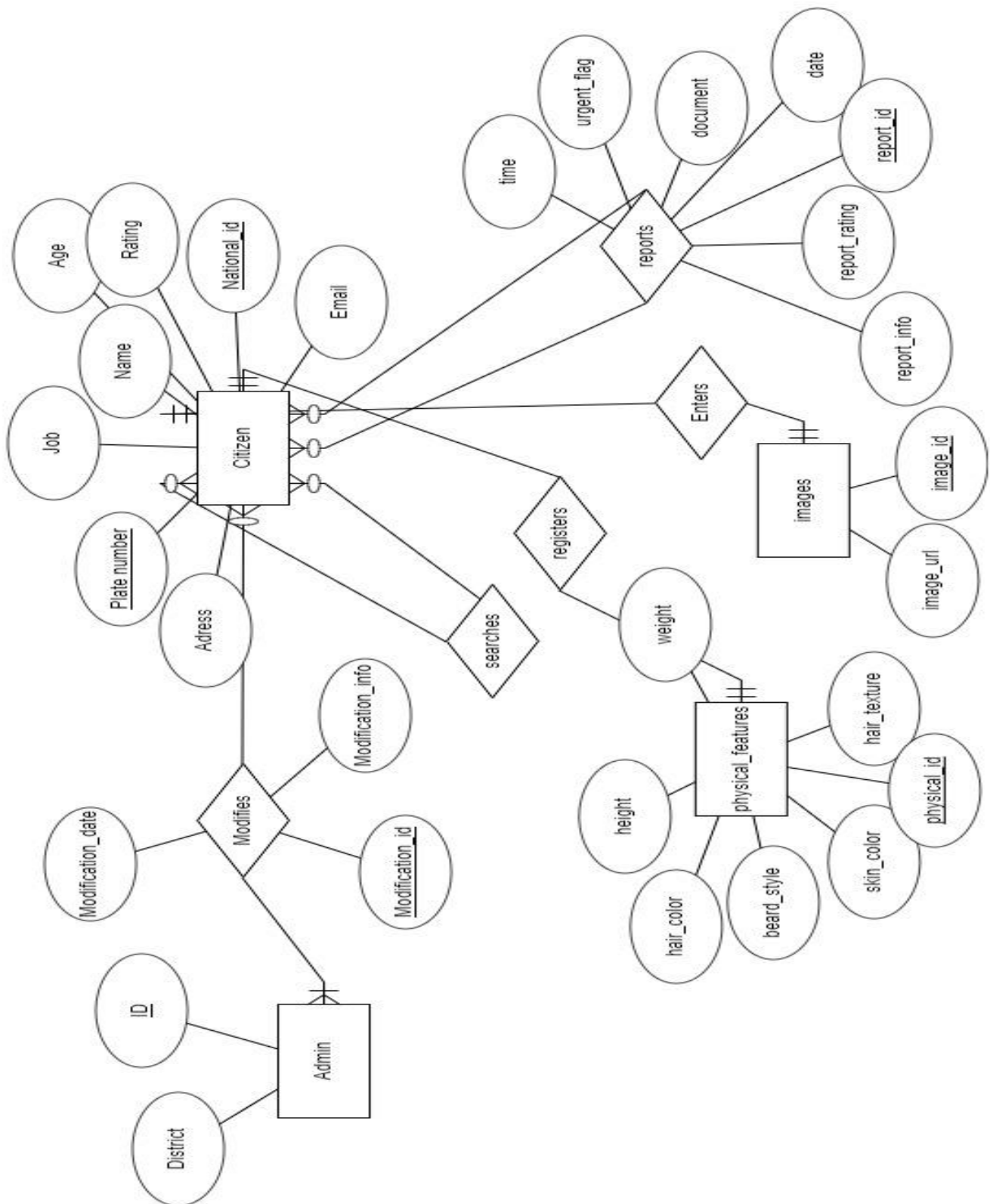
## Citizen Sequence diagram



Visual Paradigm Online Free Edition



## Entity Relationship Diagram (ERD)





## 6 Implementation

### 6.1 Access Control

We are using captcha login. The use of the captcha is to try to add an additional level of security on logging in to block robotic intrusion. The registration occurs at the authorities to prevent any data manipulation and after registration the user cannot change all the data, he entered in the registration to secure the CAAI services and if the data needs to be changed then he requests the change by contacting the administration or the authorities.

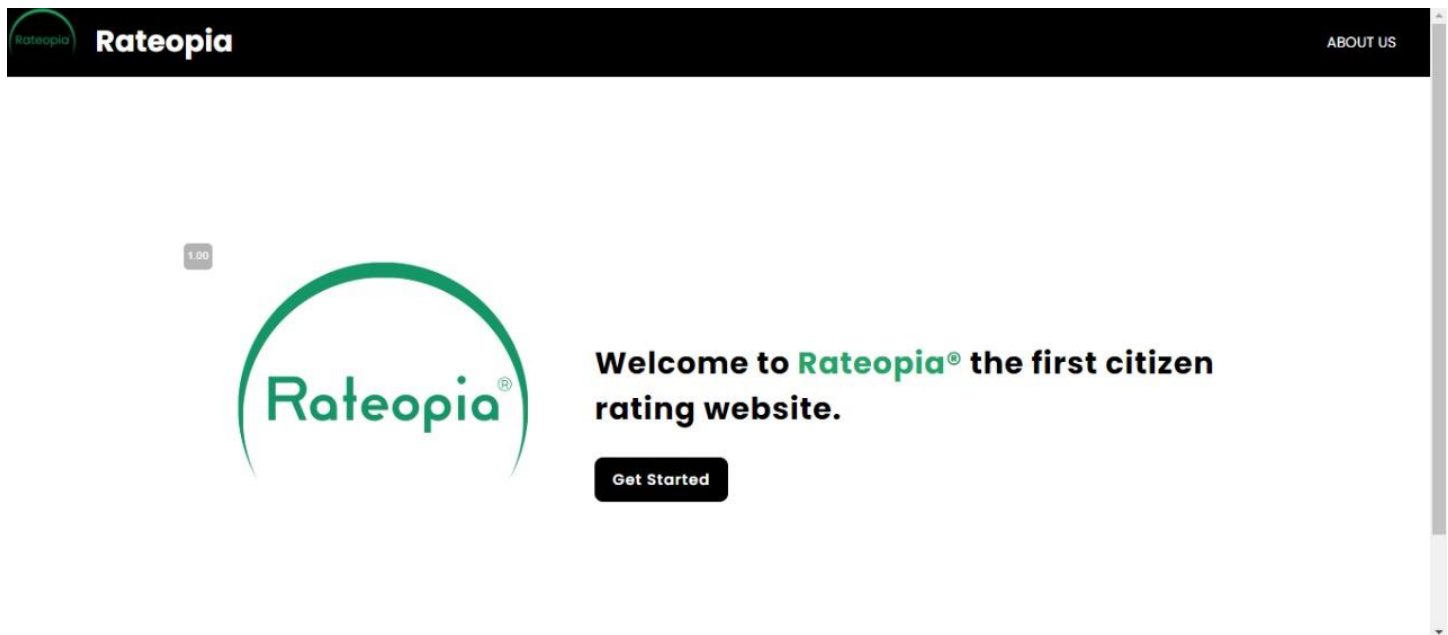
### 6.2 Web site

#### 6.2.1 Front End

#### Citizen Front End

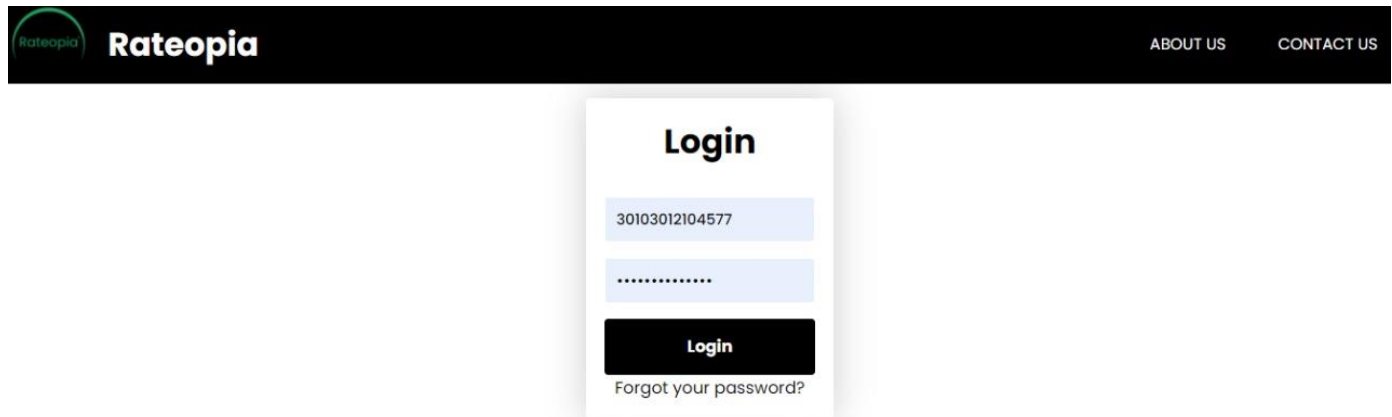
##### 1 Home Page

Here is our front page of the Rateopia website where you get started.



## 2 Login page

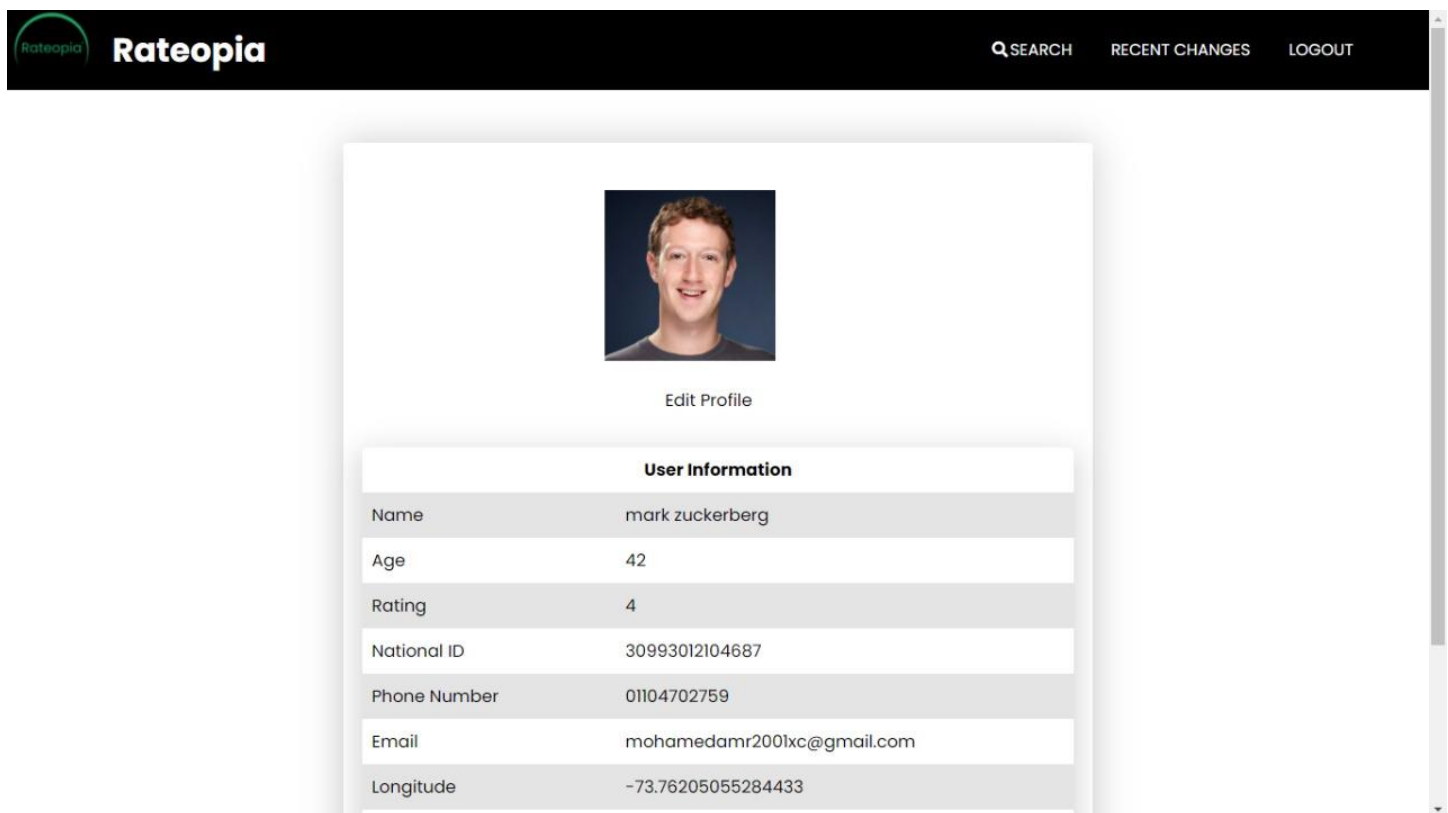
The citizen first login into his or her account using the login page.



The login page features a dark header with the Rateopia logo and navigation links for 'ABOUT US' and 'CONTACT US'. The main content area contains a white login card with the title 'Login'. It includes two input fields: one for a national ID (30103012104577) and one for a password (represented by dots). Below these fields is a black 'Login' button and a link for 'Forgot your password?'.

## 3 Dashboard page

In this page appears all the information of this citizen and the edit button where the user could edit some of their information.



The dashboard page has a dark header with the Rateopia logo and navigation links for 'SEARCH', 'RECENT CHANGES', and 'LOGOUT'. The main content area displays a user profile card. At the top of the card is a profile picture of Mark Zuckerberg, followed by an 'Edit Profile' button. Below this is a table titled 'User Information' containing the following data:

User Information	
Name	mark zuckerberg
Age	42
Rating	4
National ID	30993012104687
Phone Number	01104702759
Email	mohamedamr2001xc@gmail.com
Longitude	-73.76205055284433

## Edit Information page

In this page the user can edit

- Email.
- Job.
- Phone.



Edit Information

Phone Number

Email

Job

-- select a job --

Submit

## 4 Search Page

The search page here helps the user search for any other users to rate and/or report them. They do this using one or more of these methods to help in filtering the search results.

- Search by name.
- Search by national ID.
- Search by photo.
- Search by video.
- By location but while taking in account other users' privacy.
- Some physical features such as skin color, eye color, hair color/style, race, height.
- Search by plate number.

### Search By

**National ID/ Plate Number:**

National ID..

Plate Number..

**Name:**

Full Name...

**Location:**

latitude...

longitude...

**Physical Features:**

Choose Age range:

Age

Choose Hair texture:

Select hair texture

Choose Hair color:

Select hair color

EYE color:

Select eye color

Choose Beard style:

Select Beard style

Choose Body Type:

Select Body Type

Skin color

Select Skin color

Choose Height:

Select Height

**Search by a file:**

Choose File

No file chosen

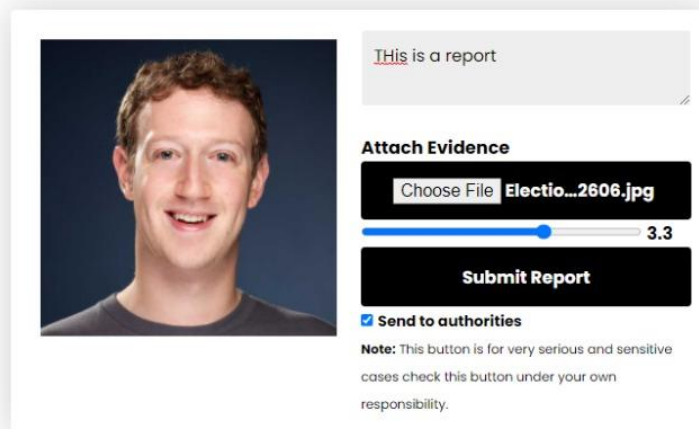
Reset

Submit

## 5 Make Report Page

In this page when the user finds the person, he/she wants to rate and/or report, then he can

- Insert the file of evidence.
- Give the rate that he thinks the user deserves and then the rating will be calculated by the artificial intelligence algorithm.
- If the incidence is urgent then he checks the urgent check box after inserting the file and the rating.

The image displays a report form on the Rateopia website. On the left, there is a square profile picture of Mark Zuckerberg. To the right of the photo, the text "This is a report" is displayed in a light gray box. Below this, the section "Attach Evidence" contains a "Choose File" button, a file name "Electio...2606.jpg", a horizontal progress bar with a blue slider, and a rating value of "3.3". A "Submit Report" button is located below the progress bar. Underneath the submit button is a checkbox labeled "Send to authorities" which is checked. A note follows: "Note: This button is for very serious and sensitive cases check this button under your own responsibility."

## 6 Recent reports page

In this page the ratings the user got in a duration of month will appear in it with:

- The report dates.
- The given rate.
- The uploaded file.
- The report id.
- The report information.



**Note: Recent reports**

**History**

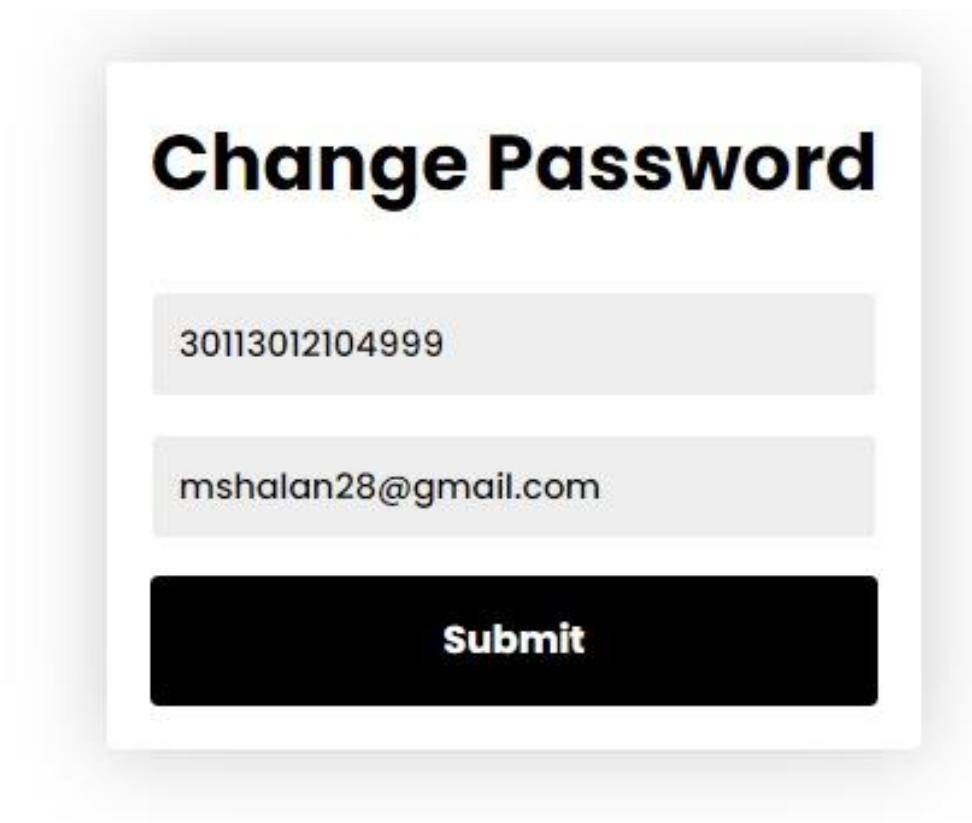
report id: 9  
report Rating: 2.8  
report information: this is a report  
Date: 2022-02-26  
time: 16:21:16  
[Uploaded file](#)

## 7 Change password page

Here the user can change the password that is given to him by authorities.

### The request to change the password.

- In this page after entering the national id and the email the administrator sends a verification code to the email the user entered.

A screenshot of a web form titled "Change Password". The form is white with a subtle shadow. It contains two input fields: the first contains the national ID "30113012104999" and the second contains the email "mshalan28@gmail.com". Below these fields is a large black button with the word "Submit" in white text.

**Change Password**

30113012104999

mshalan28@gmail.com

**Submit**

## Verification mail



rateopia

to me ▾

Your verification code : 40986217



Reply



Forward

## Setting new password page

### Change Password

Verification code

.....

.....

Submit

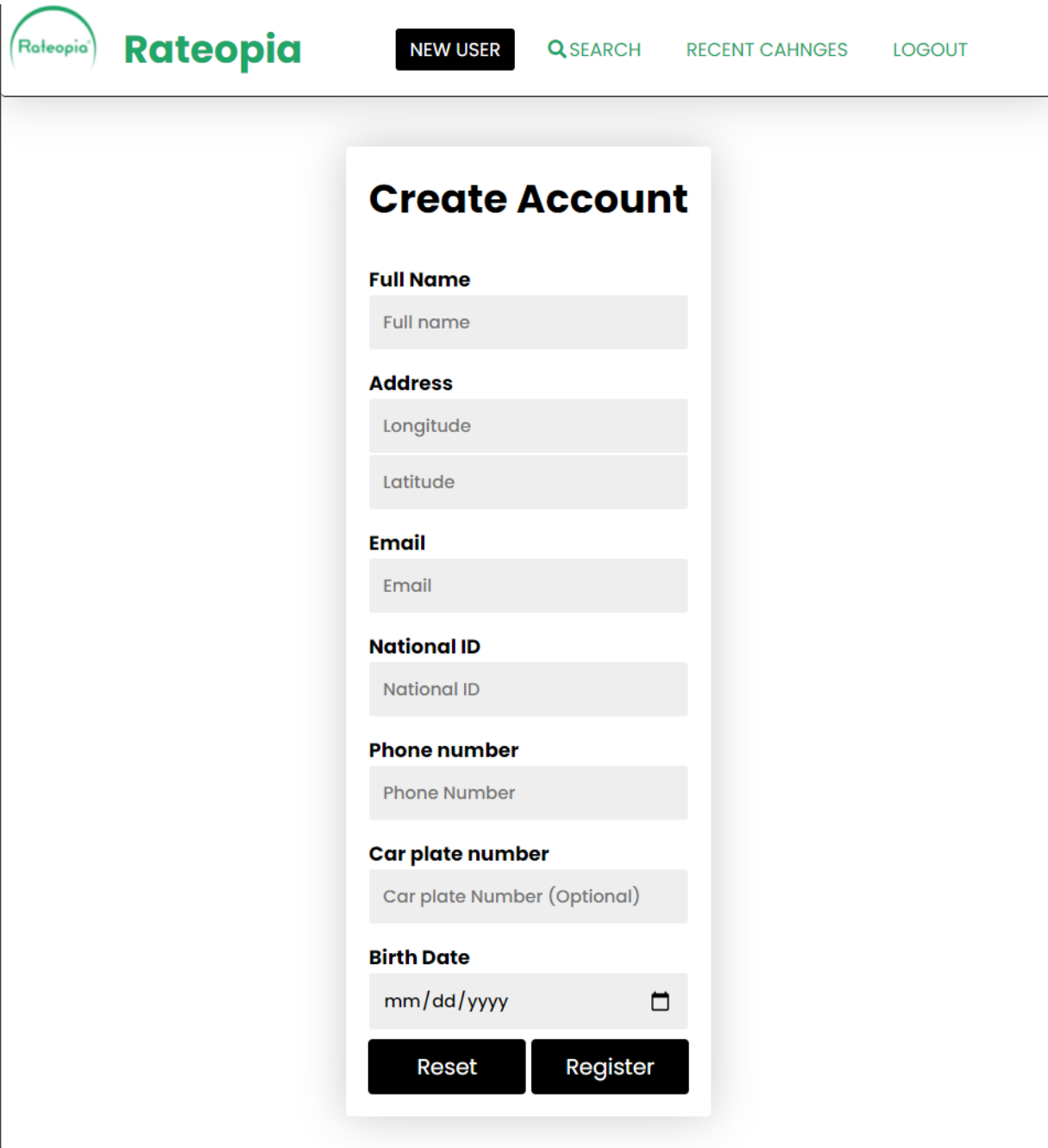


## 6.2.2 Admin front end

### 1. Register pages

In these pages the admin registers the citizens on the website to insure confidentiality in their information

#### Create account page



**Create Account**

**Full Name**  
Full name

**Address**  
Longitude  
Latitude

**Email**  
Email

**National ID**  
National ID

**Phone number**  
Phone Number

**Car plate number**  
Car plate Number (Optional)

**Birth Date**  
mm/dd/yyyy

Reset Register

## Add photo and physical features page



**Rateopia**

NEW USER

SEARCH

RECENT CHANGES

LOGOUT

### Create Account

#### Attach Image

Choose File No file chosen

Choose Eye color:

Select eye color



Choose Hair color:

Select hair color



Choose Hair style:

Select hair style



Choose Beard style:

Select beard style



Choose Body Type:

Select body type



Choose Race:

Select race



Choose Height:

Select height



#### Select your job

-- select a job --




Reset

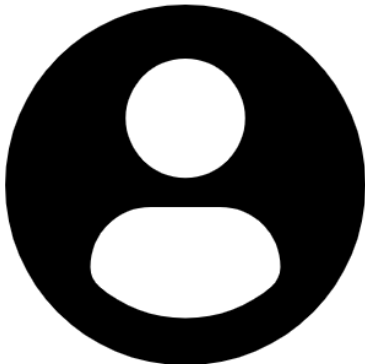
Submit

## 2. Edit user page

Here the admins can edit users' information.


**Rateopia**

[NEW USER](#)
[SEARCH](#)
[RECENT CAHNGES](#)
[LOGOUT](#)



**Edit Image**

Choose File
No file chosen

**User Information:**

Details	Old	New
Name	Example	<input type="text" value="Edit Name"/>
Age		<input type="text" value="Edit Age"/>
Rating		<input type="text" value="Edit Rating"/>
Phone Number		<input type="text" value="Edit Phone Number"/>
Email		<input type="text" value="Edit Email"/>
Address		<input type="text" value="Edit Address"/>
Job		<input type="text" value="Edit Job"/>
Car plate number		<input type="text" value="Edit Car Plate Number"/>

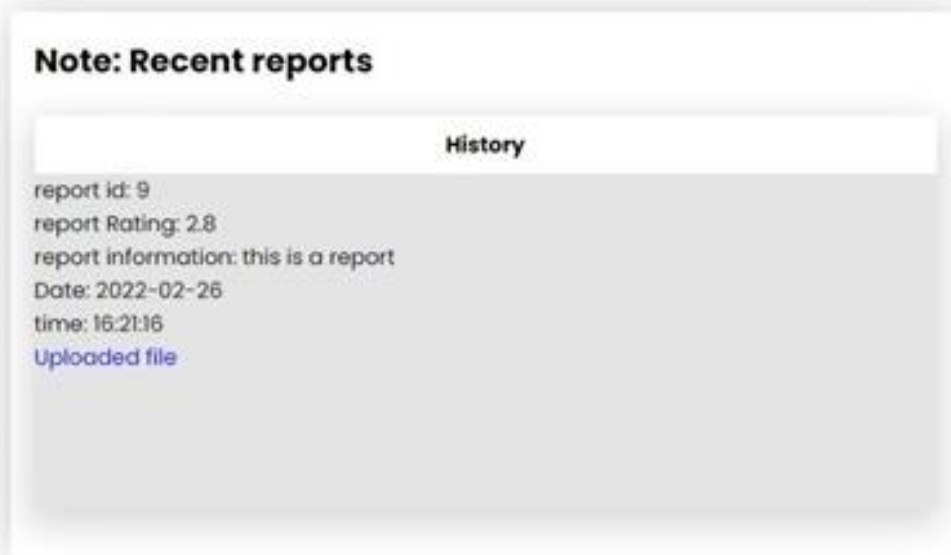
**Physical Features**

Details	Old	New
Eye color		<input type="text" value="Edit Eye Color"/>

### 3. Receive reports page

In this page the ratings the user got in a duration of month will appear in it with:


















- The report dates.
- The given rate.
- The uploaded file.
- The report id.
- The report information.



## 6.2.2 Back End

### Database

In our website we are using MySQL database, Php.

		Age	Rating	National_id	Name	Job	lat	lng	phone_number	Plate_number	Email	passwordd
<input type="checkbox"/>	  	22	3.42	30113012104999	mostafa abdelhamid shalan	General and Operatio	29.99913038958323	31.103409887994637	01141181317		mshalan28@gmail.com	moshalan1234
<input type="checkbox"/>	  	20	1.25	30103012104457	mohamed amr abdelhalim	Unemployed	30.006547399413398	31.173557464323117	01004702772	lou345	m.amr48044@gmail.com	%wa@kz7jy/Si#g
<input type="checkbox"/>	  	21	4	30103012104687	ahmed hazem salah	Engineer	30.00826916323738	31.185874212197472	01092664762	III123	ahmedhazemsalah@gmail.com	%ioc&j/nt7@0uy
<input type="checkbox"/>	  	21	4	30103012156987	muhammad atef soliman	Unemployed	30.055734875377997	31.33024508412002	01114354565		muhammadsoilman4@gmail.com	\$cdwvkn8r&#ji
<input type="checkbox"/>	  	21	4	30103012103215	eslam ahmed ramadan	Chiropractor	30.08291495157884	31.19551144297685	01126252677	564pop	eslamahmed015@gmail.com	0minb8o1s@pzl4
<input type="checkbox"/>	  	42	2.53185	30983012104687	mark zuckerberg	Other Occupation	41.02362184484782	-73.76205055284433	01104702759		mohamedamr2001xc@gmail.com	3o5puxgh&vswi@

Database includes all the info about the citizens:

- National IDs.
- Physical features.
- Job.
- Phone number
- Plate number.
- Email.
- Password.
- Age.
- Location.
- Rating.

### Folders

- To store citizens' images.
- To save the attached documents files with reports.

## 7 Progress Table

Number	Task Title	Description	Task Status
1	Documentation	Project's Word Document	Completed
2	Presentation	Project's PowerPoint	Completed
3	Front End	HTML, CSS, JAVASCRIPT	Completed
4	Back End	MySQL, PHP	Completed
5	Face Recognition	OpenCV	Completed
6	Access control	Captcha	In Progress
7	Rating System	Automated Rating System	Future Updates
8	Password Encryption	Hashing	Future Updates
9	Message Encryption	Encryption Techniques	Future Updates
10	Penetration Testing	Kali Linux, Metasploit, Wireshark	Future Updates