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Department of Computer Science



Find Me

Supervised by
Dr. Amin Allam
TA. Ahmed Samir

Implemented by

Student ID	Student name
20170071	Aya Mahmoud Lofty
20170129	Shehab Ahmed Mohamed
20170284	Mariam Nasser
20170325	Nourhan Atef Radwan
20170411	Moaaz Hasan Hussein

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Table of Contents

Chapter 1: Introduction	6
1.1 Motivation.....	6
1.2 Problem Definition.....	9
1.3 Problem Objective.....	10
1.4 Gantt Chart.....	11
1.5 Project development methodology	12
1.6 The used tools in the project (SW and HW).....	12
1.7 Report Organization (summary of the rest of the report)	12
Chapter 2: Related Work.....	13
Chapter 3: System Analysis	16
3.1 Project specifications	16
3.1.1 Functional Requirements.....	17
3.1.2 Non-Functional Requirements.....	17
3.2 Use Cases Table and Diagram	17
Chapter 4: System Design	20
4.1 System Component Diagram	21
4.2 System Class Diagrams.....	22
4.3 System Sequence Diagrams	22
4.4 Project ERD.....	31
4.5 System GUI Design	31
Chapter 5: Implementation and System Test cases.....	36

List of Figures



Cairo University
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Department of Computer Science

Figure 1. 1 adding post process for matching features extracted from a picture.....	7
Figure 1. 2 Found cases on different platforms pie charts	9
Figure 1. 3 platform preference pie chart.....	10
Figure 1. 4 usability pie chart.....	10
Figure 1. 5 Project Gantt chart of project time plan.....	11
Figure 2. 1 CNN used by muskan mansuri face recognition system.....	13
Figure 2. 2 Age invariant face recognition main processes.....	14
Figure 2. 3 FaceFirst face recognition	15
Figure 3. 1 System Architecture for facial Recognition System	16
Figure 3. 2 Use Case Diagram for missing and kidnapped people system.....	20
Figure 4. 1 System Component Diagram	21
Figure 4. 2 Class Diagram for missing and kidnapped people system	22
Figure 4. 3 Add post for seeker sequence diagram	23
Figure 4. 4 add post for finder sequence diagram.....	24
Figure 4. 5 List Notifications sequence Diagram.....	25
Figure 4. 6 Save person Sequence Diagram.....	26
Figure 4. 7 Add Relative Request Sequence Diagram.....	27
Figure 4. 8 Search User Sequence Diagram	28
Figure 4. 9 Receive Relative Request Sequence Diagram	29
Figure 4. 10 get location Sequence Diagram	30
Figure 4. 11 Database Entity Relationship Diagram (ERD).....	31
Figure 4. 12 sign up page	32
Figure 4. 13 login page	32
Figure 4. 14 home page.....	33
Figure 4. 15 Notification page.....	33
Figure 4. 16 add post page.....	34
Figure 4. 17 profile page	35
Figure 4. 18 search page	35
Figure 5. 1 DeepFace Library matching two images	38
Figure 5. 3 Sign up test case.....	39
Figure 5. 4 Complete sign-up test case	40



Cairo University
Faculty of Computers and Artificial Intelligence
Department of Computer Science

Figure 5. 5 Login test case	41
Figure 5. 6 complete Login test case.....	42
Figure 5. 7 Sending Relative requests test case.....	43
Figure 5. 8 receiving relative requests test case.....	44
Figure 5. 9 Delete relative request test case	45
Figure 5. 10 Delete relative test case.....	46
Figure 5. 11 Edit profile test case.....	47
Figure 5. 12 Add finder post test case	48
Figure 5. 13 add seeker post test case.....	49
Figure 5. 14 Delete post test case	50
Figure 5. 15 Match found for seeker post test case	51



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Faculty of Computers and Artificial Intelligence
Department of Computer Science

List of Tables

Table 3. 1 Use Cases Table	19
----------------------------------	----

Cases

API : application programming interface	12
CNN : Cable News Network.....	14
Gantt : Generalized Activity Normalization Time Table.....	11
GUI : Graphical User Interface	12
IDE : integrated development environment.....	12
SMS : Short Message Service.....	12
VGG : Visual Geometry Group	14



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Department of Computer Science

Chapter 1: Introduction

1.1 Motivation

In some cases, lost person gets found easily, but in some critical cases missing persons are never reunited with their relatives. Finding lost person can be difficult task as more time is required for launching an Information Report in police station, time required for finding lost person is more and during manual process number of manpower for searching lost person is less.

To overcome from this our application is basically designed to allow searching person by just an image of him so more effort is made towards making use of face recognition and the obtained recognition accuracy is much. This method will be greatly beneficial for finding missing person as fast as possible.

A person may go missing through a voluntary disappearance, or else due to an accident, crime, death, or many other reasons. Accordingly, some missing person cases remain unresolved for many years. The International Commission on Missing Persons disseminates information and images of lost people to improve the effectiveness of missing investigations, but still, it's not fast neither efficient way. So, we propose a system that would help the public by accelerating the process of searching using face recognition.

Our facial recognition system uses machine learning to identify similarities in faces seen on different pictures so in case someone is missing the system offers a quick facial search action, the people related to that person can upload the picture of the person which will get stored in the database. When the public encounter a suspicious person, they can capture and upload the picture of that person into our portal. The face recognition model in our system will try to find a match in the database. If a match is found, system will inform both parties the one who uploaded the picture and the people related to that person to help arranging an appointment.

A missing person can be characterized as the one who can be a child or an adult who is lost, children disappearance is one of the most widely reported missing person cases, A 1993 UK study estimated that 250,000 people had disappeared of which at least 100,000 were under the age of 18. A 1992 report found thousands of women searching for an estimated 60,000 sons and the reasons behind this huge number is that the child has no concept of being lost, navigational skills are non-existent, will wander aimlessly, will not often respond to commands or whistles, and will tend to find shelter, which increases their survivability.

In our system, the image of the person given by the guardian at the time of missing is stored in the database.



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The public is given authority to upload photographs of any person in uncertain situations. Automatic detection of match for this image. If not found, a new record will be created in the database with the uploaded picture. By this way, it decreases the time taken to search for a person's detail after he is found.

The appearance of the person can vary due to ageing, filters, pose, lightings etc. All these factors were considered before choosing the face recognition algorithm. Then a face classification method that uses Feed Forward Neural Network is integrated in the system.

Main Techniques

- The proposed system makes use of Face Recognition for missing peoples' identification as its applicability is easier and working range is larger than others, such as.; fingerprint, iris scanning, signature, etc.
- The classifier has been trained in such a way that it can take the measurements from a test image and gives the closest match as output.
- Face Detection used to segment the face from the image background.
- Then used algorithm may analyze the relative position, size, and/or shape of the eyes, nose, cheekbones, and jaw. These features are then used to search for other images with matching features.
- Established feature vector of the face is matched against our database.
- If there are many images that match the uploaded one, the one with high percentage of similarity is chosen and person will be identified according to information of owner of this chosen image.
- Though our system has a small limitation i.e., when the age of the person is between the age 0 and 10 the accuracy drops as shown in Figure 7. This is due to the incomplete growth of facial features at that age. We look forward to overcome this limitation in the future.

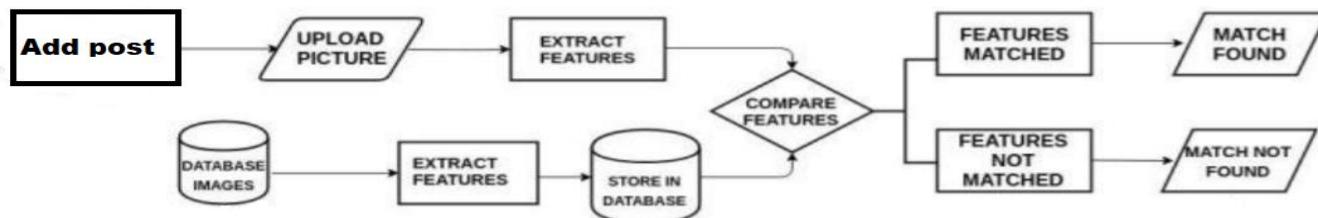


Figure 1. 1 adding post process for matching features extracted from a picture.

Main Applications



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Police stations, safety agencies, social community (including the **lost, missing** case reporter, found case reporter).

Beneficiary:

- **Finders** who find lost persons and do not know how to deal with them instead of putting them in shelters or leading them for adoption, the application would help reaching their families faster than any other platform.
- **Lost persons** as it reduces risk of violence and ending up in bad psychological state.
- **Seekers** they would be able to post on reliable, dedicated platform for their problem and reach people who may be in a direct position to help. decreasing distractions between different posts on different groups and checking bunch of comments which makes it uncontrollable to trace them. the platform can help in saving a significant amount of their valuable time.



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1.2 Problem Definition

Nowadays, although digital missing person posters are more viral and effective than before in seeking missing persons, seekers still face some problems in the process for instance: misleading as searching results of missing person may lead to considerable number of unrelated various number of posts. also, difficulties of reaching the owner of the original post (finder) and communicating between him and the person searching for someone. one of the problems that we have to state is facing distractions as accounts comment with "up", support or unrelated comments and interactions on the post. posts do not get updated immediately and it keeps roaming the social media although the lost person may be found.

Results of surveys are stated below police stations may face a lot of pressure investigating to find lost person, but most of the found cases were reported to police Station. Then, in second place comes Facebook due to the distraction and the difficulties of reaching the post owners. However, the majority prefers Facebook other than twitter.



Figure 1. 2 Found cases on different platforms pie charts



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1.3 Problem Objective

We have found that the best way to solve this problem is by separating it to a dedicated platform for finding the missing persons in addition, if those 'digital missing person poster' was supported with face recognition it is going to be more reliable. our platform can reach people who may be in a direct position to help which enhances life-saving effects. all you have to do is uploading a clear picture and you can add a description too.

We conducted a survey to ask users whether they prefer if this platform to be represented in a mobile and website. We asked them which of them will actually help with their problem, be easy-to-use and be more accessible while dealing with an emergency case. These surveys were conducted to make sure it is consistent with their needs. Pie chart below illustrates statistics of our conclusion.

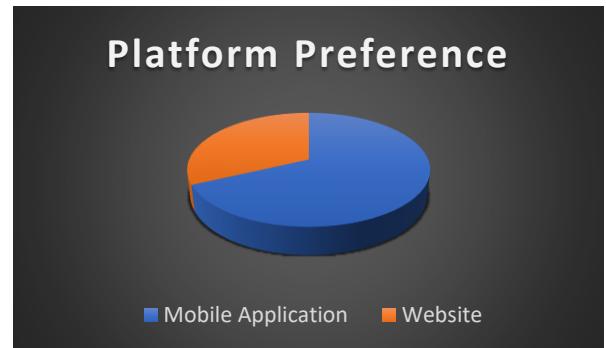


Figure 1. 3 platform preference pie chart

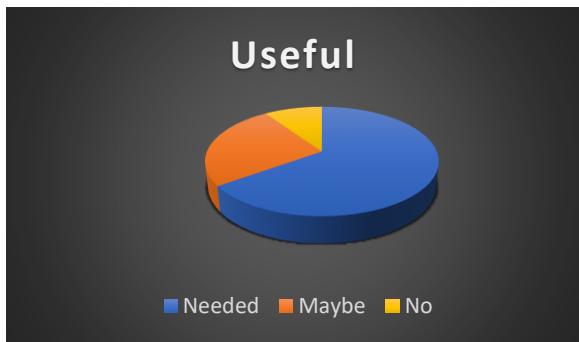


Figure 1. 4 usability pie chart

We conducted another survey to ask if such a platform would make an impact, solve a social problem and reunite missing people with their families. It was asked to see in which extend would it be useful and desirable. We asked them if our system functionalities need enhancements to make it more easy to use and solve the problems faced by other platforms mentioned above.



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1.4 Gantt Chart

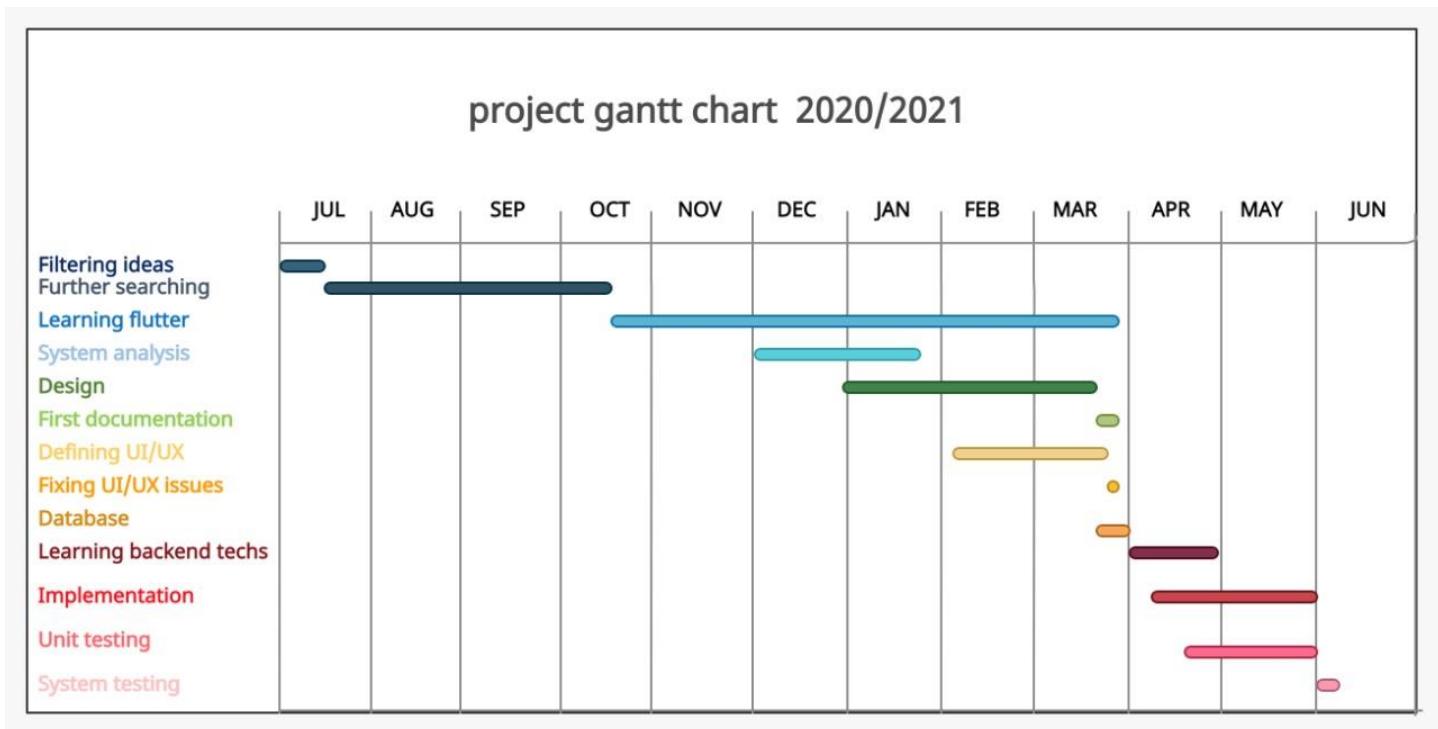


Figure 1. 5 Project Gantt chart of project time plan.



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1.5 Project development methodology

We followed the Agile project management methodology.

1.6 The used tools in the project (SW and HW)

Flutter for the user interface.

The backend is built using Django which is an open-source framework for **backend** web applications based on Python.

Recommended to use python 3.8 or above.

The database we used MySQL Workbench.

Visual Studio Code as an IDE for Django.

Deepface as a python face recognition framework. The library is mainly based on Keras and TensorFlow.

Twillio's programmable messaging API for sending and SMS.

1.7 Report Organization (summary of the rest of the report)

We are discussing in the following chapters:

Presenting some applications related to missing persons applications in the market.

Providing our system analysis phase.

Providing our system design phase and our GUI design.

Displaying code Implementation and some testcases.



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Chapter 2: Related Work

In 2020, Muskan Mansuri, Vishakha Kajale, Saadia Mirza and Saloni Thoke presented a paper where they proposed a system based on providing help for major issue of finding missing people. It will allow citizens to capture and upload the picture along with location of victims. The captured image will be matched with the database of police records of missing people with the help of image processing. The alert notification with current location will be sent to the nearest police station, if match is found. Face recognition will play a key role in this process. For image recognition, convolutional neural network (CNN) plays important.

The main difference between their work and ours is that, that the people who found the lost person can register and upload its face photos to the database if the person's face is not already existing in it, which will give bigger and more accurate system, And their system not involves relatives users that have relative connections with the lost person and the methods to communicate with them in the platform, These are the main disadvantages of the previously existing systems.

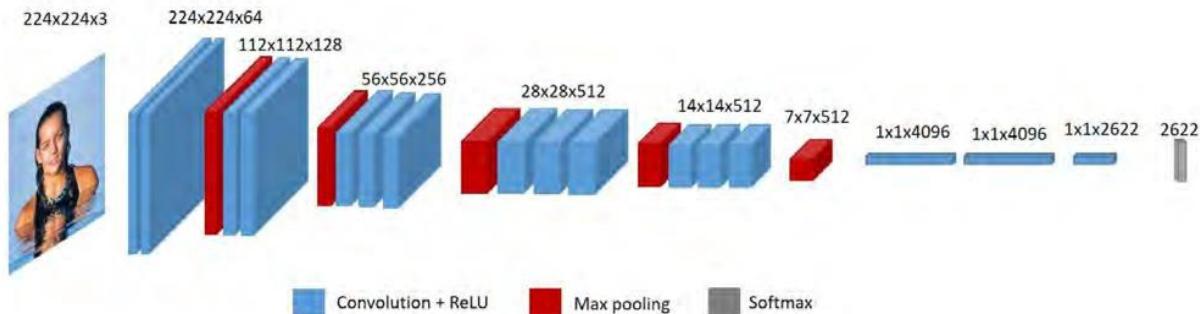


Figure 2. 1 CNN used by muskan mansuri face recognition system.

Pros :

- Fast Search Process.
- Simple technique of recognition.

Cons :

- Low accuracy of matched results.
- Doesn't afford a Communication feature.

In 2020, Amal A. Moustafa, A. Elnakib and N. Areed presented a paper where they proposed an age-invariant face recognition system which includes four stages: preprocessing, feature extraction, feature fusion,



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and classification. Preprocessing stage detects faces using Viola–Jones algorithm and frontal face alignment. Feature extraction is achieved using a CNN architecture using VGG-Face model to extract compact face features. Extracted features are fused using the real-time feature-level multi-discriminant correlation analysis, which significantly reduces feature dimensions and results in the most relevant features to age-invariant face recognition. Finally, K -nearest neighbor and support vector machine are investigated for classification. The disadvantage of this system is that it involves complex algorithms which make the process of extraction and classification slower.

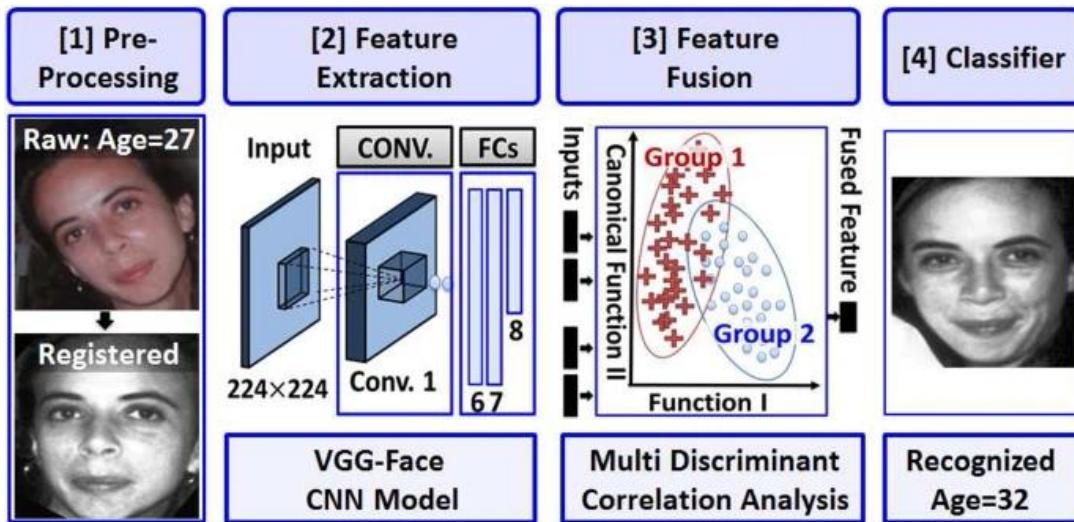


Figure 2. 2 Age invariant face recognition main processes.

Pros:

- High Accuracy compared to others

Cons:

- Slow Classification.
- Just alerts a match without location of victim.
- Age-invariant.

FaceFirst is a global patented face recognition platform used by government agencies, local law enforcement, airports, military bases and more for intelligent threat detection. Using artificial intelligence and machine learning, FaceFirst offers a full range of biometric surveillance, mobile, access control and desktop



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forensic face recognition capabilities for a wide range of needs, including threat prevention, national security, rescue missions, geofencing, border control and more. The FaceFirst API also easily integrates with existing data and technology system.

- Protect crowded spaces, prevent crime and secure sensitive locations.
- FaceFirst face recognition can integrate with cameras, kiosks, terminals and other hardware.
- Identify individuals, patterns and trends across thousands of geolocations.
- Applicable only within a registered organization watchlist.
- alerts are distributed to essential personnel.



Figure 2. 3 FaceFirst face recognition



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Chapter 3: System Analysis

3.1 Project specifications

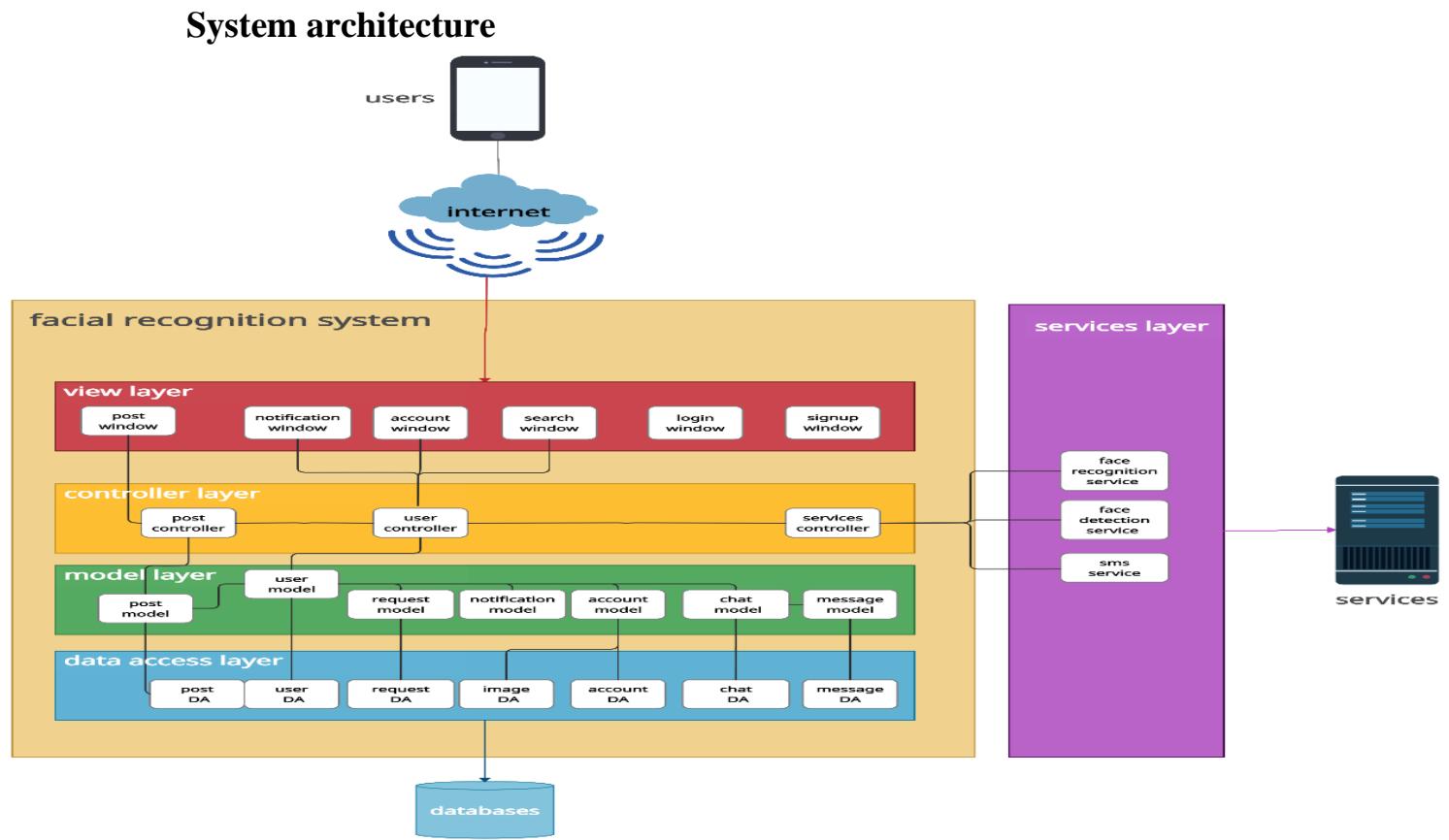


Figure 3. 1 System Architecture for facial Recognition System

Stakeholders:

Actors:



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- finder.
- Seeker.
- Relative.
- Police station.

Stakeholders:

- Programmers.
- Scrum master.
- Product owner.

3.1.1 Functional Requirements

- User can update his information (ex. Name, Birth of Date, Add phone, Location, etc.).
- The user should add more than one image to allow others to save him in case he is in danger.
- User can add relatives (trusted people) to his profile by username or email to inform them in case he is in danger.
- A user can accept or reject a request to be another user's relatives.
- The user can press the button in the event that he feels insecure or kidnapped to notify all those interested in helping him in the nearest place and nearest police station and relatives for him.
- The user can add post with photo\s of the missing person and his location.
- The system links seeker post with finder post.
- The system enables the user to call, send a message or get location of (Finder/Seeker) about the missing person.
- A Verification email is sent to user whenever he/she registers for the first time on some software system.

3.1.2 Non-Functional Requirements

- The system will make user information secure by preventing other users from seeing their information (such as photos and their relatives).
- The User interface is friendly and allow users to reach their profile data from any page within one click.
- The search for missing person shall load within 10 seconds maximum.
- System programming shall not use deprecated code.

3.2 Use Cases Table and Diagram



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Use case	Event	Actor	Description
Create Post.	External	User(finder, seeker).	Users whether a finder or seeker add posts. Post can contain description (if needed), the location and one image or more which is then used in face recognition process to help them reunite with their families.
Report an emergency.	External	User(finder, seeker).	User can post an emergent post if he feels unsafe using save me button. The system then gets his current location, post his recent image and send notification for his relatives.
Notify users.	State	User(finder, seeker).	System sends notification to users in two cases: if a match was found between the image uploaded via the post and images datasets, or an ‘add request’ was sent from another user.
Add image	External	User(finder, seeker).	User chooses an image from his file system and uploads it to be added to his private album for safety purposes. Adding an image while making a post.
Edit Account	External	User(finder, seeker).	Users can edit his account either by changing phone number, location, profile picture, or name.
Add relatives Request.	External	User(finder ,seeker)	Add request is fired from a user to another to add him in his relatives lists to be more secured in emergency cases.
Search User.	External	User(finder, seeker).	User types username of his relative in a search bar accessing his profile to add him in his relatives list.
Respond to relative Request.	External	User(finder, seeker).	On receiving a request notification, user opens requests lists and respond to the latest request either by accepting or rejecting being in his relatives list.
Delete post	External	User(finder, seeker).	User deletes a post if the person he was looking for was found without the system intervention.



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List search results	External	relatives, Seeker.	User navigates search result list and chooses the one he thought he is his relative to send him a request.
Get Location.	External	relatives, Seeker.	System accesses the current user location through GPS to support the emergency cases.

Table 3. 1 Use Cases Table



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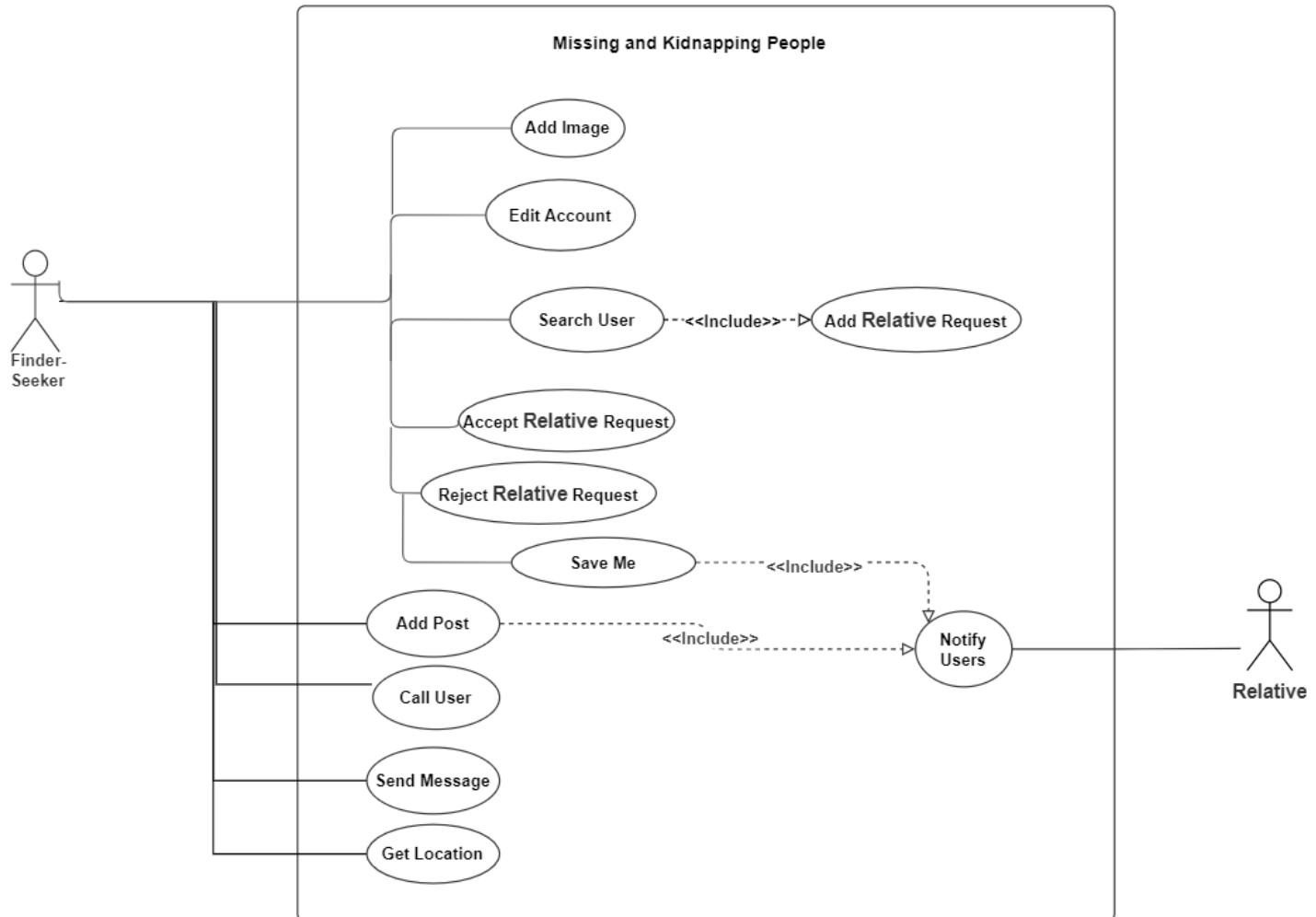


Figure 3. 2 Use Case Diagram for missing and kidnapped people system

Chapter 4: System Design



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4.1 System Component Diagram

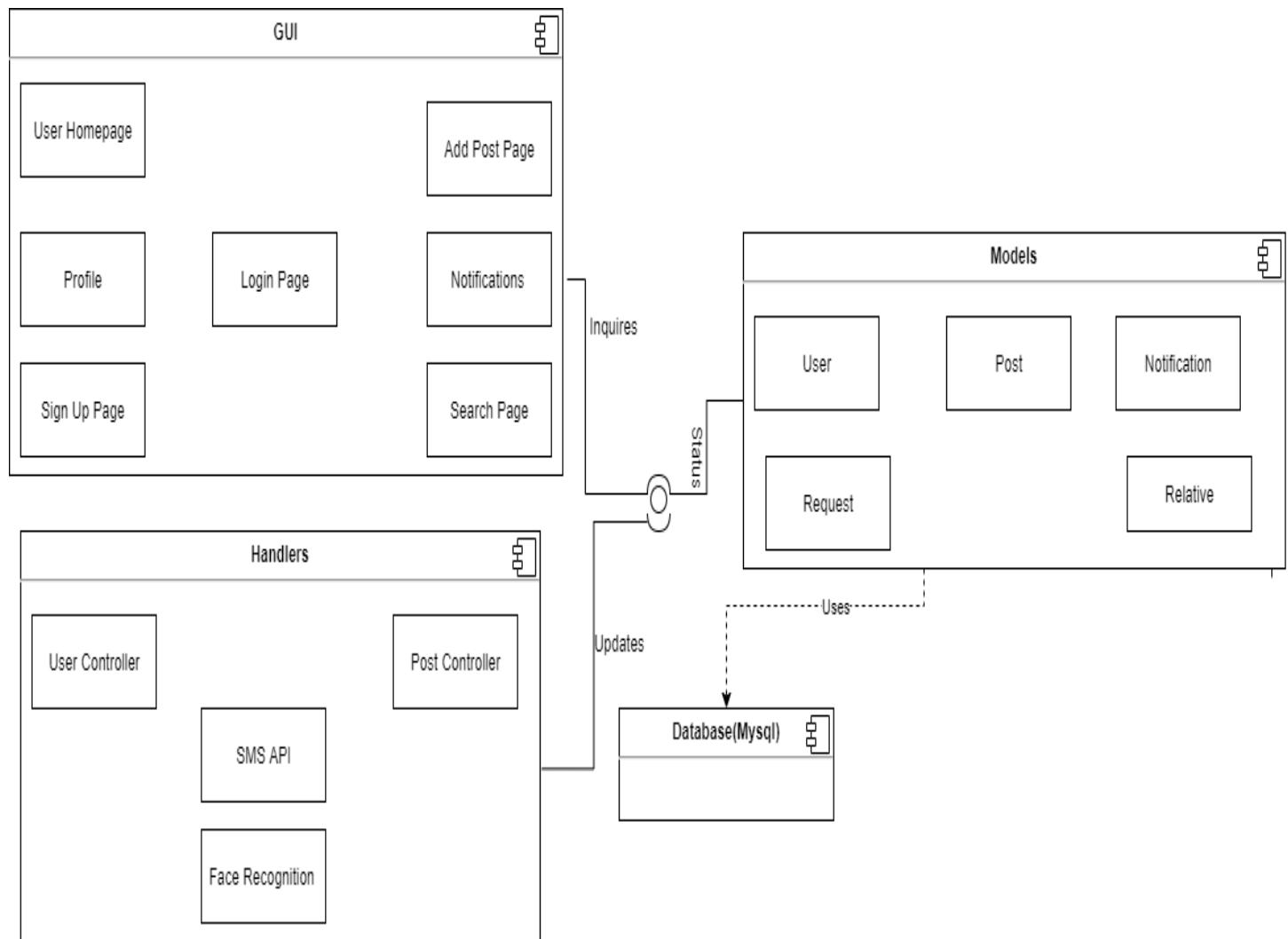


Figure 4. 1 System Component Diagram



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4.2 System Class Diagrams

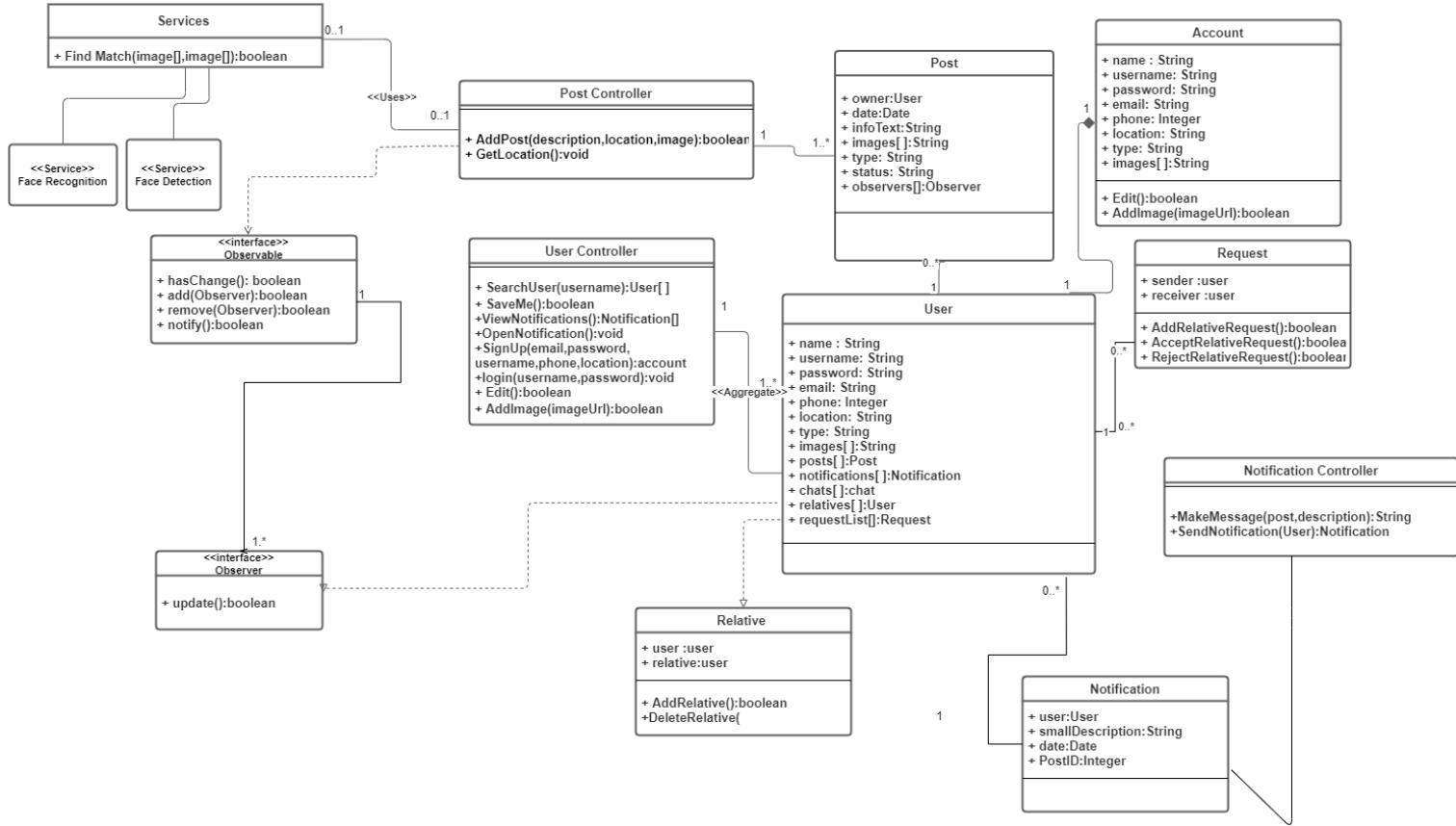


Figure 4. 2 Class Diagram for missing and kidnapped people system

4.3 System Sequence Diagrams



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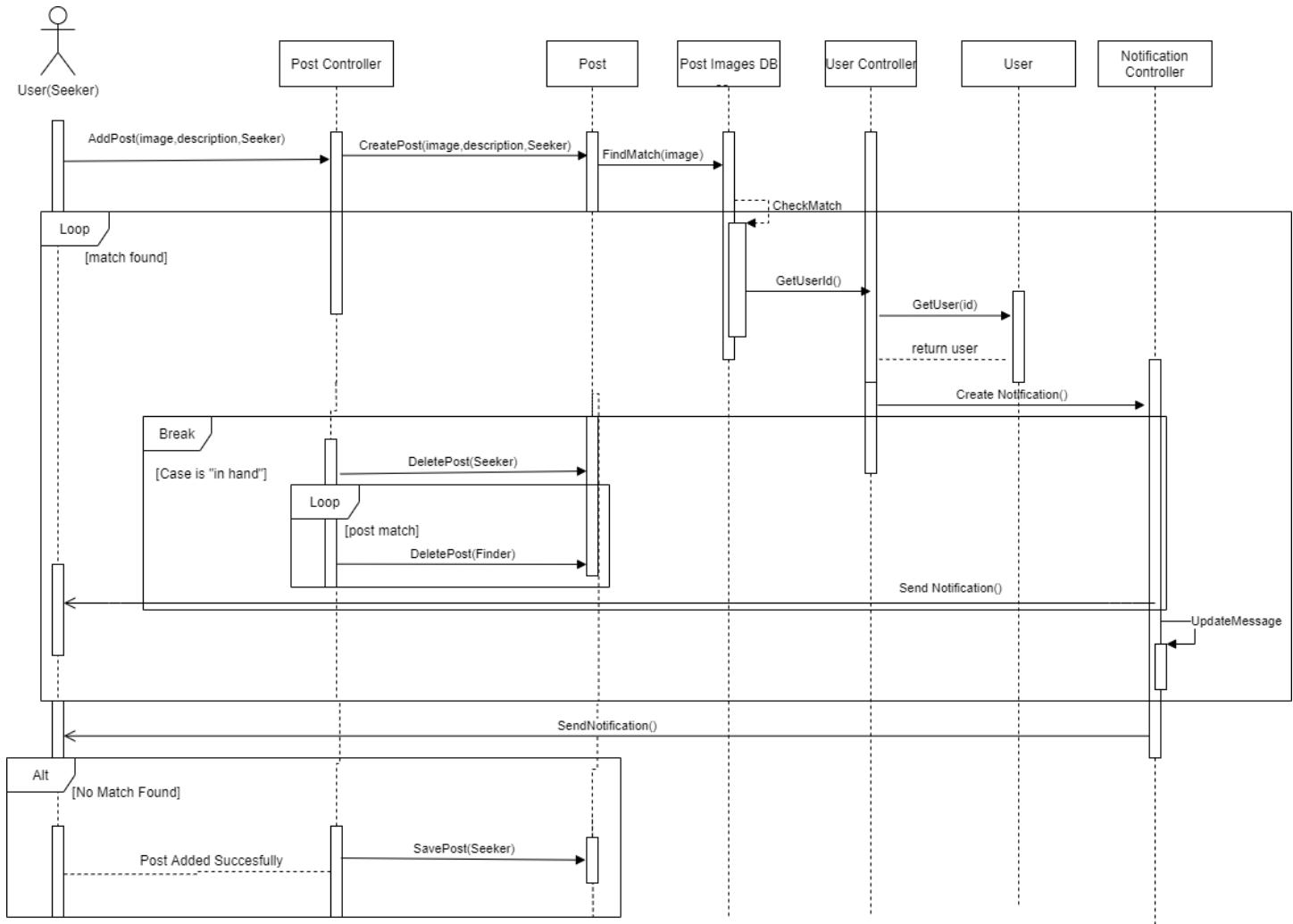


Figure 4. 3 Add post for seeker sequence diagram



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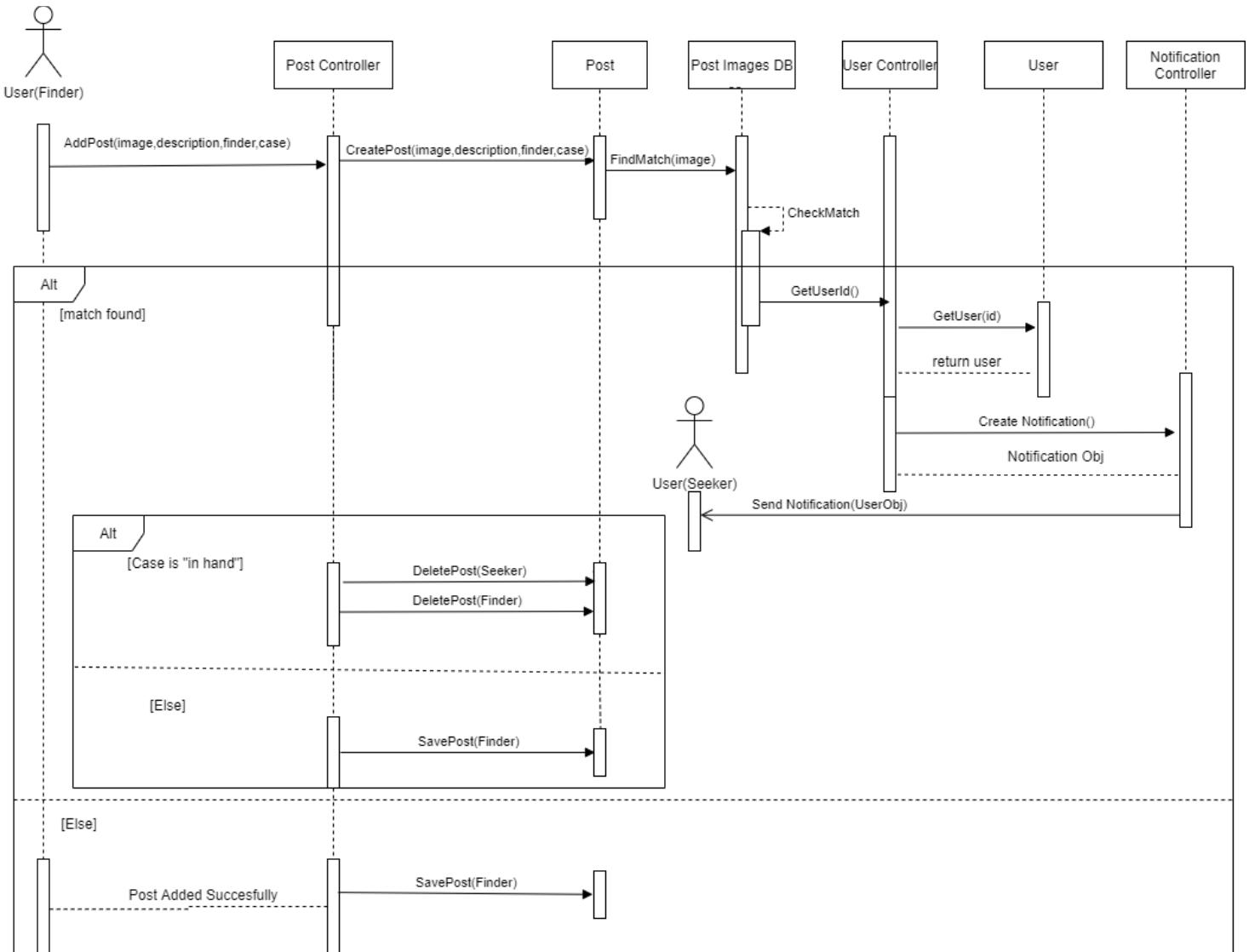


Figure 4. 4 add post for finder sequence diagram



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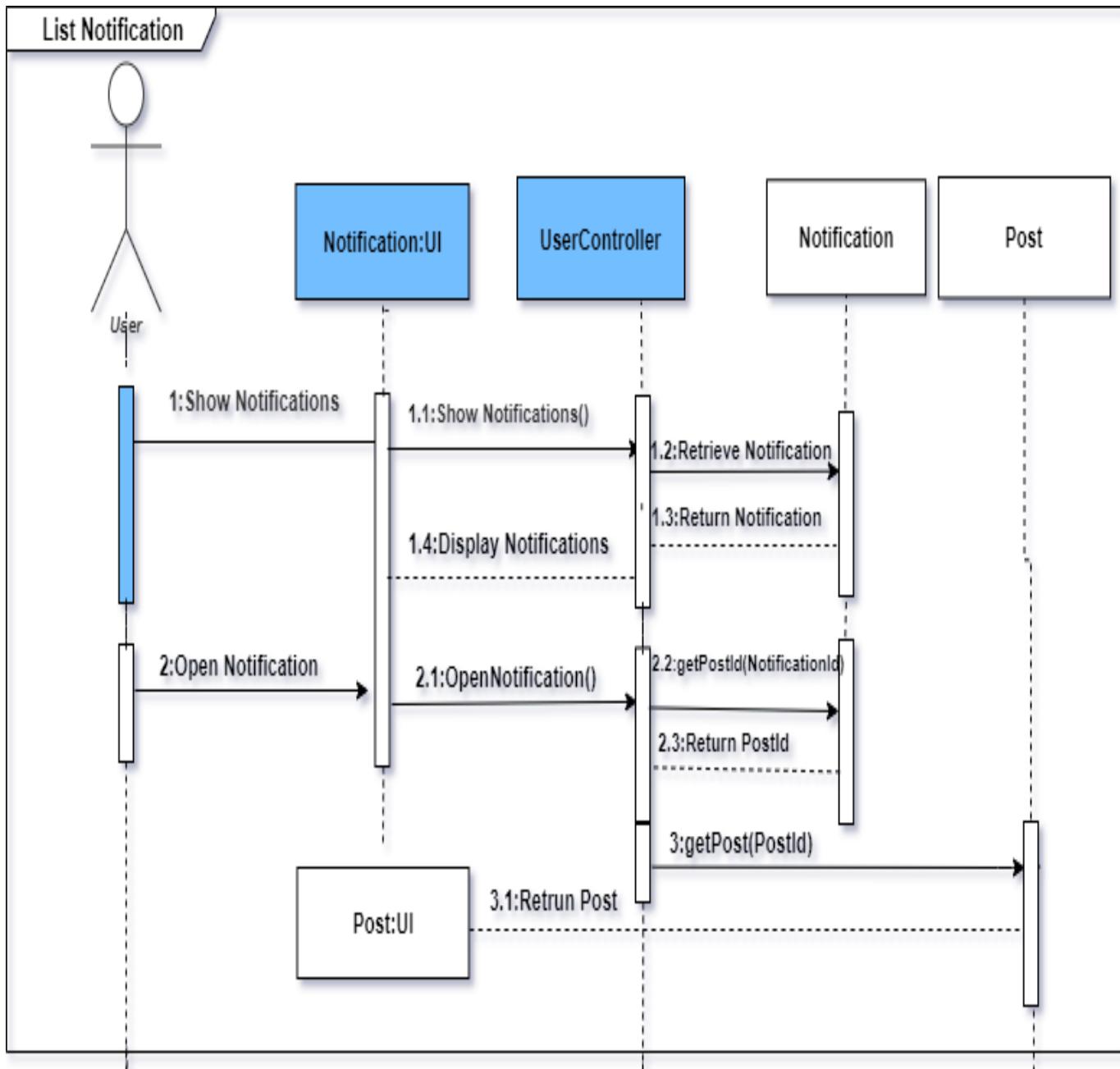


Figure 4. 5 List Notifications sequence Diagram



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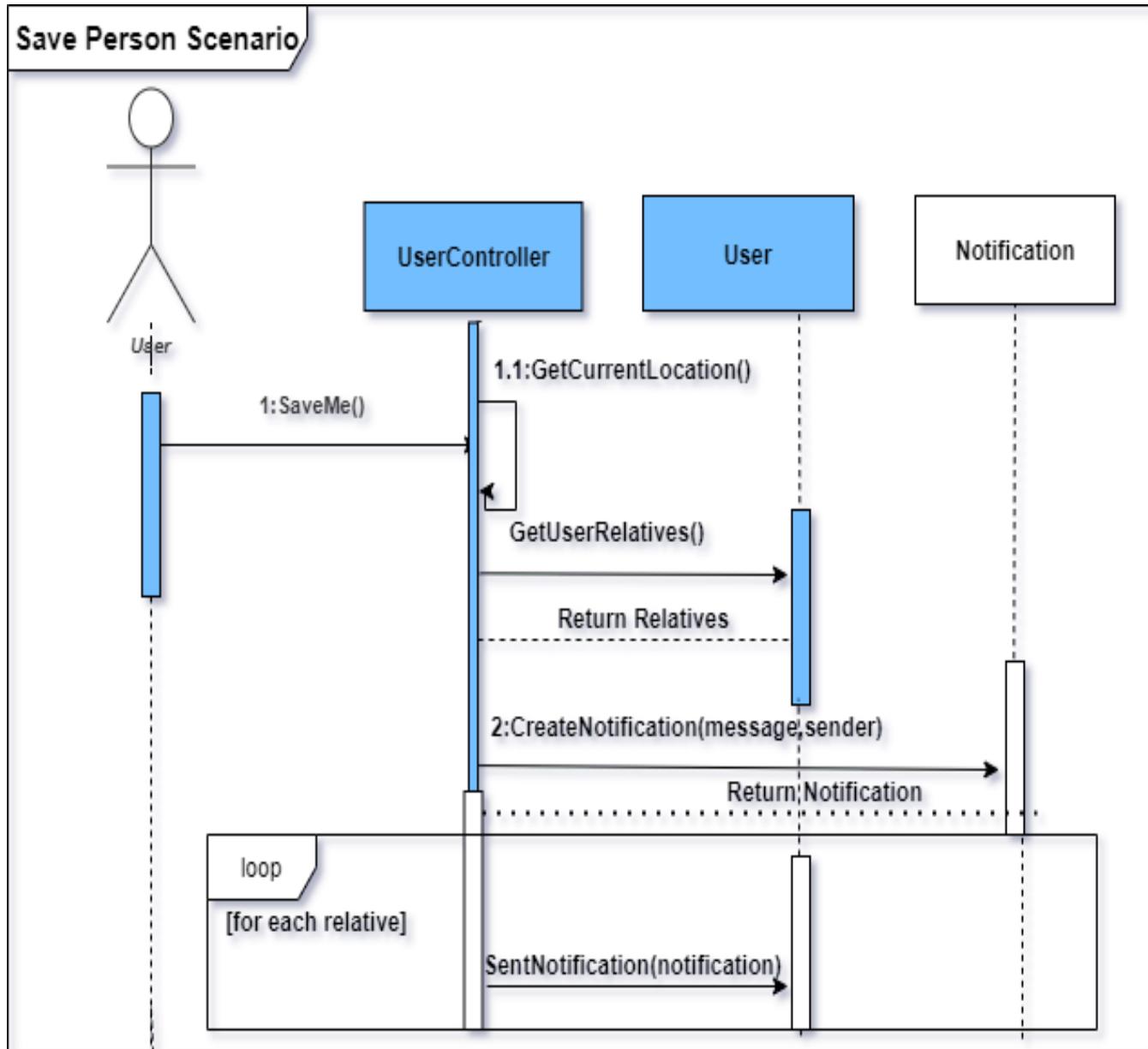


Figure 4. 6 Save person Sequence Diagram



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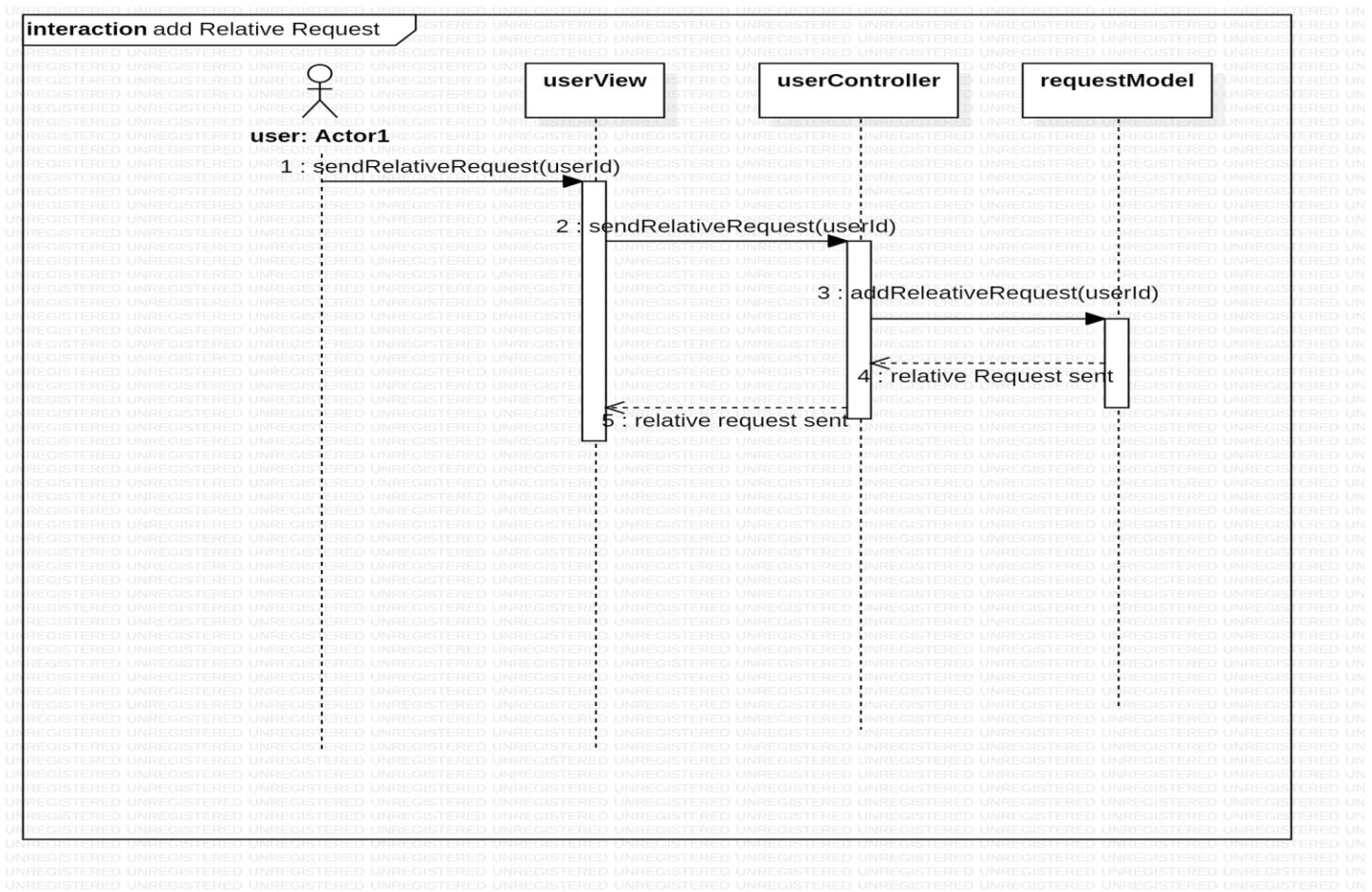


Figure 4. 7 Add Relative Request Sequence Diagram



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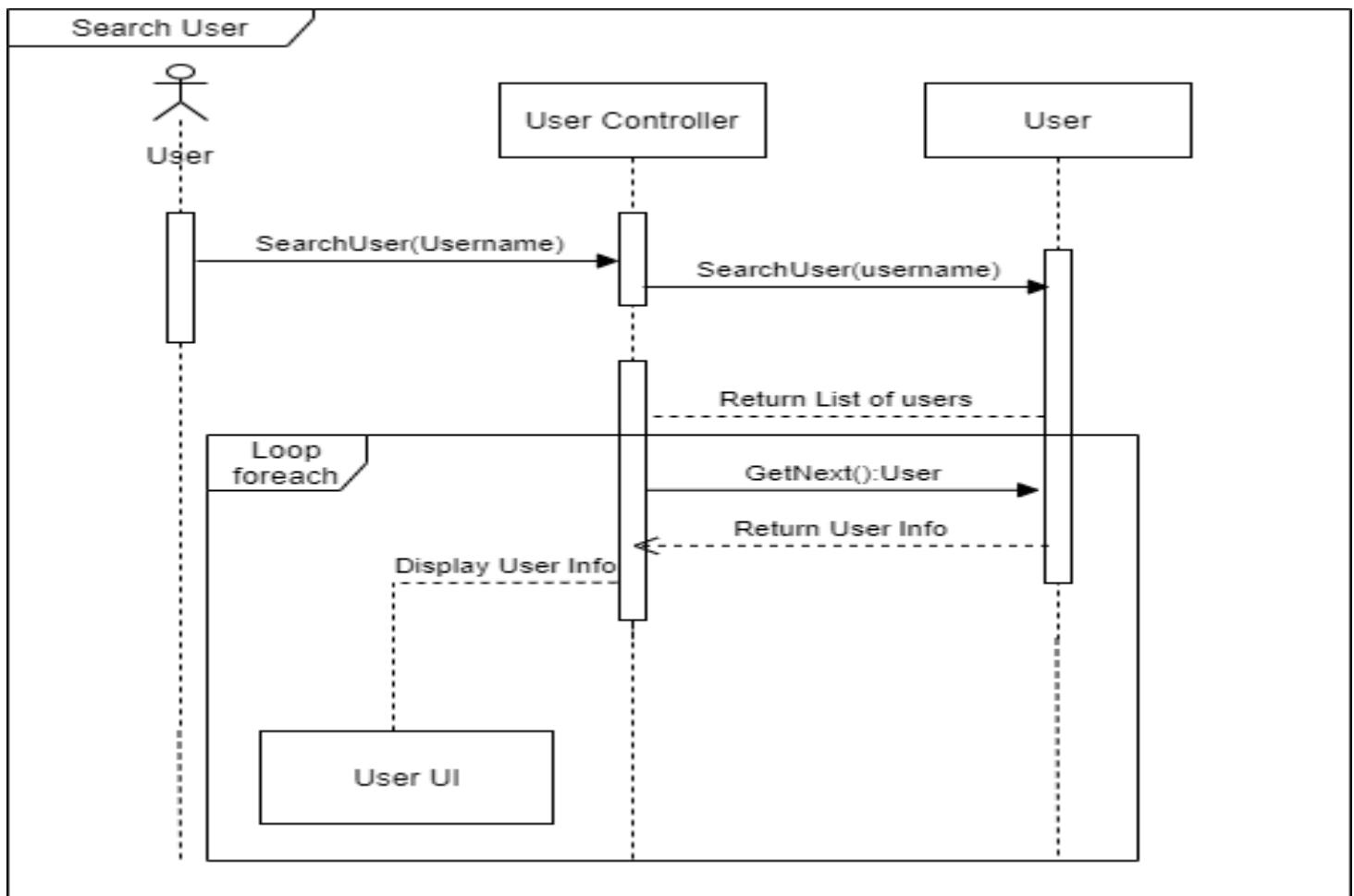


Figure 4. 8 Search User Sequence Diagram



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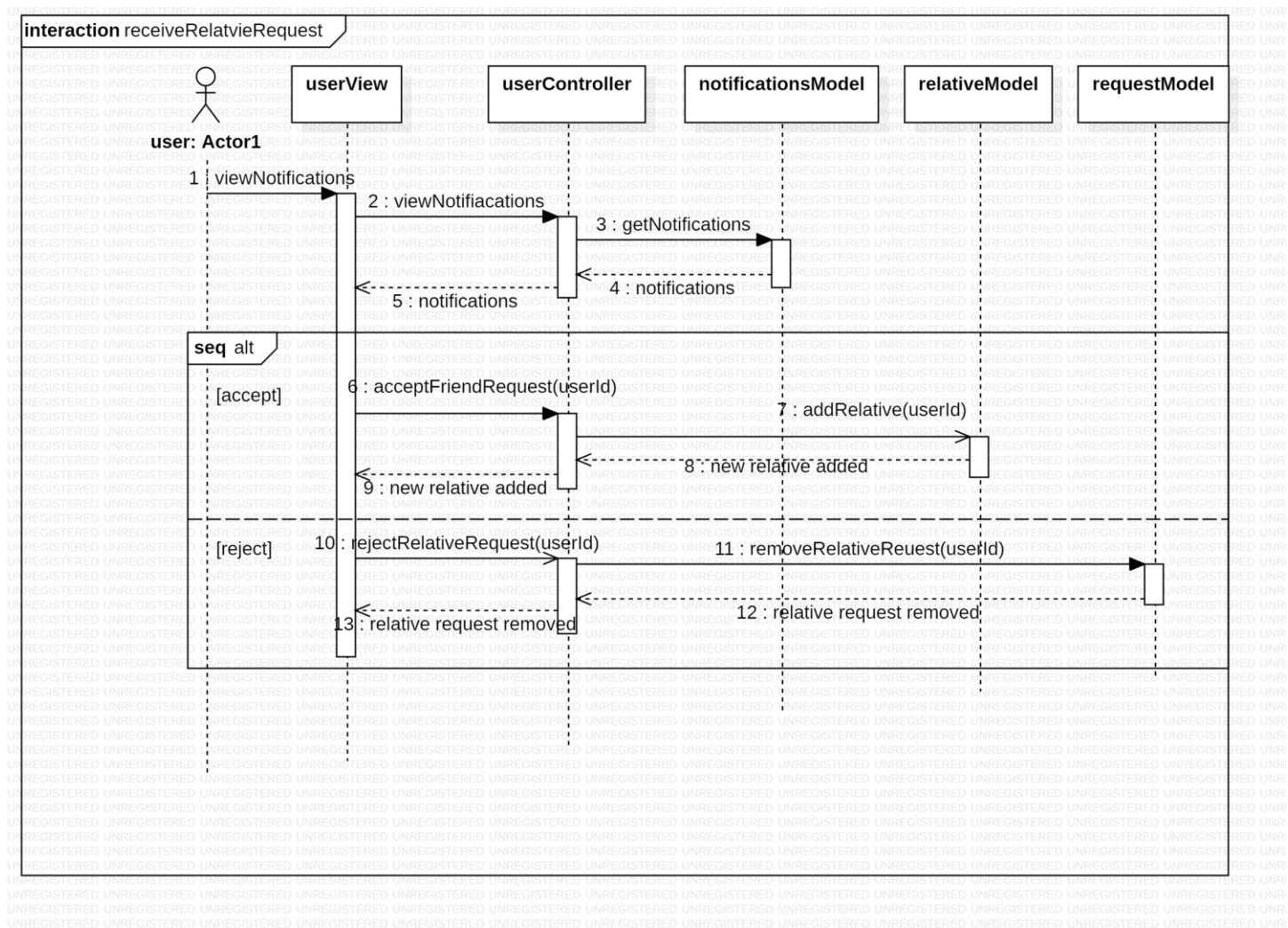


Figure 4. 9 Receive Relative Request Sequence Diagram



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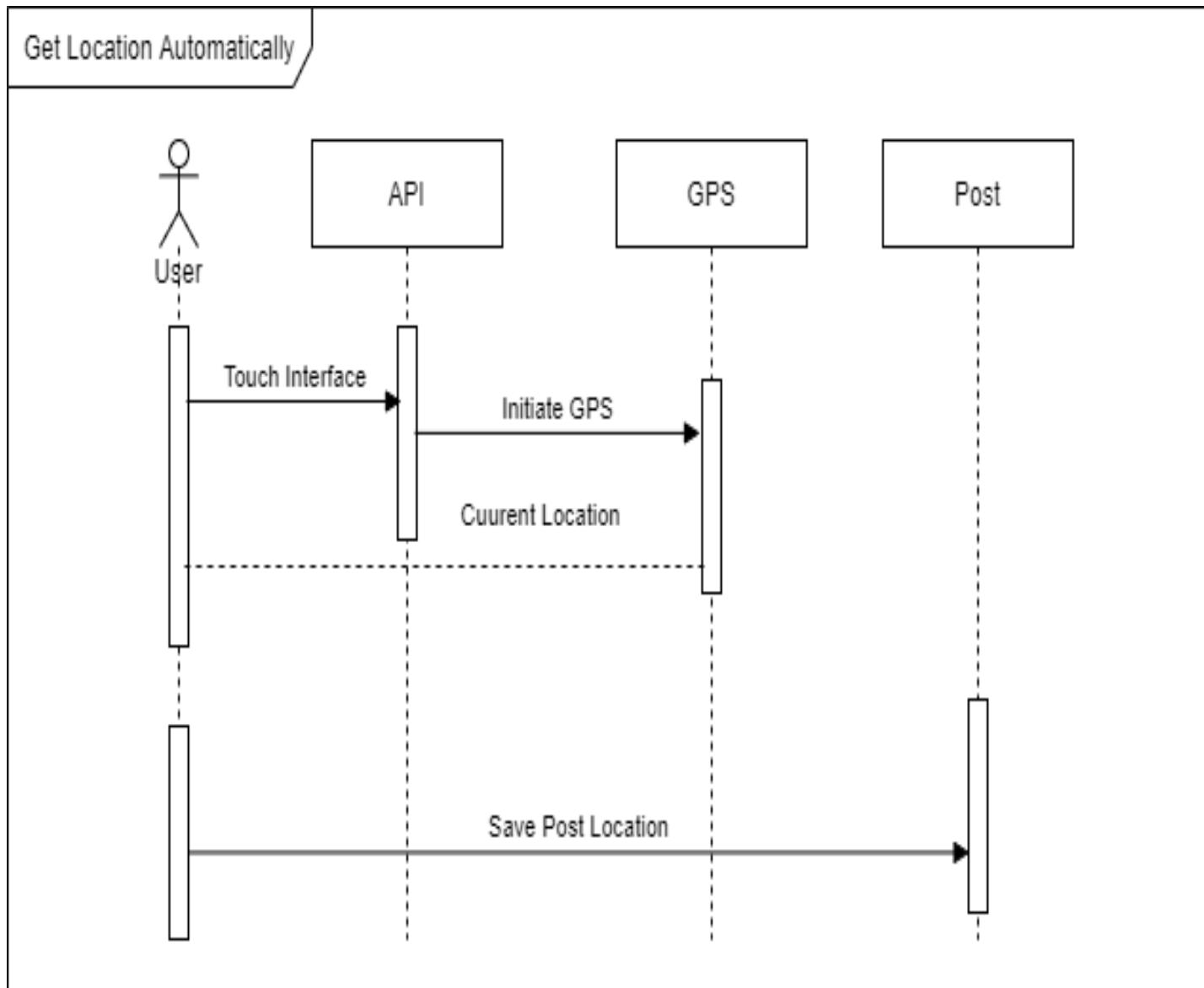


Figure 4. 10 get location Sequence Diagram



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4.4 Project ERD

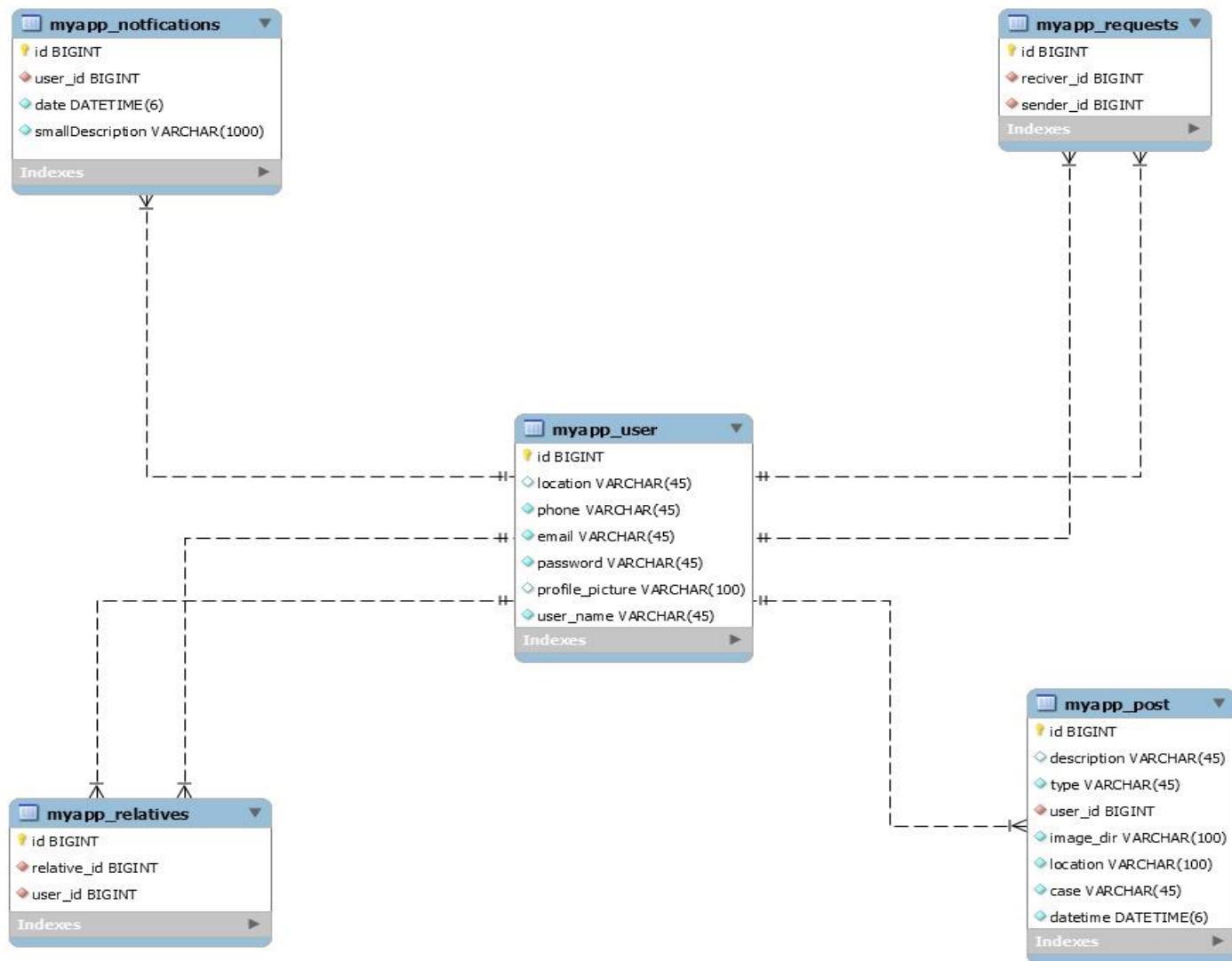


Figure 4. 11 Database Entity Relationship Diagram (ERD)

4.5 System GUI Design



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Welcome Back!

SignUp

User Name
E-mail
Password
phone number

SignUp

Figure 4. 12 sign up page

Welcome Back!

Login

E-mail
Password

Login

SIGN UP

Figure 4. 13 login page

Sign up Page

User should enter all the fields represented in the page as all of them are required otherwise a user-friendly error message appear to the user. **User name** can be letters and numbers according to the user's desire. **Email** should be a valid one in the correct format. There are no restrictions for the **password**. **Phone number** field requires 10 digits. Phone number enables the system to send an emergency sms to their owners. A user can make an account with a unique phone number.

Login Page

if the user has an account he should enter his registered email and password an appropriate message would appear to the user otherwise. User can access sign up page if he is not registered to the system.



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The screenshot shows a user interface for a social media-like application. At the top, there's a navigation bar with icons for Home, Notifications, and a profile picture. Below the bar, a message says "Hi ahmed hafez Welcome Back!". A blue button labeled "+ ADD POST" is visible. The main content area displays a post by "ahmed hafez" from "06/21/2021". The post text reads: "I found this kid near the mall if any one recognize him please send me". Below the text is a photo of a smiling young boy. At the bottom of the post, there's a "Delete Post" button with a trash icon.

Home Page

user home page appears to the user after login with the right credentials. Here, user can view his previously added posts. Posts include date they were added in, description and an image. He can add a new post from the top right corner. He can delete post after posting it if the reported case was found by an outsource organization. He can access notifications from the bottom navigation bar.

Figure 4. 14 home page

The screenshot shows a "Notifications" page. At the top, there's a navigation bar with icons for Home, Notifications, and a profile picture. The main content area lists several notifications in a scrollable list:

- Post Matched! Thank you for your help. Seeker will contact you soon. here are th... 07/23/2021,
- Match Found! here are the finder details: 07/24/2021,
- we did not find any match yet , but we will keep you with updates if anything ne... 07/25/2021,
- Match Found! the following user has seen the missing person. here are his details : 07/26/2021,
- Post Matched! Thank you for your help. Seeker will contact you soon. here are th... 08/23/2021,
- Match Found! here are the finder details: 08/24/2021,
- we did not find any match yet , but we will keep you with updates if anything ne... 08/25/2021,
- Match Found! the following user has seen the missing person. here are his details : 08/26/2021,
- Post Matched! Thank you for your help. Seeker will contact you soon. here are th... 09/23/2021,
- Match Found! here are the finder details: 09/24/2021,

Notification Page

user notification page is where a user can view matched posts updates. Notifications sent by the system are whether a post was matched and “seeker or finder” details were sent so as to contact them. no match was found by the system user should try reach an outsourcing organization as the system database did not match any image however he can wait till a finder add a post.

Updates with kidnapped person moves with dates and locations.

his relative request was accepted by another user.

Figure 4. 15 Notification page



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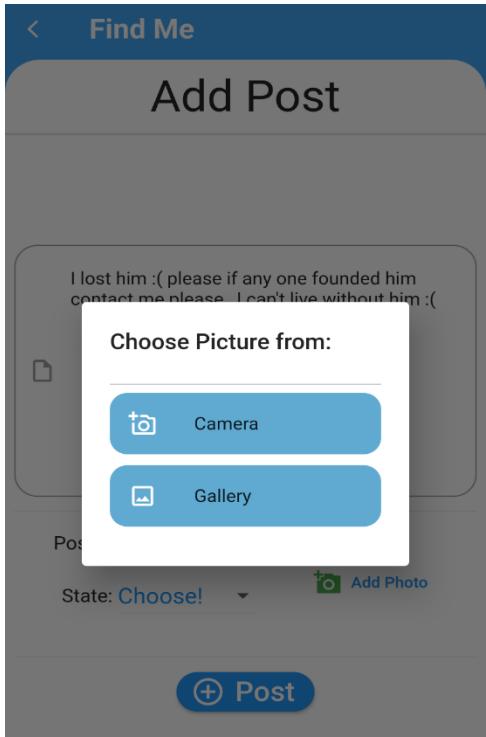


Figure 4. 16 add post page

Add post Page

In this page user can report a case to the system

From Add photo button user can choose whether to access the camera or phone gallery.

User can add small description to the attached photo with missing person case whether he is alive or dead.

Drop down menu for specifying the post type if it is a “finder or seeker” post.

Drop down menu for specifying the state if it’s a finder post whether it is “inhand or kidnapped” case.



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Profile Page

user profile page displays user information(user name, email and phone number), search bar, relative requests sent by another users and his relatives list.

Relative Requests

	abdo	<input type="button" value="Confirm"/>	<input type="button" value="Delete"/>
	ricardo	<input type="button" value="Confirm"/>	<input type="button" value="Delete"/>
	shihap	<input type="button" value="Confirm"/>	<input type="button" value="Delete"/>

Your Relatives

	ali	<input type="button" value="Delete"/>
	mohamed ali	<input type="button" value="Delete"/>
	frank	<input type="button" value="Delete"/>

Figure 4. 17 profile page

Search Page

User enters here user name of an account system then views list of users which includes the same name. user usually uses this search bar to search from users to add them to his relatives.

Figure 4. 18 search page



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Chapter 5: Implementation and System Test cases

In this chapter we will mention the most remarkable functions in our project and the deep face technology which we imported as a library.

Match(image1,image2):

It's the main function of our project as the whole system depends on matching faces appearing in different images, this function makes use of Deep face system to extract features by two main processes:

1-Face detection

2-Face recognition

Then it compares the resulted encodings of the two faces detected in both images, returns true in case of matching and false otherwise.

AddPost(image ,description,location,type):

Here we make use of the previous function in reaching our goal of finding missing people as fast as possible so when the user adds a new post the information required to successfully add it are:

- Current location: when a match is found, reaching the post owner will be easier.
- Description: a small hint about the health status of the person (type =finder).
- Image: the used attribute for searching.
- Type: it may be Seeker or Finder post.

By completing the input process, the algorithm begins to find a match between the recently uploaded image and all images that has been uploaded before by the opposite type of post

Example: if the owner of the post is a seeker who looks forward to finding his missing person, then the matching process only applied to images attached to finder type posts.

If the loop ends with no matching post the post is saved to the database to be used later on every new record adding.

Otherwise, the system communicates the post owner and the matched post owner via notifications include the required info for calling or emailing.



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There is a special case in this function where the finder doesn't have the missing person in hand but just saw him in some place being kidnaped, this kind of posts never be deleted from database, so the seeker get a composed notification contain all matched posts locations ordered by date which is hopefully help tracking the missing one.

SendNotification(User,Description,Date,PostId):

An entity by which the process of communicating the seeker and finder be faster as it contains the recent location of the missing person has been found, the number of the finder.

SaveMe():

This function used in case of emergency the logged in person press the “save me” button so it triggers the algorithm of sending notification many times equal to number of relatives that this person have on his account , this notification contains the location of the person in danger which obtained automatically using a GPS API.

Deep face

DeepFace is a deep learning facial recognition system created by a research group at Facebook. It identifies human faces in digital images. The program employs a nine-layer neural network with over 120 million connection weights and was trained on four million images uploaded by Facebook users. the conventional pipeline consists of four stages: detect \Rightarrow align \Rightarrow represent \Rightarrow classify. The program revisit both the alignment step and the representation step by employing explicit 3D face modeling in order to apply a piecewise affine transformation and derive a precise face representation.

Face recognition 4 stages

Face Detection: It can even detect faces in the crowd. Besides, it finds some facial landmarks including eye coordinates. In this way, its alignment score is high as well.

Face Alignment: It is the stage for identifying the geometric structure of human faces in digital images. Given the location and size of a face, it automatically determines the shape of the face components such as eyes and nose.



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Face Representation and Classification:

DeepFace is trained for multi-class face recognition i.e. to classify the images of multiple peoples based on their identities.

Deepface is a face recognition and facial attribute analysis (age, gender, emotion and race) Python framework. It is a hybrid face recognition framework wrapping external state-of-art models as VGG-Face, Google FaceNet, Facebook DeepFace and more. Those models already reached and passed the human level accuracy. The library is mainly based on keras and TensorFlow. It is also licensed under MIT license. What is interesting about this library is that it provides streaming and real time analysis too as you can run Deepface for real time videos as well. It will access your webcam and apply both face recognition and facial attributes analysis. The function starts to analyze a frame if it can face sequentially 5 frames. Then, it shows results 5 seconds.

Face recognition pipeline as mentioned previously consists of 4 common stages: detect, align, represent and verify. Deepface handles all these common stages in the background. You can just call its verification, find or analysis function with a single line of code.

Face Verification

This function verifies face pairs as same person or different persons. It expects exact image paths as inputs. Passing numpy or based64 encoded images is also welcome.

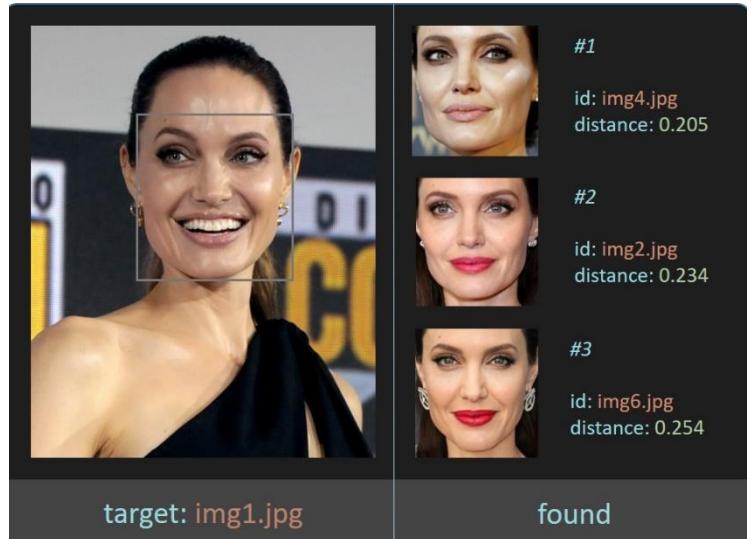


Figure 5. 1 DeepFace Library matching two images



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Test Cases

Sign up with Empty Name

Test Case

Welcome Back!

SignUp

User Name

E-mail

Password

phone number

SignUp

Sign up with invalid Email

Format Test Case

Welcome Back!

SignUp

User Name Moaaz

E-mail moo122

Password

phone number

SignUp

Sign up with taken Email or Empty fields

Welcome Back!

SignUp

User Name Moaaz

E-mail mo@gmail.com

Password

phone number

SignUp

Please Enter Name

◀ O □

Enter Valid Email

◀ O □

user_name taken|email taken|no field can be empty

◀ O □

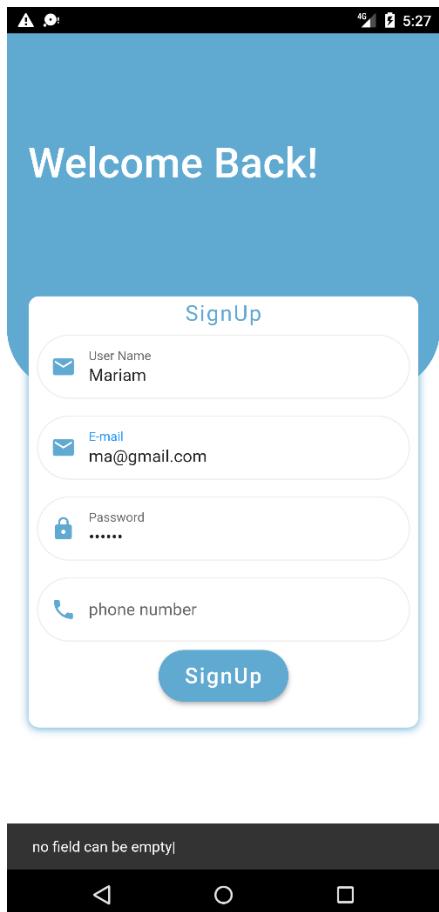
Figure 5. 2 Sign up test case



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Sign up with any Empty text

Field Test Case



Sign up Successfully

Test Case

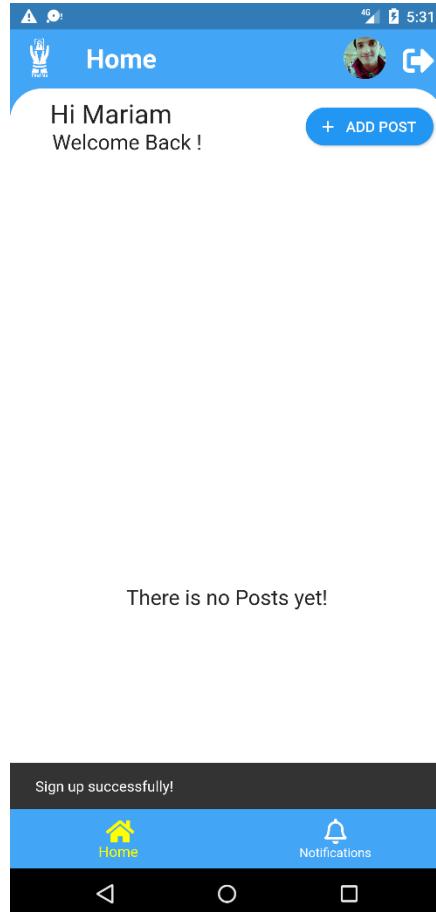
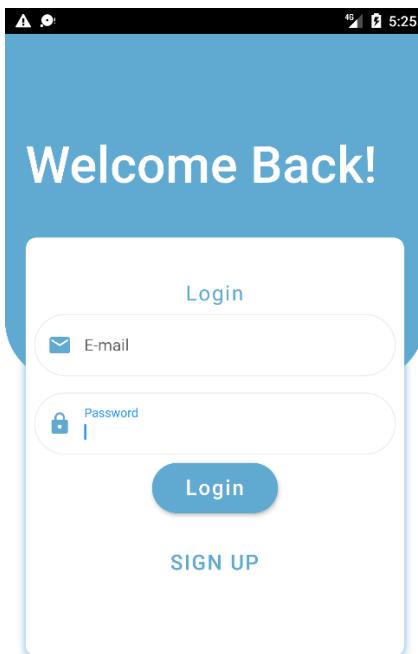


Figure 5. 3 Complete sign-up test case

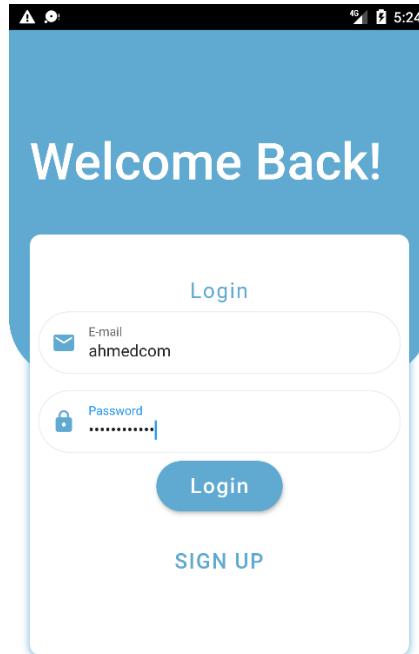


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Login with Empty text field
Test Case



Login with invalid email
Format Test Case



Login with invalid account
"Wrong email or password "

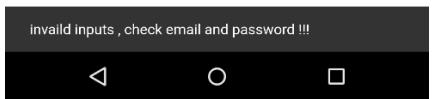
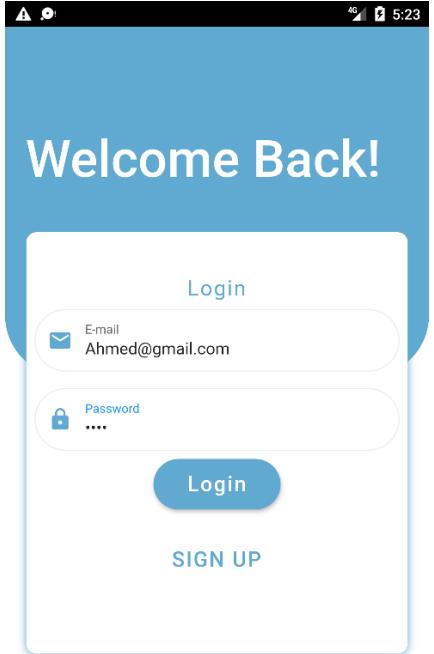


Figure 5. 4 Login test case



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Login Successfully

after entering right credentials application redirects user to his home page where he can view his previously added posts.



Figure 5. 5 complete Login test case

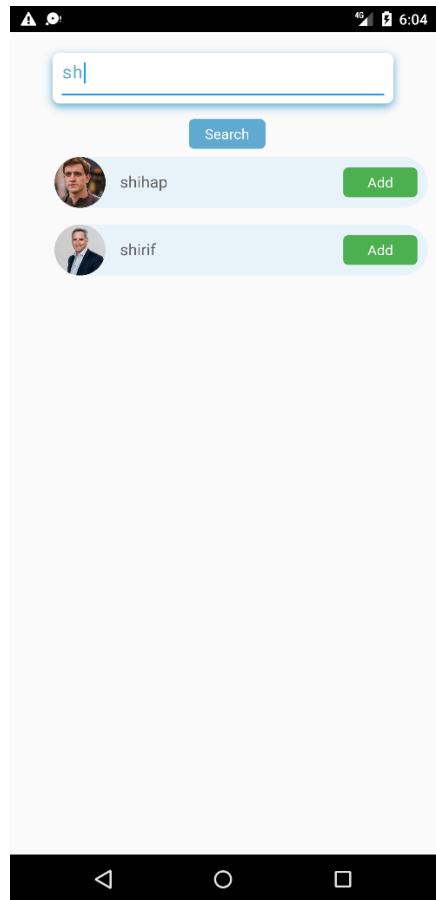


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Sending Relative Requests:

Send Relative Request Test Case

**Enter username in
search bar**



**Relative request sent
after clicking add button**

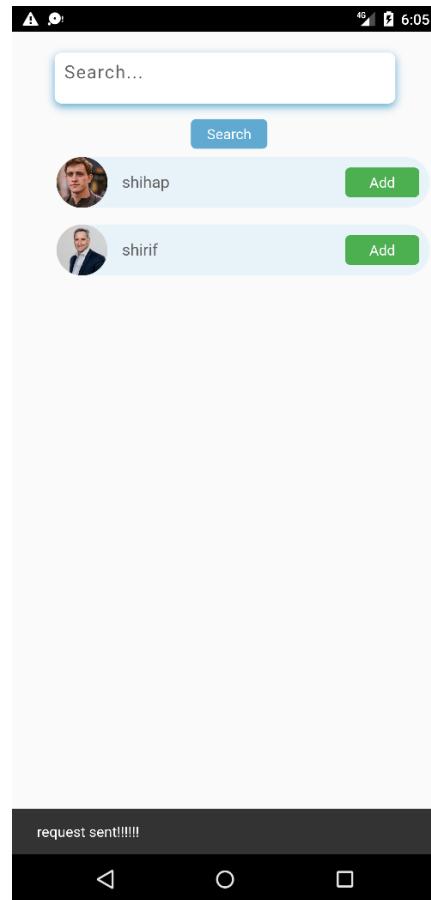


Figure 5. 6 Sending Relative requests test case

Receiving Relative Requests:



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Confirm Relative Request Test Case

Open user profile



Confirm “Abdo” relative request



“Abdo” added as a Relative



Delete Relative Request Test Case



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Delete “shihap” Relative Request



“Shihap” Relative Request Deleted



Figure 5. 8 Delete relative request test case



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Delete a Relative Test Case

**Delete “Mohamed Ali”
from relatives**

Relative deleted

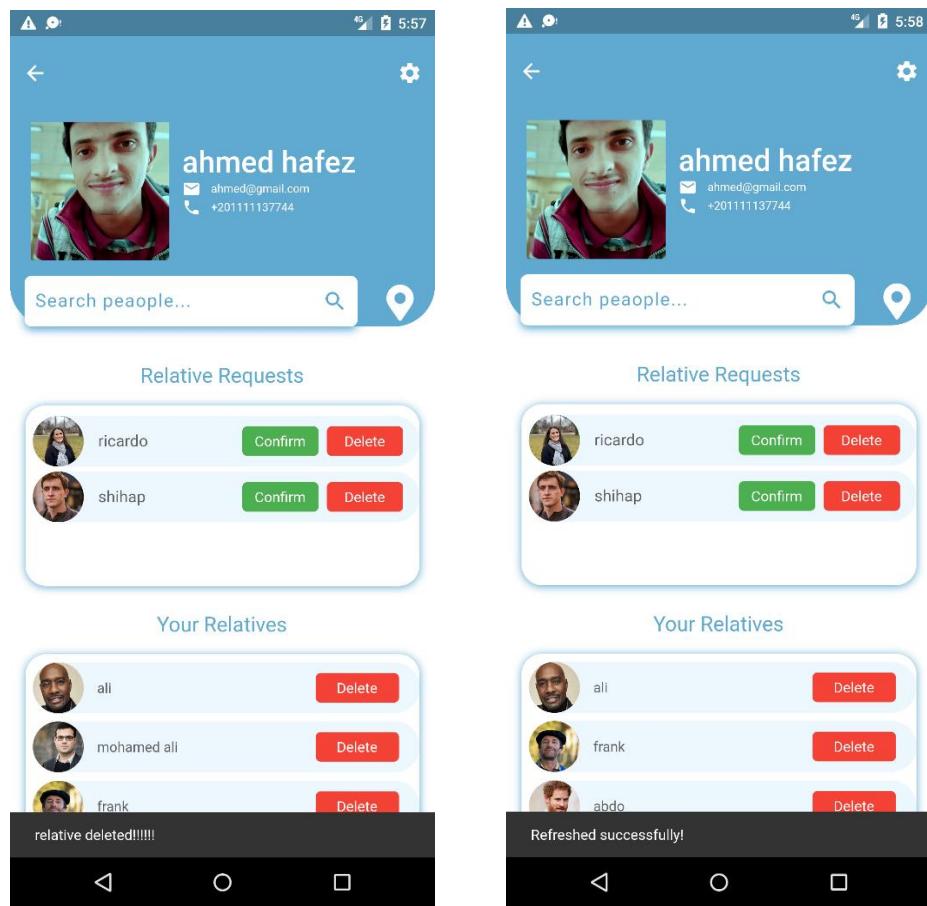


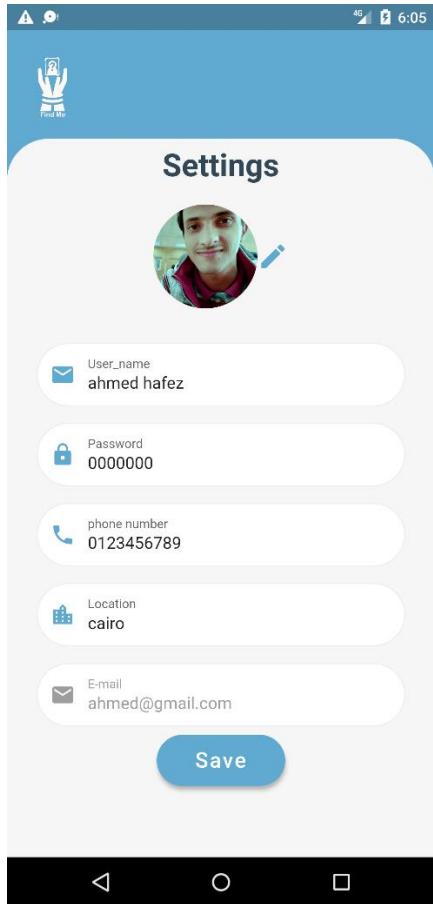
Figure 5. 9 Delete relative test case



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Edit profile fields Test Case

Open profile settings



Edit password field

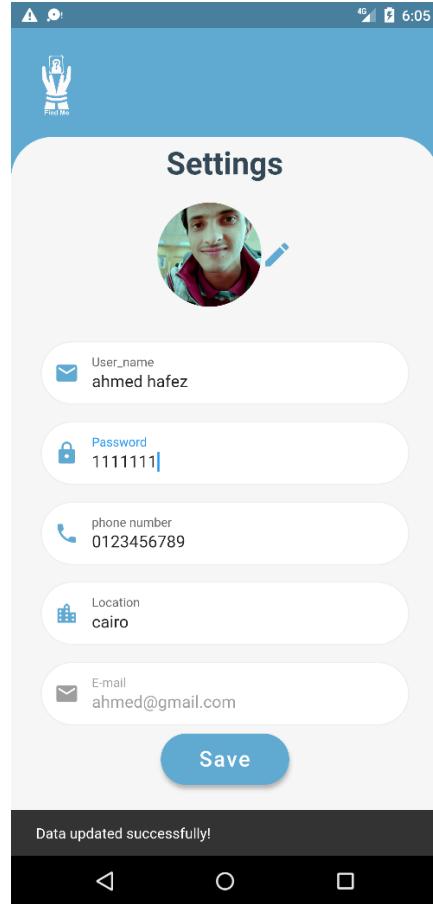


Figure 5. 10 Edit profile test case

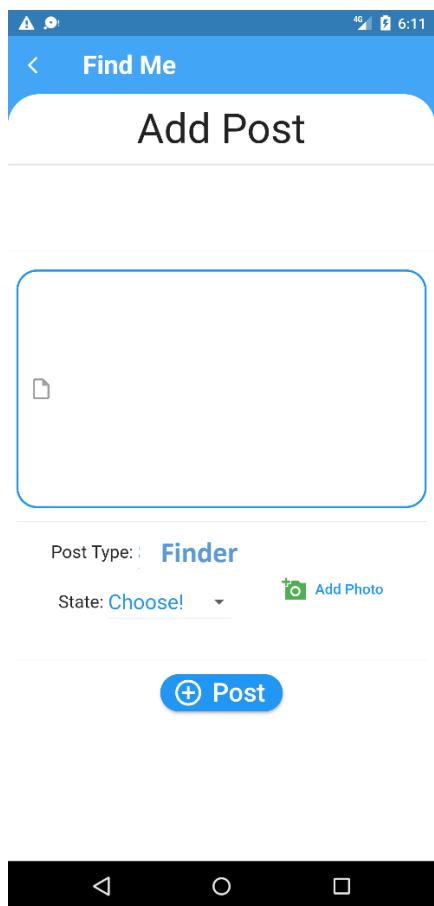


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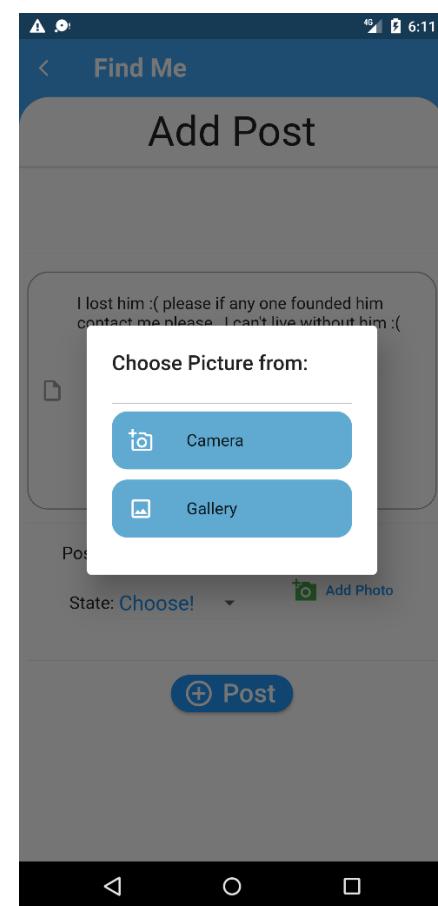
Adding a Finder post

Test Case

Enter description
choose “finder post” type
from the drop down menu
choose state whether “inhand”
or “kidnapped”



Choose a picture to be added to the post



Finder post added

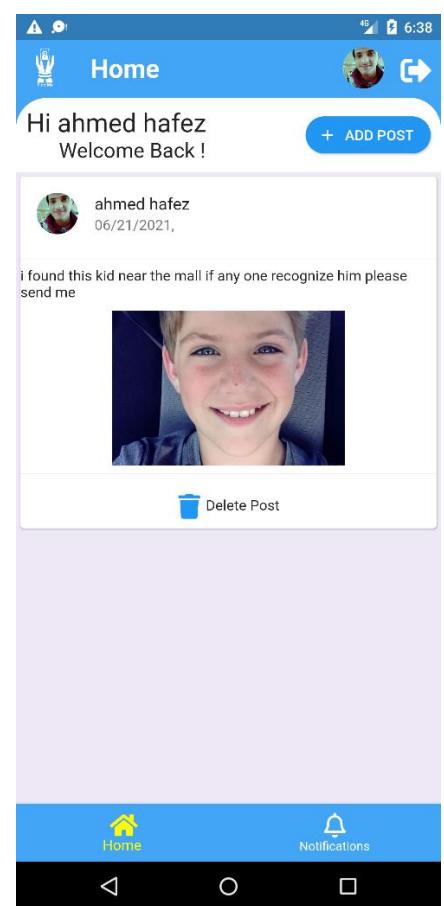


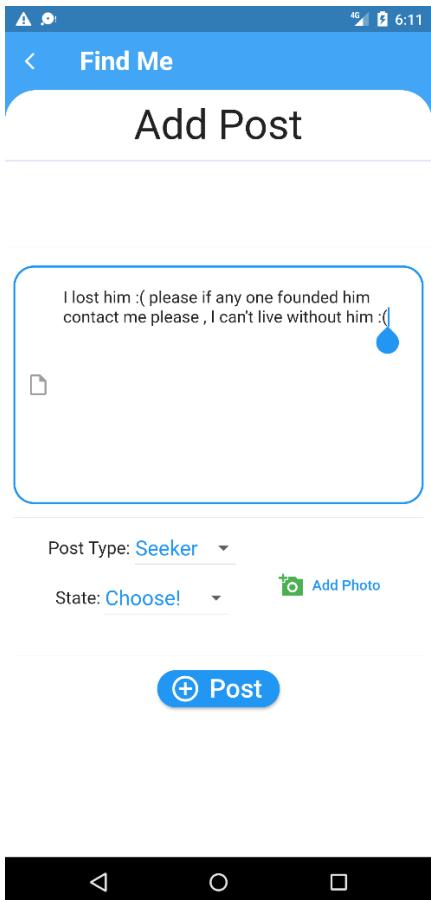
Figure 5. 11 Add finder post test case



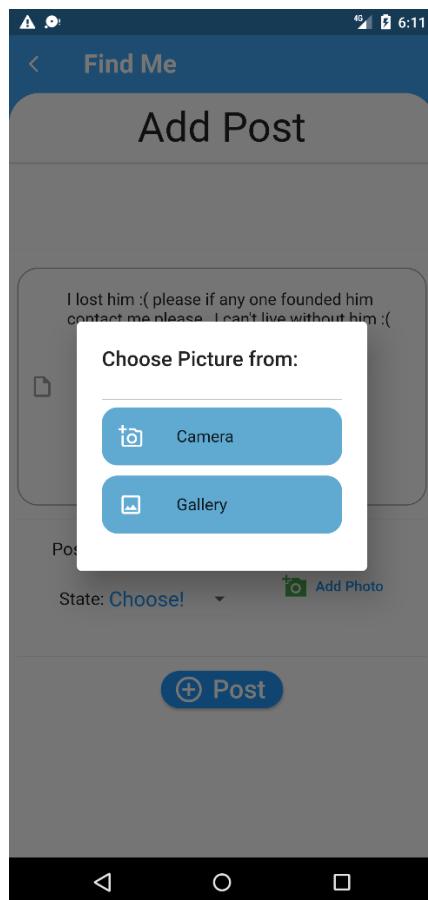
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Adding a Seeker post Test Case

**Enter description
choose “Seeker post” type
from the drop down menu**



**Choose a picture to be added
to the post**



Seeker post added

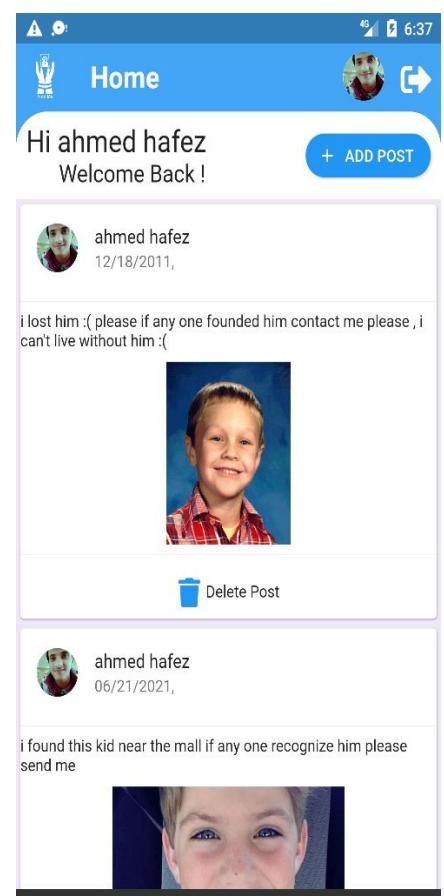


Figure 5. 12 add seeker post test case

Delete a post Test Case



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Post deleted



All posts has been deleted



Figure 5. 13 Delete post test case

Match Found for seeker post test case



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**The seeker post added successfully
And the matching algorithm
searches all finder posts**

**When a match is found the
seeker receive a notification
contains email, phone and
location of the finder.**

Home

Hi ahmed hafez
Welcome Back!

+ ADD POST

ahmed hafez
06/20/2021,

i lost him :(please if any one founded him contact me please , i
can't live without him :(

Delete Post

Notification

More Information

Match Found! here are the finder details:

username:mohamed
email:mohamed@gmail.com
phone:01143789452
date:07/23/2021, 19:15:47
post location:egypt

Figure 5. 14 Match found for seeker post test case



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Constraints

- The Internet connection is a constraint for the System, since the App always fetches data and compare photos from the database, all this have to be done over the Internet, it is crucial that there is an Internet connection for the application to function.

Software constraints

- Languages used are Python and the Flutter SDK.
- The system shall use the current standard MySQL database engine.

Assumptions and dependencies.

- We assumed that all people involved in this system have internet access.
- Facial recognition accuracy depends on the size and quality of the pictures in the database used to recognize a face. It's required to find matching points between the uploaded image and other pictures in the database.

Out of our scope

- Face recognition functionality for Missing child in case his features are not complete yet (1-2 years old).
- Finding a matching points between images for the same person taken in variant ages with difference in age enough to change his facial features (Searching for a child lost when he is ten but found by his thirties).



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Deep Face

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<https://sefiks.com/2021/04/27/deep-face-detection-with-retinaface-in-python/>.
<https://snyk.io/advisor/python/deepface>.

Flutter Course

<https://www.youtube.com/playlist?list=PLlxmoA0rQ-Lw6tAs2fGFuXGP13-dWdKsB>
<https://www.youtube.com/playlist?list=PLqPejUavRNTXQyOCdA8vw-xN-yhFBK9S6>

Django Course

https://youtube.com/playlist?list=PLknwEmKsW8OtK_n48UOuYGxJPbSFrICxm

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