Forensics Management System

Makes the system of crime-solving efficient

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ABSTRACT

Objective

Modern science and technology have revolutionized the field of crime-solving and have made the process much faster and more reliable.

The word Forensic refers to all the science and technology used in the solving of crime.

The aim of this system is to manage the large volumes of data that are produced in the process of solving crimes by the application of scientific methods and modern technology.

When creating a new case file, the system will be able to store specific information in categories.

Such as crime scene photographs, details about any fire arms used, all the fingerprint and DNA evidence, etc.

In the event that a detective has to cooperate with other departments, this system can be used to easily collaborate on case files, temporary user profiles can be created if the other department does not implement this system.

Existing System

In Police Departments today, paper case records are made for each case and are normally kept at the Police station.

Admittance to the document relies upon the mindfulness of the station officials. For the most part, monitors and criminal investigators depend on their memory of particular case subtleties to frame associations between cases.

Various reports are mentioned from labs or different offices and every one of these offices need to messenger these delicate records, which sets aside time.

Proposed System

The proposed framework diminishes the paper trail.

Computerized records make the sharing and affixing of case documents simple.

Since admittance to the framework is needed to see a case document, it turns out to be exceptionally easy to follow and to admit directly to the case records.

Records from various labs with respect to investigations can be safely and immediately sent over the web.

This framework will expand the wrongdoing-tackling and record keeping capacities of police power.

<u>Keywords: -</u>

Forensics - All the science and technology used in the solving of crime.

Use case - A list of actions or event steps typically defining the interactions between a role and a system to achieve a goal.

Use case diagram - Use-case diagrams illustrate and define the context and requirements of   either an entire system or the important parts of the system.

Use case description - Written descriptions on how users and actors will perform tasks.

Extend - Extend is a directed relationship that specifies how and when the behavior defined in the usually supplementary (optional) extending use case can be inserted into the behavior defined in the extended use case.

Include - includes the functionality of another use case (the inclusion use case). The include relationship supports the reuse of functionality in a use-case model.

Admin - Admin is the one who organizes an institution or organization.

Guest – Any person who does get access to the system temporarily.

Server – System that is being used to store the data and provide related functions.

Actors – Any users that interact with a system

Classes - A class describes the contents of the objects that belong to it.

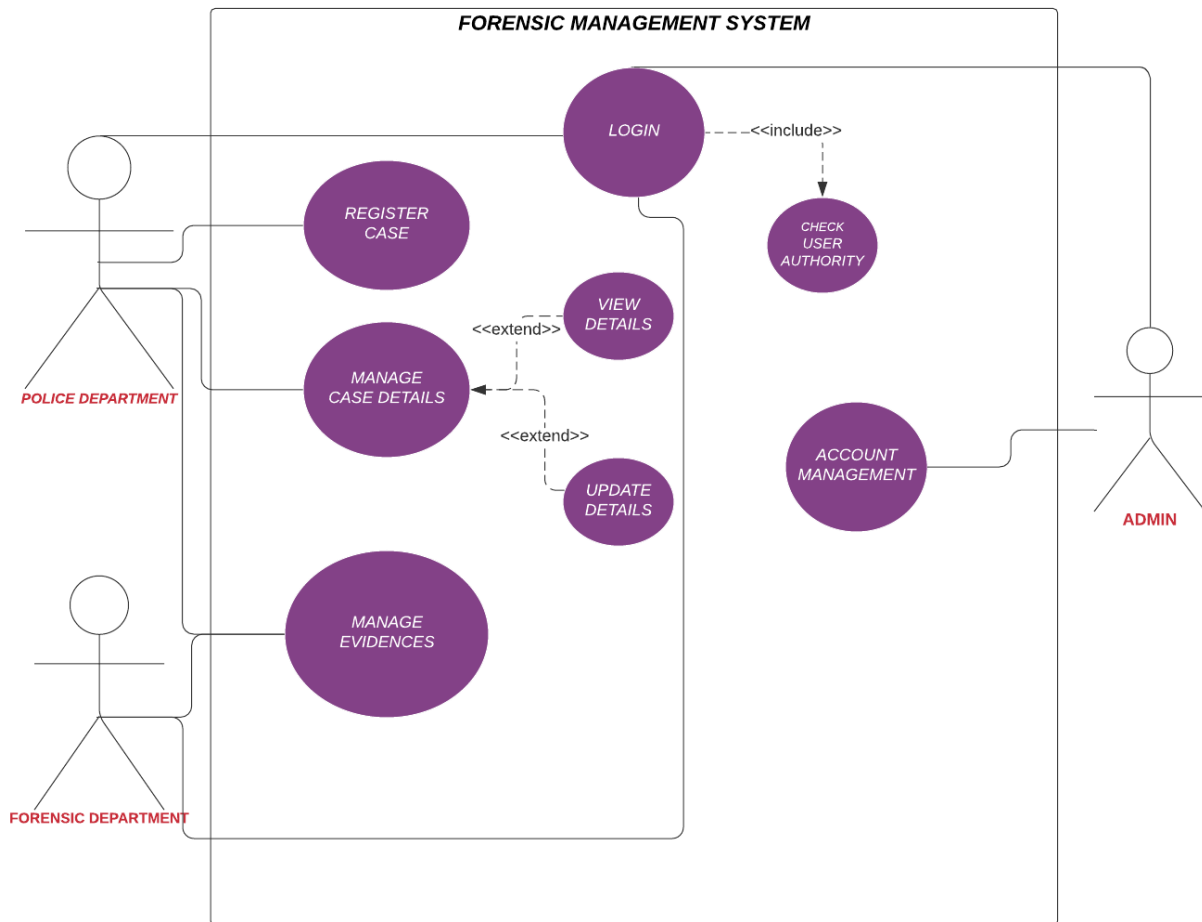**Objects -** An object is a real-world entity. An object is a runtime entity.

Functional Requirements of the System

I. User need to register with the system before using the application.

II. User need to login to the system to access case profiles.

III. User should have access to system and system should be connected to the internet.

IV. User should be authorized personnel.

USE CASE

Actors	Use case
Admin	Can create the user's profile and can grant or revoke the access to the other users.
Police Department	After login they can update case profile, view and update evidences as well
Forensic Department	After login they can manage Evidences.

USE CASE DIAGRAM

FORENSIC MANAGEMENT SYSTEM

LOGIN

- - - - <<include>>

REGISTER
CASE

CHECK
USER
AUTHORITY

VIEW
DETAILS

<<extend>>

MANAGE
CASE DETAILS

<<extend>>

ACCOUNT
MANAGEMENT

UPDATE
DETAILS

POLICE DEPARTMENT

MANAGE
EVIDENCES

ADMIN

FORENSIC DEPARTMENT

USE CASE DESCRIPTION

● **LOGIN**

Use case ID	Login
Brief description	Users can log in with their credentials to manage and access datas such as evidence, cases , login details.
Primary actors	Admin, Police Department Forensic Department
Precondition	The users should be registered in the system.
Post condition	The users will now have access to the distinct levels of the system based on their role.
Main success Scenario	Users can perform functions on datas stored.
Actor Action	**System Response**
1. The user will enter their credentials.	1. The System will display a welcome message along with the functions they can perform.
Alternate flow	
	1. System will show an error message if the entered credentials are wrong.

● **User Management**

Use case ID	User Management
Brief description	The admin can manage all users working in the system. The Login username and the initial password will be given by the admin to other users.
Primary actors	Admin.
Precondition	The admin should login as admin.

Post condition	The registered user can login and the deleted user cannot have further access to the system.
Main success Scenario	The admin should be able to manage all users including operations like registering, deleting and updating.

Actor Action	System Response
1. Admin selects the action that's to be performed.	System will ask the admin for the user-id.
2. Admin enters the user-id of the user whom the action is to be performed.	System asks for confirmation and asks the admin to re enter their passcode.
3. Admin enters password.	System shows a successful message and shows actions that can be performed.
Alternate flow	
	1. If not a valid user, the system returns an error message. 2. While registering a user, Admin has to enter details asked by the system before confirmation.

- **REGISTER CASE**

Use case ID	Register case
Brief description	Police department can register a new case with possible details.
Primary actors	Police Department
Precondition	The actors should be logged in.
Post condition	Actors can view case details of the case they registered.

Main success Scenario	The case is registered in the System Database.
Actor Action	**System Response**
1. Select the register action and submit.	The System will ask for the details that the user needs to add.
2. Enter the details and submit	The system shows a successful message and asks for other details that the user needs to add or Submit.
3. Enter Submit and submit	The system shows a successful message and data is added to the database.
Alternate flow	
	1. If any unsupported data is entered then the system will display an error message and let the user reenter data.

- **MANAGE CASE DETAILS**

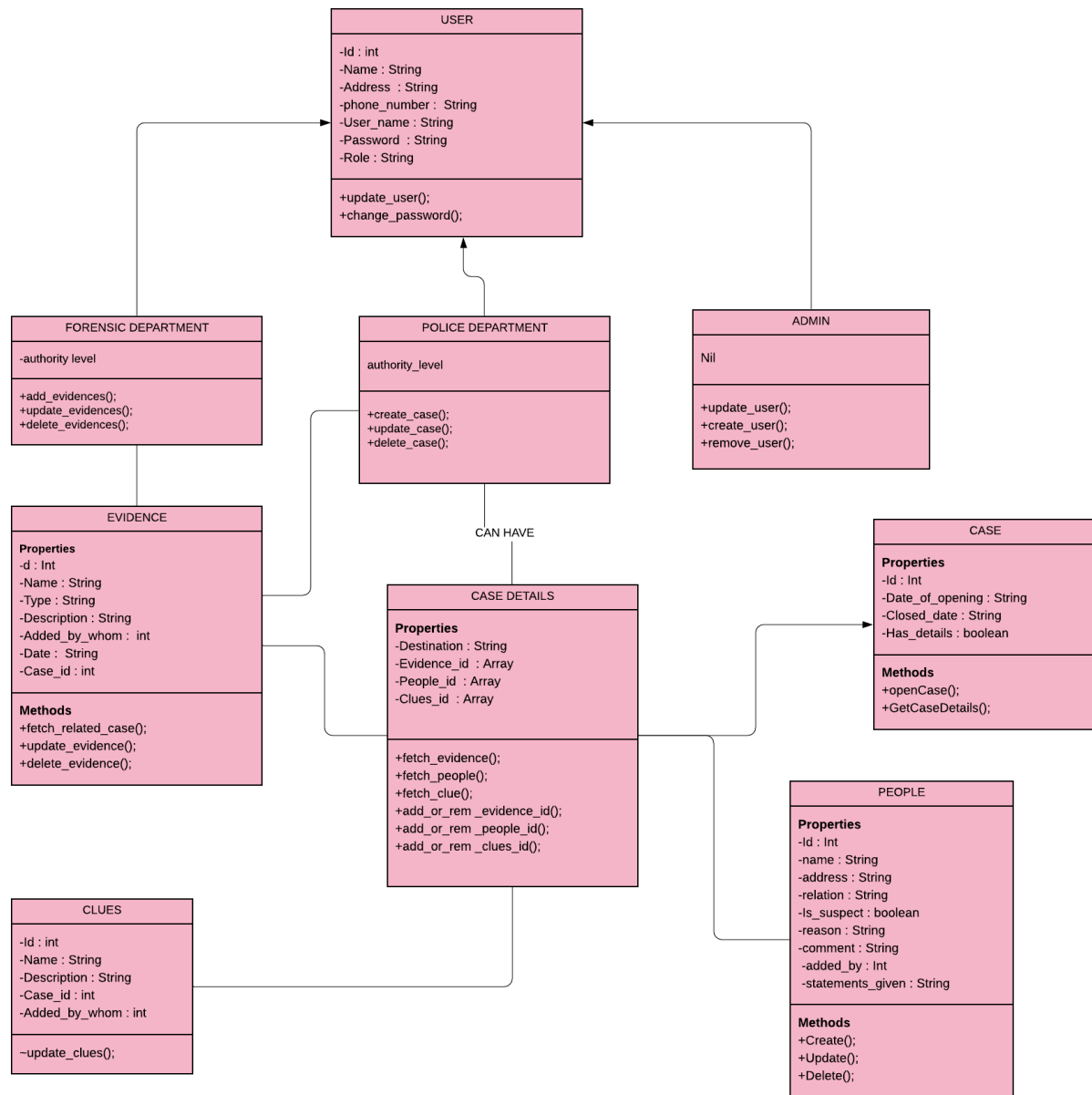| Use case ID	Manage case Details
Brief description	Actors can update and view all case details.
Primary actors	Police Department
Precondition	The actors should be logged in and should select the manage option.
Post condition	The case details get updated by the actors.
Main success Scenario	System displays a successfully updated message.
Actor Action	**System Response**

1. Enter the id of the case which he/she wants to update.	Show the case details and ask for the action.
2. Enter action.	If the entered action is to update, It asks for details that are to be updated.
3. Enters updated detail.	Shows a successful message and asks to update other details or to submit.
Alternate flow	
	1. If any unsupported data is entered then the system will display an error message and let the user reenter data.

- **MANAGE EVIDENCES**

Use case ID	Evidence
Brief description	Actors can view, store and update the necessary evidence needed in the Crime Solving.
Primary actors	Police Department Forensic Department
Precondition	The user must log in to the system.
Post condition	The user gets access to the Evidences and Lab reports, and is allowed to create, edit and view lab reports.
Main success Scenario	User is directed to the Lab Reports dashboard.
Actor Action	**System Response**
1. The actors can use the New Lab Reports form to store the Evidence of the New cases.	Get the menu where the actor can create New Lab Reports and store the necessary evidence collected and photographs related to the case.

2. The Actor can use Update to edit the lab reports.	Open the report for editing to add new findings and evidence related to the Case.
3. The Actor can use Search to search for report files.	Open a Search Menu where you can search for existing lab reports using Case ID as filter.
4. The Actor can use View to view previous Lab reports.	Gets the list of Reports to be selected for Viewing and opens the selected report.
Alternate flow	
	1. Shows error message if any failure is there while updating evidence due to technical error.

CLASS DIAGRAM

USER

-Id : int
-Name : String
-Address : String
-phone_number : String
-User_name : String
-Password : String
-Role : String

+update_user();
+change_password();

FORENSIC DEPARTMENT

-authority level

+add_evidences();
+update_evidences();
+delete_evidences();

POLICE DEPARTMENT

authority_level

+create_case();
+update_case();
+delete_case();

ADMIN

Nil

+update_user();
+create_user();
+remove_user();

EVIDENCE

Properties
-d : Int
-Name : String
-Type : String
-Description : String
-Added_by_whom : int
-Date : String
-Case_id : int

Methods
+fetch_related_case();
+update_evidence();
+delete_evidence();

CAN HAVE

CASE DETAILS

Properties
-Destination : String
-Evidence_id : Array
-People_id : Array
-Clues_id : Array

+fetch_evidence();
+fetch_people();
+fetch_clue();
+add_or_rem _evidence_id();
+add_or_rem _people_id();
+add_or_rem _clues_id();

CASE

Properties
-Id : Int
-Date_of_opening : String
-Closed_date : String
-Has_details : boolean

Methods
+openCase();
+GetCaseDetails();

PEOPLE

Properties
-Id : Int
-name : String
-address : String
-relation : String
-Is_suspect : boolean
-reason : String
-comment : String
-added_by : Int
-statements_given : String

Methods
+Create();
+Update();
+Delete();

CLUES

-Id : int
-Name : String
-Description : String
-Case_id : int
-Added_by_whom : int

~update_clues();

USER INPUT AND OUTPUT

1) Registration

Description:

To enter into this site user has to register himself first. Requirements of registration are first name, last name, user name, email-id, password, confirm password etc.

Input:

User Details

Output:

Filled Registration Details.

Processing:

User details are checked with the database. Password constraint is checked as per validation.

2) Login:

Description:

The System provides facility to login into the system.

Input :

Enter username and password

Output:

User Profile page

Processing:

The system will check the input of user and if valid then login is done.Otherwise user will be asked to re-enter the username and password.

3) Admin:

Description:

The Admin can add manager, manages the account management.

Input:

main cases, sub-case, manager.

Output:

Add successfully in database.

Processing:

The system will add selected data into database.

4) Police Department:

Description:

The Police Department can add the cases and manage those case details.

Input:

Register case, Case details.

Output:

Add successfully in database.

Processing:

The system will add selected data into database.

5) Forensic Department:

Description:

The Forensic Department will be managing the details of evidences.

Input:

Case evidences, Case details.

Output:

Add successfully in database.

Processing:

The system will add selected data into database.