Smart Internz Project Report

Crime Track - Online Crime Reporting System

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Submitted by

Names	Rollno
Kappala Hemasri	21AK1A0556
Maale Ravindra	21AK1A05J4
V. Uday Kiran	21AK1A05H1
Kasa Subhash	21AK1A05F5

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)

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ABSTRACT

The rate of crimes is increasing day by day in all societies across the world. “Online Crime Reporting System” using this website people who are afraid or don’t have enough time to go police station for complaint about their personal issues hereby they can give their complaint through online. The objective is to develop a web based application using which people can report the crime online. It provides the facility of uploading images or videos of crime scenes so that police can take action immediately. The system registers the complaint from people through online and it will also helpful to police department in catching criminals quickly. It also provides the public alerts. By this website public and police are both benefitted as its reduces the time and increases the chance of solving the case, which then reduces the crime rate. The aim of this project is to develop an online crime report and managing system which is easily accessible to the public and user friendly.
There are mainly three users in this system:
a) Admin
b) Police Station
c) User

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Chapter-1
Introduction

Crime is a part of illegal activities in human life. It is quite obvious that the rate of crimes is increasing day by day in all societies across the world, but we do believe that there is a lot which can be done by both the governments and the individuals to reduce the crimes in communities. The rise of population and complex society rises the range of anti-social conducts that must be restricted by the government through the military and different organizations particularly the Police Force. There are many current crime management systems which faces several difficulties, as there is no means to report crime instantly other than phone calls, messaging or face-to-face compliant filing. Hence, we have proposed an online crime reporting system which allows the user to file complaints or missing reports and keep a track of it. There are 3 categories that a user can file; Complaint, Crime Report and Missing Report and can see all the status of what action has been taken by the admin. To file any of the above 3 complaints, the user should register in to the system and provide his right credentials to file them. The crime reporting system project also allows other users who don't want to register but can check the crimes happening at his/her or any other area has to just provide the pin code and in return the system displays the list of crimes if any filed. The offline i.e. the unregistered user can also take advantage of checking the missing person details, but he/she is refrained from getting complaints done by the users. This system helps the users in tracking any report filed to the law and take an advantage of reporting any complaint from anywhere bringing the whole system online.

Victims and witnesses always give priority to their safety and privacy. This is one of the major concerns why victims are not reporting crimes as well as social status also do a great impact on victims. Since that, criminals live among the society without getting caught. Victims are afraid to stand against what happened to them because of data leaks to the outside world. That make more harm to the victim. If the victim went under sexual assault, they would not report the crime because that impacts their career, private life, and social status. Fake identities and false alerts mislead the police and ongoing investigations. Mostly this happens, and there is no way to

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confirm those reports true or false until investigation. Existing applications take some options to control these issues. But they are not effective. Because of these cases, real cases also had to wait in line too. Furthermore, police take time to investigate or respond to reported crime or clues, that is discourage public to report crimes to the police. When a victim reports a crime, they look for favorability from the police. But when the police took time to respond, they get disappointed. This can be happened due to reporting many crimes, but the problem is that it discourages the victims. So, through a crime reporting system, they expect effective and efficient actions to their cases.

Victims have different aspects, it`s all about their choice to report or not about the incident, but until they are not reporting a crime, there is no way to capture the criminals or suspects. To increase getting number of reports, existing systems should be the favorable system for the victim to report

The Crime Reporting System applies to Police Stations all across the country and specifically looks into the subject crime prevention, detection, conviction of criminals depending on a highly responsive backbone of Information Management. The efficiency of the Police and the effectiveness with which it tackles crime depend on what quality of information it can derive from its existing records and how fast it can have access to it.

The main purpose of the system is to manage criminal details in a centralized database and provide solution for public to give complaint through online. This project provides lot of features to manage all the data in well manner. The system has been developed to override the problems prevailing in the manual system. The project is supported to eliminate and reduce the hardships - faced by the existing system

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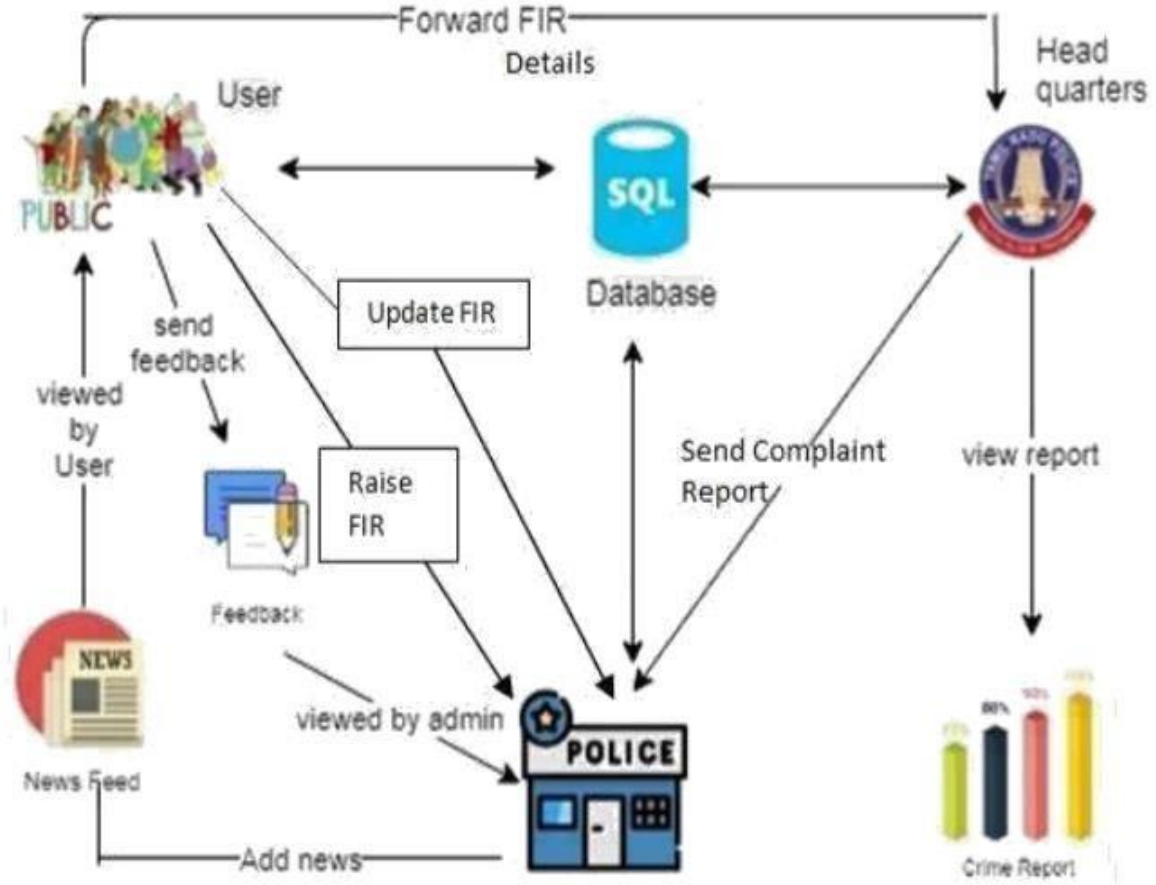
The below diagram will illustrate the whole online crime reporting system:



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The project titled as **"Online Crime File Management"** is a web based application. This software provides facility for reporting online crimes, complaints, missing persons, show most wanted person. Any Number of clients can connect to the server. Each user first makes their login to sever to show their availability. The server can be any Web Server.
The main modules in this project are:

Modules

- Visitors
- Registered Users
- Administrator

The visitor module includes:

➢ View Hot news: This module help the visitor to see the latest hot news which can updated by the admin.

The registered user module includes:

➢ Add Complaint: This module help the user to report online complaints.
➢ Add Crime report: This module help the user to report online crimes.
➢ Add Missing person: This module help the user to report online missing persons details also we have to add photos of missing person using heterogeneous database.
➢ View Missing persons: This module help the user to view all the missing person details.
➢ View Most wanted persons: This module help the user to view all most wanted persons which can be given by the administrator.
➢ Edit Complaint: This module help the user to edit his complaint details.
➢ Edit Account: This module help the user to update his or her profile.
➢ View complaint status: This module allows us to view the status of all complaint that you have posted earlier.

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➢ View crime status: This module allows us to view the status of the all crimes that you have posted earlier.

➢ Add and View feedback: This module helps the user to add and view feedbacks

The administrator module includes:

➢ View and reply user complaint: This module helps the admin to view and reply user's complaint details

➢ View and reply user crimes: This module helps the admin to view and reply user's crimes details

➢ New admin: This module used for add new admin

➢ Add and delete latest hot news: This module helps the admin to add and delete latest hot news.

➢ View and delete user's feedback: This module helps the admin to add and delete user's feedback

➢ Add, delete and view most wanted persons: This module helps the admin to add, delete and view most wanted person details

➢ Add, delete and view missing persons: This module helps the admin to add, delete and view missing person details

➢ Add and view Criminal registration: This module helps the admin to add and view criminal registrations

➢ Add and view FIR: This module helps the admin to add and view Fir reports

➢ Add and view history sheet: This module helps the admin to add and view history reports

➢ View and delete all complaint reply: This module helps the admin to view and delete complaint reply.

➢ Add and view prisoner report: This module helps the admin to add and prisoner reports

➢ Change password: This module helps the admin to update his or her password.

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Company Overview

Excellence Technology is a Software and Web Development Company which provides technology solutions and professional software for clients worldwide. Excellence Technology focus on quality, innovations and leverage deep industry and functional expertise to help customers to transform their highest-value business processes.

Our in depth technical knowledge coupled with industry experience and the unique methodology enables us to successfully deliver the services to the clients worldwide. We are driven to attain our customer's highest satisfaction by providing business experts with underlying delivery expertise in Enterprise Technology, Methodologies and Implementations. Our core competencies are designed to effectively deliver results to our customers.

Excellence Technology Training Center provides premier instructor led IT training through a carefully balanced blend of hands on lab exercises and lecture. Training is conducted in the comfortable classrooms at our training facility and client locations. Experienced instructors make training productive and enjoyable. Customizable courses and computer lab offer additional options for your training needs. We also provide project guidance for all academic students which help them to build a successful portfolio and start their IT journey successfully.

Existing System

In the existing system only we can see the details of particular information about the police stations in our state, the existing system has more workload for the authorized person, but in the case of Proposed System, the user can registered in our site and send the crime report and complaint about a particular city or person.

Drawbacks of Existing System

- More man power.

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- Time consuming.

- Needs manual calculations.
- No direct role for the higher officials.
- Consumes large volume of pare work.
- Damage of machines due to lack of attention.

To avoid all these limitations and make the working more accurately the system needs to be computerized.

1. Proposed System

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work. The existing system has several disadvantages and many more difficulties to work well. The proposed system tries to eliminate or reduce these difficulties up to some extent. The proposed system will help the user to reduce the workload and mental conflict. The proposed system helps the user to work user friendly and he can easily do his jobs without time lagging.

Expected Advantages of Proposed System

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

- Ensure data accuracy's.
- Proper control of the higher officials.
- Reduce the damages of the machines.
- Minimize manual data entry.
- Minimum time needed for the various processing.
- Greater efficiency.
- Better service.
- User friendliness and interactive.

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- Minimum time required.

2. Existing System

In the existing crime reporting system, most of the operations are done manually like send complaints, taking actions against crimes, view status etc. So with the existing system if anybody wants to complaint against crimes he must do it through the police. If we are doing the system manually, so many minor errors will occur. Error detection in the previous entries made and data cross verification is another important function. These are done manually, and it would take time.

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Drawbacks of the existing system can be concluded as follows:

- The existing system is time consuming and not very user friendly.
- The FIR brought by a person hailing from a family beyond poverty, the existing system shows ignorance for the same
- The officer dealing with a particular case cannot take decision by himself even when he is having the first hand knowledge/information about the case and he can expect obstructions from higher authorities/officials.
- Even an efficient officer cannot/may not able to handle more than one case at a time.
- As we all know, a covered truth, Bribery plays an important role in the existing system.
- Many cases are pilled up in the corners, which are not proved, due to lack of commitment in the job.
- In most of the cases, the innocent are accused in the existing system.
- As per our jurisdiction, “Let thousand criminals escape-not a single innocent be punished ". As a result of this and other factors that influence investigation, such as bribery, the innocent becomes accused in several situations in the eyes of Justice.
- The existing system could provide only investigation and there is no Advocating, Counseling facilities etc. hence no contact or control or co-ordination on these cell.
- They criticized it for being inefficient, time consuming, poorly managed, disparate and lacking flexibility.
- Evaluation requires monitoring crime before, during and after the initiative.
- Facts other than these initiatives may also impact on crime levels which makes evaluation particularly difficult.
- Because of the amount of serious crime, lesser crime goes unchecked. Many crimes become regarded as antisocial activities.

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Modules of the Project

1. **Station module:**

   Each of the station must first register with the Software. For the registration part each station enter their details like station name, address, phone no, station in charge etc. and get a User Id from the Software. Once the prospective station registers with the software they can avail the existing records.

2. **Citizen module:**

   Each of the citizens, who has a complaint to register, must first register with the Software. For the registration part each person enter their details like name, address, phone no., E-Mail ID etc. and get a User Id & password from the Software. Once the registration is complete, the citizen can sign-in to the website & register their complaint.

3. **Crime module:**

   This module is used for entering all details about the crime. It contains the date and time, police station where it is recorded, place, Nature of Crime, Location of the Crime etc.

4. **Search module:**

   In this module we can search the crime in station wise, nature of crime.

5. **Administrators Module:**

   The module will be protected by user ID and password. Ordinary users of the software will not be permitted to enter into this area of the software. The module will be focusing on the maintenance like Master Data Maintenance, Removal of old and outdated data from the software etc.

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CHAPTER-2

LITERATURE REVIEW

Victims have different aspects, it`s all about their choice to report or not about the incident, but until they are not reporting a crime, there is no way to capture the criminals or suspects. To increase getting number of reports, existing systems should be the favourable system for the victim to report. The results from previous studies clearly show. In Dutch studies, declining, increasing, and stable trends were found, whereby the declining trend could be explained by a changed composition of the crimes. In an American study, an increasing willingness to report crimes was found, while British and Canadian studies showed a declining willingness to report crimes[2]. This study shows the way social behaviours change from country to country. It is about the community how strongly keeps trust in their local policing process and how those responsible departments and agencies work to restore justice.

And this victim's willingness can affect due to theirreligion, culture, region, and mental impact of the incident.

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Some religions say God will punish the criminals, and you must confess to god. Because of this kind of belief, victims are not reporting the crimes. As some cultures see, if someone is sexually assaulted, that brings shame to the family. So, victims are also trying to keep it to themselves. Because of that, crimes are not reporting. If the victim was a celebrity or rich person, they willing to report, but they afraid after reporting anyhow, if that incident will get to know the public, that can be an impact on their life.

When it comes to victim's will, they consider the privacy and safety of their lives. The media is always looking for hot news, and victims do not like to be in a hot spot in the news. So, they always look at the confidentiality of crimreporting systems. As a victim, I easy to talk about the incident to the family, friends, and relatives. Because they always are favorable for the victim. When victims arereporting an incident to the crime reporting system and through the police, they expect favorability as their family gives.Recent studies show that willingness is different basedon gender and age. Gender will do a significant impact on

victims' decisions to disclose the crime to the police. Theexpectation is those female victims will have a higher rate of reporting crimes than male victims. And age will determine whether a victim will report victimization to the police or not. Older victims will be more likely to report crimes to the police than younger victims (Boateng, 2018).

More likely victim's marital status, occupation, and income cause the victims' willingness; this study clearly

shows what causes people's decision-making process. Furthermore, reducing victims' willingness will make a gap between reported crimes to the police compared to happen cases. So, when making a crime reporting system

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need to concern about the victim's privacy from beginning to end of the process. Suppose the police have a badhistory of leaking data to the public. That also may cause victims' willingness to report crimes. As previous papers show [3], there is a high willingness in America because victims trust their police. And police are also improving their privacy to keep reported crimes securely.While it may take years for technology's place to be fully realized and regulated in law enforcement, there is no doubt it is changing the field of police work forever, and the world is watching. Issues of privacy, consent, and police brutality will pave the way for the future of these technologies, and how—or whether—police continue to take advantage of the latest innovations to solve crimes and keep the people safe[4]. Police must find a better way to handle people to keep them safer. They must prove with the latest technological involvement, and all the problems are going to be solved. Update their systems timely with the newest technology and assure the privacy of the data. Police must encourage society to use their crime reporting system to report crimes and the importance of reporting crime. By doing that, police can gain public trust again, and due to that, trusted people will report more crimes. Public need awareness of their neighborhoods. Everyone cares for the lives of children and their belovedones, so they should be aware of the current situations in the area. People help them in their lives by notifying them of the current situation of their neighborhoods. General Public and law enforcement agencies may use applications in many ways to keep the community aware of the current situations and to help them to live together by communicating and sharing information. This enhances the positive image in peoples mind that lead to reporting crimes to the police. Like that, positivity helps to encourage the community to keep reporting. In the end, both parties will get happy. Crime Stoppers, New Orleans has launched a new freemobile crime-fighting app for Android and iPhone platforms, called Tip Submit. The app was created by Tip Soft and Crime Reports and is known to be the first anonymous tip submission mobile software. By design, TipSubmit allows citizens to submit crime tips to Crime stoppers securely and anonymously. The system identifietipsters by their tip number only, which it assigns to the tip[5]. This system properly shows how important they concern about the person who gives a tip. Every tip is very important to catch criminals. Because of being anonymous, people do not have to worry about their safety becauseeither police also don`t know who gave a tip. So, if the information leak to a third party, it does not affect the person who gives a tip. This is big protection to witness orvictim. But as a Police force, they must be careful while they are handling the tips because that tip can be a prank ospam to mislead the police. So, in such a system, there is good security to a person who gives tips. But on the police side, they have a problem with the reliability of the information they get. These systems encourage society to keep reporting about crimes, but as a law enforcement unit, they are having an issue with the effectiveness of the information they received, so they must handle them carefully. If police received multiple tips about the same scenario, there is a good possibility of the tip can be true.Anyhow through this application, people will get motivated to report crimes.With time every crime reporting system needs to beupdated or change the system. That do a positive impact onpeople, as earlier Canadian studies showed a decliningwillingness to report crimes [6] makes communities unsafe, and it gets harder to do policing in the area for law enforcement units. So, they apply a different system to encourage people to report crimes. And to involve them inpolicing is a good trick to get more crime reporters rather than not reporting. Every country must protect its citizensfrom doing that, and they must take some precautionsA recent mobile application named Mobile Vic PD wasreleased by the Victoria police in Canada for fighting crime.The mobile application can be used to report minor crimesoffer anonymous tips to police, stay updated on crimes inprogress, receive missing child reports or check on stolenproperty. As the criminal data is not available remotely,there is a communication gap between the police officialsinvestigating any case. The

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disadvantage of this applicationwas that it was prone to fake reporting of crime, and there was no other way to verify that the incident was true [7].

This application was able to achieve the goal, which is Canadian law enforcement units expected. To change public willingness to report crimes. As previously discussed, application this application also anonymously crime reporting to police, but these applications are not to use for emergency purposes. They are used to help law enforcement units keep the area safer. Not contacted for emergencies or to report a serious crime. These applications were able to encourage the public to stay vigilant and helping the law enforcement units to police, raiding, and help for ongoing investigations. These reporting details are stored in the database. After an officer confirms the details or tips, they got. They dispatch that information to the relevant parties.

If these applications able to confirm the information right after they are reported value of the information will be high, and it will help to increase the efficiency of the crime reporting systems effectively. Many countries use systems to capture the crimes, following table summarized crime-fighting applications. This paper show use of applications [8]; each of every application gives different features to the victims and witness anyhow their last goal is to help law enforcement units to keep safer the area. As an impact of that, people try to use more of this kind of application to assure their safety.

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Table 1 Popular Crime-fighting Applications

Application	Advantages	Platform
Submit tip	• Allows Anonymous tips • Track's location of uploads	Android/iOS
WebCast	• Associate crimes with places were. they occur	Web-based
Mobile Vic PD	• Allow Anonym ous tips • Allows updates of crime in progress	iOS
Account	• Verification of informatio n in the field	iOS
Copy link	• Quick situational awareness and geospatial searches	Android/iOS
IPOL Mobile	• Latest crime • Awareness • Vehicle-ownership • checks	iOS

The common thing is most of the applications give a chance to report anonymously. People love to be anonymous and provide the data because that protects their identity, so they do not have to worry about their safety. Some applications use a good method to confirm the information. By verifying the information using the public as an example, if they receive an anonymous tip about the ongoing robbery, they notify the nearest tipsters around the situation. So those tipsters also can inform anonymously is true or false, using the application so, it is an effective method to respond to the situation quickly as possible. Every application uses different methods to gather information. Mostly these data store in cloud storage.

Security of those methods is high, and quickly can retrieve the data. Many Asian countries still use file base manual systems. These are not effective when compared to these applications. These existing applications can prove that people always like stay anonymous and report crimes.

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This literature review used articles, journals, and papers. Previous crime reporting relevant studies used for this paper by reading. Those read data gathered, analyzed, and edited to input them to this research. And used previously done surveys by the other researchers. Because of the pandemic situation, it is not easy to gather primary data; because of that, this paper used secondary data for its work. All gathered data from the publications. Many of them got through the research gate web application. And all of those gathered data sort into specific order to keep the flow of the research to make interest, important and understandable for readers. All the sorted data order to the importance of the data to analyzed and remove some not relevant to the research in the publications.

When selecting the information must consider the trustworthiness and how effective that information to your research. This will help to enhance the productivity of the research. This research is based on review research papers, so you must think about the quality of the information you gather and how to involve those to create effective research. When making this research, I have thought about those things and sort data to order, and include them in the research which has been done to improve its importance and productivity to readers. Existing application tables also add to the research to compare the features they give. So, the readers could have a chance to get a clear idea picture about the applications. To paper is written to discuss the importance and impact of the crime reporting systems to the readers and people who interest in the relevant topic.

Canada, the app called “Mobile Vic PD” able to prove that because there are studies shows that people do not feel willing to report crimes. [9] [10]. After this application is launched, willingness is changed. This research shows people's attitudes towards the existing system and technology-based systems. There is a survey in that paper that proves society willing to report crimes on technology base systems rather than a traditional system [11]. If the system provides anonymity so, people willing to report police. Even if it`s about police brutality, a personyou cannot go to the police and file a crime against police mostly it will not be inquired. But In an application that proved security, people do not hesitate to report incidents. Police also know if they did not inquire, it would lead to amess. Now clearly can see without these kinds of systems, police also cannot control all the matters alone. But if these systems exist, police also getting in trouble if they broke the law. In southeast Asian country law enforcement use a manual method to report a crime. Mostly use a bookto write down. But if the book is loose or someone tears the page in the book. Relevant inquiries will and crime reports will disappear. Because of that, the victim wildiscourage from reporting crimes to the police. That can lead criminals to live safely as innocents among the society, public and police relationship will fail, the number of crime case reports will decrease compared to real criminal cases. And more often public will lost the willingness to report crimes. When police confirm the tips from the tipster, they must encourage them to report more crimes until the public and police keep their relationships closer. The area that lives will become safer for all. Not only tips. Crime reports also do a great impact because a proper investigation can catch criminals easier.Technologies[12] do a great job for modern-day policing the area [13]. In the survey, the majority ask for online systems because they believe this is the best way to inform law enforcement units about the crimes and to give tips about the crimes. In the existing file base crime reporting processes, people must stay for a long period to do complete the process. When it comes to the online system, they do not have to waste their time. Quickly they can respond. Violating traffic rules is a crime that no one reports to the police unless an accident.

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Traffic rules violation hasbecome very frequent nowadays, and it is not possible to catch all such violations manually by the traffic police. Hence various researchers and scientists have tried to KN Jayasinghe & MPL Perera / IJCTT, 69(5), 1-5, 2021 4devise automated traffic rule violation detection systemsto tackle the problem [14]. Police use CCTV and speedometers to catch the people who break the law. In western countries, law enforcement units stay undercover until someone breaks the traffic laws and arrest them. But using a single app also can do the same. If these crimereporting systems able to report traffic violations, that will be a great relief for police and other law enforcement units Due to the rise of traffic violations, rules violations due to traffic and corruption problems, and many other issues are created. Until all system works manually, and no one is going to receive the fine automatically. Because of that,gets increases. If the system is automated fine will be automatically added to the person who breaks the law. Corruption also gets reduced over time. Because it isnot easy to cheat, these kinds of systems will help to reduce traffic problems and minimize traffic rules violations.Many existing crime reporting applications are not designed to report road traffic violations. But this is an important part that every application must include. In SriLanka, we see many traffic rule violations. Urban areas like Colombo three-wheelers mostly violate traffic rules. Sometimes those actions lead to traffic jams. So, if the existing applications could add that feature, that will be a great help for the drivers, Law enforcement, and Especially pedestriansRoad traffic accident in India is increasing despite recent legislative amendments, awareness programs and enforcement of traffic rules. Road users' behavior is the primary reason for accidents in 70%- 95% of cases.DK clearly shows many accidents took place because of traffic rule violations. These violations can be minimized if the law enforcement units introduce a system to give tips on report about traffic rule violations [15]. As fear of being punished, bad drivers will try being disciplined and respect the rules, and on the other hand, it is some help to identify the rule breaks and punish them. That encourages the public to support the police and law enforcement. If the
system helps to protect the witness's identity anonymously, witnesses do not have to worry about safetyThat encourages them to report more often. Now you seethe importance of these applications. Many counties launcapplications to report crimes. But people have no faith inthose applications is one reason they failed. Some applications only provide limited options to do in the application. Because of that, people get bored with those applications, and that affects people's willingness to report crimes. When law enforcement expects help from the public, they must provide security to save those people by giving good privacy and protections if these applicationscan reward people for successful tips like level up in the applications. What motivates them to report more crimes. That is a positive impact that law enforcement is also expecting by launching these applications. These applications help to decrease the crime ratebecause using tips, law enforcement catching the criminals, so no criminals to do more harm to society, and it is demotivating the people who plan to do crimes. Not only that crime reports, or tips help for the ongoing investigations too. When published details about wanted people. The public can provide tips or details about them. When we look at the most popular applications [16], they build for iOS and Android. Because today everyone uses mobile phones and that is a part of their life. So, it is easy to inform your law enforcement through the mobile phone since application on it whenever a person becomes a witness or victim related to any situation like road traffic violations, accidents, robbery, stabbing, murdering, rape case, bullying, or something related to that. Can quickly inform the police using the application. As a person, it is everyone`s responsibility to protect your community unless that person might be the next victim. When it comes to effectiveness and efficiency, it is different from application to application, but commonly these applications much better and efficient than traditional manual systems. As law enforcement, they have more crime reports to

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solve that earlier, commonly after launching these applications in their countries, this happened. No matter how good the system is launched. It is all matter of willingness to report crimes. People will report crimes if the system provides all necessary privacy and data protective measures. That able to protect victim and witnesses. As law enforcement concern is about the information, they receive if the system able to prove the reliability of the information that is received, the system will be effective the law enforcement productivity. In the
end, every party's expectation is to make a safer area to live in and caught every criminal who lives in the society. That was the main goal to achieve. To achieve it public,law enforcement, victims, and witnesses must work together and must keep a closer relationship between them. These kinds of crime reporting systems help to do that. Technology helps to keep all safer. The impact of thesesystems is very high. It helps to give good quality of life and give a chance to live without being afraid of anyone. Family, kids, females, elder people all can live safely and happily because of these systems. Those who plan to do crimes get fear to do crimes. Because they know these systems are existed to caught them. And it is not easy to stay safe after doing a crime. So eventually crime-free society will be created for all.

CHAPTER 3
PROBLEM DEFINITION AND OBJECTIVES

Software Requirements:

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The software requirements include the software that is required for working. Software requirements are as follows:

Developments Tools

- Python
- Django

Database

- Django ORM

Operating System

- Windows 7 or higher

Hardware requirements:

The hardware for the project should be selected in such a way that it should give the maximum optimal result. Hardware requirements are as follows:

- Processor: Intel Pentium (II) or higher
- 128 MB RAM
- 2 GB Hard Disk or more
- SVGA Color Monitor
- Keyboard
- Mouse

System Development Process

System analysis

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System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action.

A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is loop that ends as soon as the user is satisfied with proposal.

Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various

feasibility studies. In these studies a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken.

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Here in the Email to Fax server project, a detailed study of existing system is carried along with all the steps in system analysis. An idea for creating a better project was carried and the next steps were followed.

FEASIBILITY STUDY

Feasibility study is made to see if the project on completion will serve the purpose of the organization for the amount of work, effort and the time that spend on it. Feasibility study lets the developer foresee the future of the project and the usefulness. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability to meet their user needs and effective use of resources. Thus when a new application is proposed it normally goes through a feasibility study before it is approved for development.

The document provide the feasibility of the project that is being designed and lists various areas that were considered very carefully during the feasibility study of this project such as Technical, Economic and Operational feasibilities.

The following are its features:

TECHNICAL FEASIBILITY

The system must be evaluated from the technical point of view first. The assessment of this feasibility must be based on an outline design of the system requirement in the terms of input, output, programs and procedures. Having identified an outline system, the investigation must go on to suggest the type of equipment, required method developing the system, of running the system once it has been designed.

Technical issues raised during the investigation are:

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- Does the existing technology sufficient for the suggested one?
- Can the system expand if developed?

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The project should be developed such that the necessary functions and performance are achieved within the constraints. The project is developed within latest technology. Through the technology may become obsolete after some period of time, due to the fact that never version of same software supports older versions, the system may still be used. So there are minimal constraints involved with this project. The system has been developed using Java the project is technically feasible for development.

- **ECONOMIC FEASIBILITY**

The developing system must be justified by cost and benefit. Criteria to ensure that effort is concentrated on project, which will give best, return at the earliest. One of the factors, which affect the development of a new system, is the cost it would require.

The following are some of the important financial questions asked during preliminary investigation:

- ➢ The costs conduct a full system investigation.
- ➢ The cost of the hardware and software.
- ➢ The benefits in the form of reduced costs or fewer costly errors.

  Since the system is developed as part of project work, there is no manual cost to spend for the proposed system. Also all the resources are already available, it give an indication of the system is economically possible for development.

- **BEHAVIORAL FEASIBILITY**

  This includes the following questions:

- ➢ Is there sufficient support for the users?
- ➢ Will the proposed system cause harm?
- ➢ The project would be beneficial because it satisfies the objectives when developed and installed

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CHAPTER 4

DESIGN AND IMPLEMENTATION

Design

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Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is the key to effective system. The term "design" is defined as "the process of applying various techniques and principles for the purpose of defining a process or a system in sufficient detail to permit its physical realization". It may be defined as a process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm that is used. The system design develops the architectural detail required to build a system or product. As in the case of any systematic approach, this software too has undergone the best possible design phase fine tuning all efficiency, performance and accuracy levels. The design phase is a transition from a user oriented document to a document to the programmers or database personnel. System design goes through two phases of development: Logical and Physical Design.

1. LOGICAL DESIGN:

The logical flow of a system and define the boundaries of a system. It includes the following steps:

- Reviews the current physical system – its data flows, file content, volumes, Frequencies etc.
- Prepares output specifications– that is, determines the format, content and Frequency of reports.
- Prepares input specifications– format, content and most of the input functions.
- Prepares edit, security and control specifications.
- Specifies the implementation plan.
- Prepares a logical design walk through of the information flow, output, input, Controls and implementation plan.
- Reviews benefits, costs, target dates and system constraints.

2. PHYSICAL DESIGN:

Physical system produces the working systems by define the design specifications that tell the programmers exactly what the candidate system must do. It includes the following steps

- Design the physical system.
- Specify input and output media.
- Design the database and specify backup procedures.

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- Design physical information flow through the system and a physical design.
- Plan system implementation.
- Prepare a conversion schedule and target date.
- Determine training procedures, courses and timetable.
- Devise a test and implementation plan and specify any new hardware/software.
- Update benefits , costs , conversion date and system constraints

Design/Specification activities:

- Concept formulation.
- Problem understanding.
- High level requirements proposals.
- Feasibility study.
- Requirements engineering.
- Architectural design.

MODULE DESIGN

- ✓ Visitors
- ✓ Registered Users
- ✓ Administrator

- **INPUT DESIGN**

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or

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printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- ✓ What data should be given as input?
- ✓ How the data should be arranged or coded?
- ✓ The dialog to guide the operating personnel in providing input.
- ✓ Methods for preparing input validations and steps to follow when error occur.

OBJECTIVES OF INPUT DESIGN

- ➢ Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

- ➢ It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

- ➢ When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow.

OUTPUT DESIGN

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through

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outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

♦ Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

♦ Select methods for presenting information.

✓ Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of the following objectives.

- Convey information about past activities, current status or projections of the future.
- Signal important events, opportunities, problems, or warnings.
- Trigger an action / Confirm an action.

Code Details

The purpose of code is to facilitate the identification, retrieval of the items and information. A code is an oriented collection of symbols design to provide unique identification of an entry or attribute. Code is built with manually exclusive features. Codes in all cases specify object which are physical or on performance characteristics. They are used to give optimal distraction and other information. Codes are used for identifying, accessing, storing and matching records. The codes insure that only one value of the code with a single meaning is correctly applied to give entity or attribute as described in various ways. Code can also be design in a manner easily understood and applied by the user.

Coding Standard

The standard used in the development of the system is Microsoft Programming standards. It includes naming conversions of variables, constants and objects, standardized formats or labelling and commenting code, spacing, formatting and indenting.

Naming Convention

Classes' names and interface names will start with capital letter. The function names will start with small letters and th e first letter of each word in the function name will be in capital letter.

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Labels and Comments

Sufficient labels and comments are included in the description of it for the benefits if the developer and other programmers who might examine it later.

User Interface

- For all the entry screen frames are used which will show the type of the user who is currently logged in and the menus.
- Standard actions are used for standard actions.
- Same font is related properties are used for similar screens.

The method of implementation and the time scale to be adopted are found out initially. Next the system is tested properly and the users are trained in the new procedures.

Implementation of Project

Implementation is the stage of the project where the theoretical design is turned into a working system. It can be considered to be the most crucial stage in achieving a successful new system gaining the users confidence that the new system will work and will be effective and accurate. It is primarily concerned with user training and documentation. Conversion usually takes place about the same time the user is being trained or later. Implementation simply means convening a new system design into operation, which is the process of converting a new revised system design into an operational one.

Implementation is the stage of the project where the theoretical design is tuned into a working system. At this stage the main work load, the greatest upheaval and the major impact on the existing system shifts to the user department. If the implementation is not carefully planned and controlled it can create chaos and confusion.

Implementation includes all those activities that take place to convert from the existing system to the new system. The new system may be a totally new, replacing an existing manual or automated system or it may be a modification to an existing system. Proper implementation is essential to provide a reliable

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system to meet organization requirements. The process of putting the developed system in actual use is called system implementation. This includes all those activities that take place to convert from the old system to the new system. The system can be implemented only after through testing is done and if it is found to be working according to the specifications. The system personnel check the feasibility of the system. The more complex the system being implemented, the more involved will be the system analysis and design effort required to implement the three main aspects: education and training, system testing and changeover.

The implementation state involves the following tasks:

- Careful planning.
- Investigation of system and constraints.
- Design of methods to achieve the changeover.
- Training of the staff in the changeover phase.

Implementation Procedures

Implementation of software refers to the final installation of the package in its real environment, to the satisfaction of the intended uses and the operation of the system. In many organizations someone who will not be operating it, will commission the software development project. In the initial stage people doubt about the software but we have to ensure that the resistance does not build up, as one has to make sure that

- The active user must be aware of the benefits of using the new system.
- Their confidence in the software is built up.
- Proper guidance is imparted to the user so that he is comfortable in using the application.
- Before going ahead and viewing the system, the user must know that for viewing the result, the server program should be running in the server. If the server object is not up running on the server, the actual process won't take place.

Training /User Training

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User training is designed to prepare the user for testing and converting the system. To achieve the objective and benefits expected from computer based system, it is essential for the people who will be involved to be confident of their role in the new system. As system becomes more complex, the need for training is more important. By user training the user comes to know how to enter data, respond to error messages, interrogate the database and call up routine that will produce reports and perform other necessary functions.

Training on the Application Software

After providing the necessary basic training on computer awareness the user will have to be trained on the new application software. This will give the underlying philosophy of the use of the new system such as the screen flow, screen design type of help on the screen, type of errors while entering the data, the corresponding validation check at each entry and the ways to correct the date entered. It should then cover information needed by the specific user/ group to use the system or part of the system while imparting the training of the program on the application. This training may be different across different user groups and across different levels of hierarchy.

Operational Document

Once the implementation plan is decided, it is essential that the user of the system is made familiar and comfortable with the environment. Education involves right atmosphere and motivating the user. A documentation providing the whole operations of the system is being developed in such a way that the user can work with it in well consistent way. The system is developed user friendly so that the user can work the system from the tips given in the application itself. Useful tip and guidance is given inside the application itself to help the user. Users have to be made aware that what can be achieved with the new system and how it increases the performance of the system. The user of the system should be given a general idea of the system before he uses the system.

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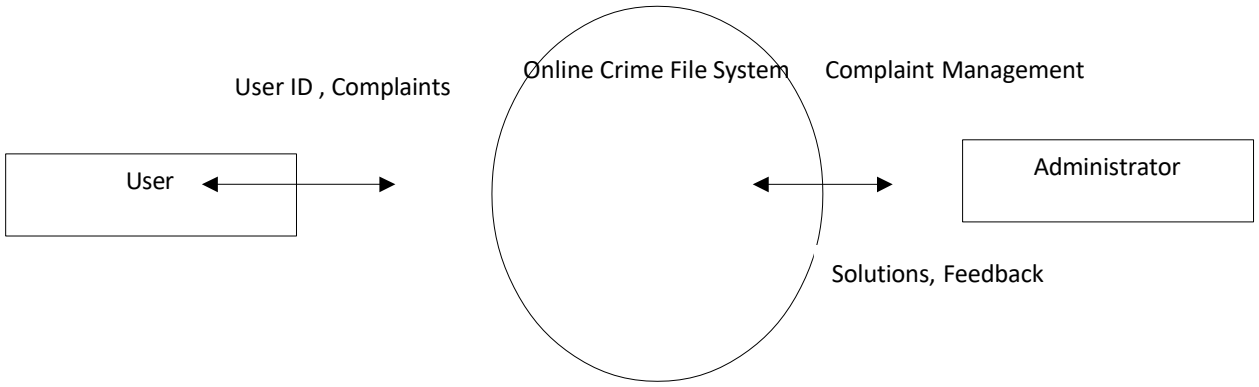
System Maintenance

Maintenance is the enigma of system development. The maintenance phase of the software cycle is the time in which a software product performs useful work. After a system is successfully implemented, it should be maintained in a proper manner. System maintenance is an important aspect in the software development life cycle. The need for system maintenance is for it to make adaptable to the changes in the system environment. Software maintenance is of course, far more than "Finding Mistakes". Maintenance may be defined by describing four activities that are undertaken after a program is released for use.

Data Flow Diagram

CONTENT FLOW DIAGRAM



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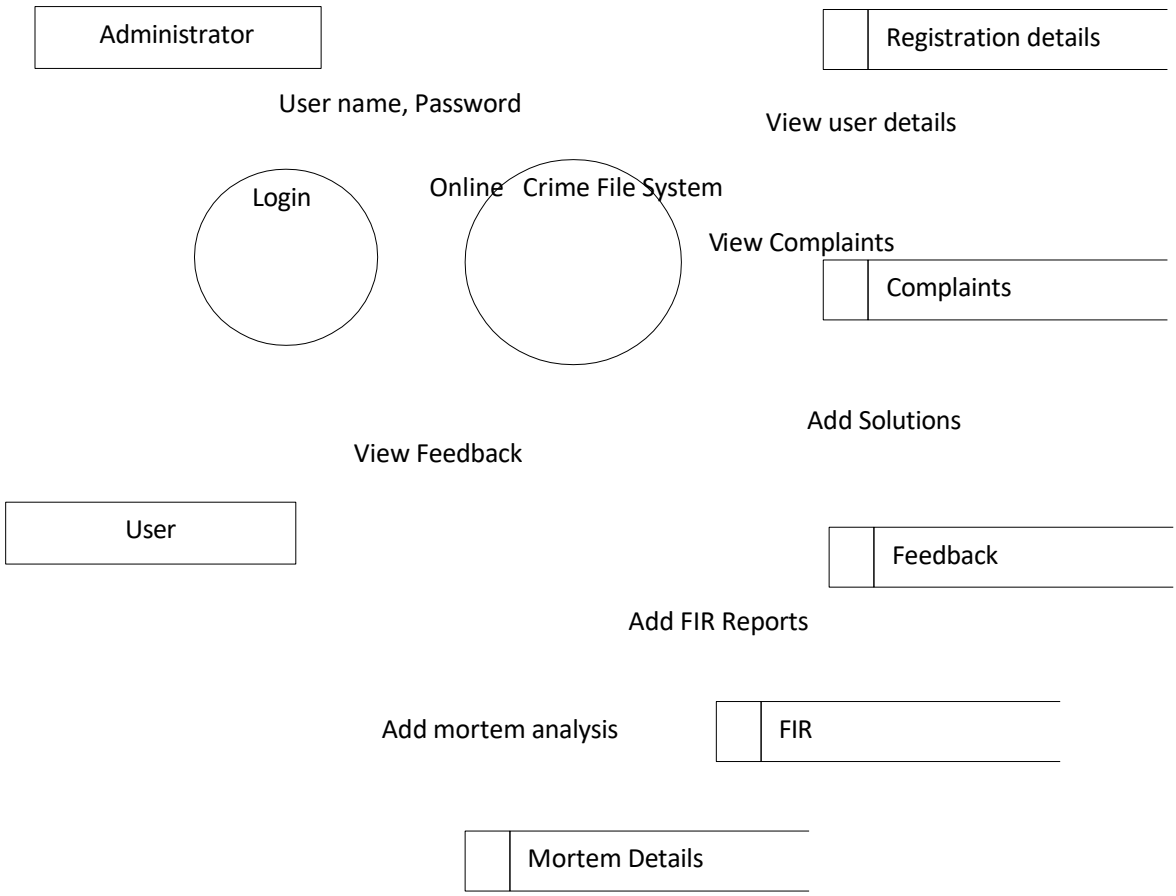
LEVEL 1 DFD ADMINISTRATOR



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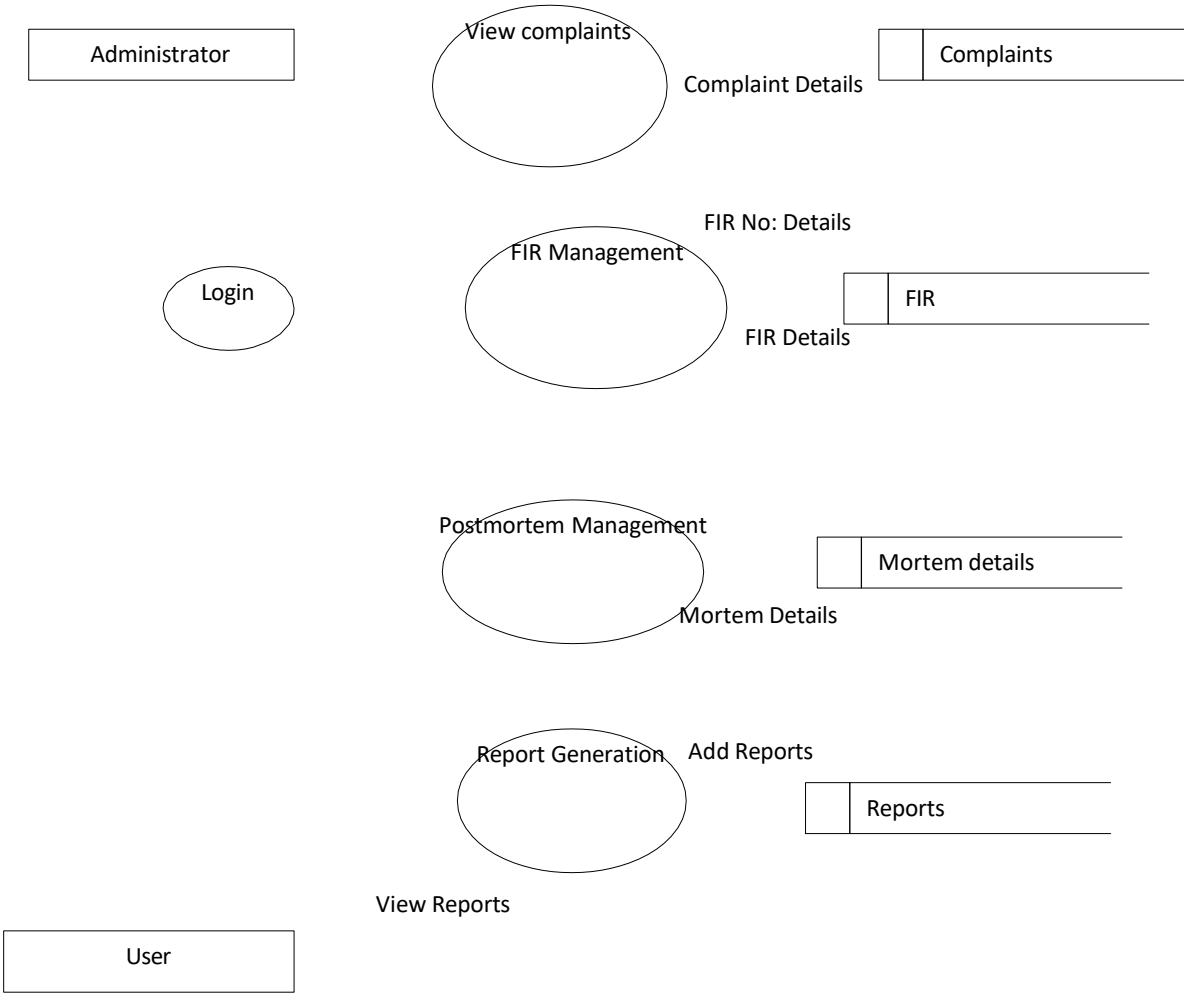
LEVEL 2 DFD ADMINISTRATOR



LEVEL 1 DFD- USER

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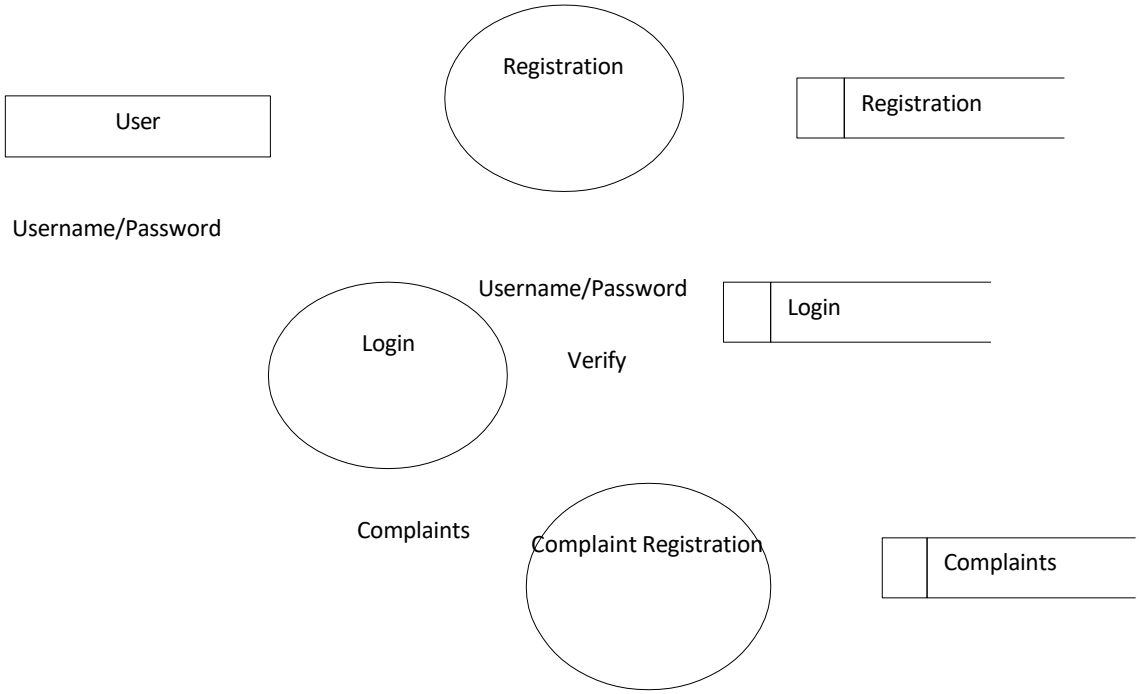
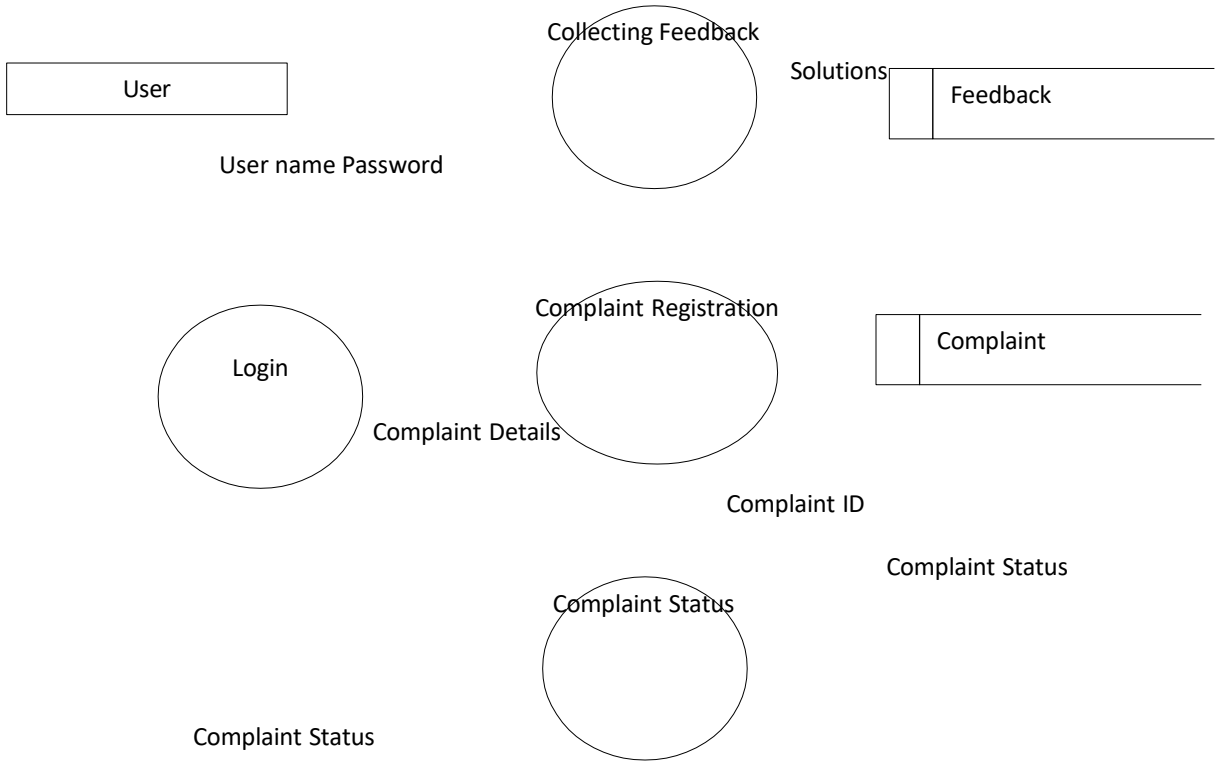


VEL 2 DFD- USER



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DATABASE DESIGN

A database is an organized mechanism that has the capability of storing information through which a user can retrieve stored information in an effective and efficient manner. The data is the purpose of any database and must be protected.

The database design is a two level process. In the first step, user requirements are gathered together and a database is designed which will meet these requirements as clearly as possible. This step is called Information Level Design and it is taken independent of any individual DBMS.

In the second step, this Information level design is transferred into a design for the specific DBMS that will be used to implement the system in question. This step is called Physical Level Design, concerned with the characteristics of the specific DBMS that will be used. A database design runs parallel with the system design. The organization of the data in the database is aimed to achieve the following two major objectives:

- Data Integrity
- Data independence

Normalization is the process of decomposing the attributes in an application, which results in a set of tables with very simple structure. The purpose of normalization is to make tables as simple as possible. Normalization is carried out in this system for the following reasons.

- To structure the data so that there is no repetition of data , this helps in saving.
- To permit simple retrieval of data in response to query and report request.
- To simplify the maintenance of the data through updates, insertions, deletions.
- To reduce the need to restructure or reorganize data which new application Requirements arise.

RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

A relational model represents the database as a collection of relations. Each relation resembles a table of values or file of records. In formal relational model terminology, a row is called a tuple, a column header is called an attribute and the table is called a relation. A relational database consists of a collection of tables, each of which is assigned a unique name. A row in a tale represents a set of related values.

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RELATIONS, DOMAINS & ATTRIBUTES:

A table is a relation. The rows in a table are called tuples. A tuple is an ordered set of n elements. Columns are referred to as attributes. Relationships have been set between every table in the database. This ensures both Referential and Entity Relationship Integrity. A domain D is a set of atomic values. A common method of specifying a domain is to specify a data type from which the data values forming the domain are drawn. It is also useful to specify a name for the domain to help in interpreting its values. Every value in a relation is atomic, that is not decomposable.

RELATIONSHIPS:

- Table relationships are established using Key. The two main keys of prime importance are Primary Key & Foreign Key. Entity Integrity and Referential Integrity Relationships can be established with these keys.
- Entity Integrity enforces that no Primary Key can have null values.
- Referential Integrity enforces that no Primary Key can have null values.
- Referential Integrity for each distinct Foreign Key value, there must exist a matching Primary Key value in the same domain. Other key are Super Key and Candidate Keys.
- Relationships have been set between every table in the database. This ensures both Referential and Entity Relationship Integrity.

NORMALIZATION:

As the name implies, it denoted putting things in the normal form. The application developer via normalization tries to achieve a sensible organization of data into proper tables and columns and where names can be easily correlated to the data by the user. Normalization eliminates repeating groups at data and thereby avoids data redundancy which proves to be a great burden on the computer resources. These includes:

- ✓ Normalize the data.
- ✓ Choose proper names for the tables and columns.
- ✓ Choose the proper name for the data.

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First Normal Form:

The First Normal Form states that the domain of an attribute must include only atomic values and that the value of any attribute in a tuple must be a single value from the domain of that attribute. In other words 1NF disallows "relations within relations" or "relations as attribute values within tuples". The only attribute values permitted by 1NF are single atomic or indivisible values.

The first step is to put the data into First Normal Form. This can be donor by moving data into separate tables where the data is of similar type in each table. Each table is given a Primary Key or Foreign Key as per requirement of the project. In this we form new relations for each nonatomic attribute or nested relation. This eliminated repeating groups of data.

A relation is said to be in first normal form if only if it satisfies the constraints that contain the primary key only.

Second Normal Form:

According to Second Normal Form, for relations where primary key contains multiple attributes, no non key attribute should be functionally dependent on a part of the primary key.

In this we decompose and setup a new relation for each partial key with its dependent attributes. Make sure to keep a relation with the original primary key and any attributes that are fully functionally dependent on it. This step helps in taking out data that is only dependent on a part of the key.

A relation is said to be in second normal form if and only if it satisfies all the first normal form conditions for the primary key and every non-primary key attributes of the relation is fully dependent on its primary key alone.

Third Normal Form:

According to Third Normal Form, Relation should not have a non key attribute functionally determined by another non key attribute or by a set of non key attributes. That is, there should be no transitive dependency on the primary key.

In this we decompose and set up relation that includes the non key attributes that functionally determines other non key attributes. This step is taken to get rid of anything that does not depend entirely on the Primary Key. A relation is said to be in third normal form if only if it is in second normal form and more over the non key attributes of the relation should not be depend on other non key attribute.

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Software and Hardware Specifications

Hardware Specification

Processor	:	Pentium III/AMD Athlone XP
RAM	:	128 MB
Hard disk	:	20 GB
FDD	:	1.44MB
Monitor	:	14 inch
Mouse	:	3 Button scroll
CD Drive	:	52 X
Keyboard	:	108 keys

Software Specification

Operating System	:	Windows 2007
Languages	:	Python
Front End	:	HTML
Platform	:	J2EE
Web Servers	:	Web Logic8.1/Tomcat 5.0
Backend	:	Django
Browser Program	:	Internet explorer/Mozilla Fireworks

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CHAPTER 5

RESULTS AND DISCUSSIONS

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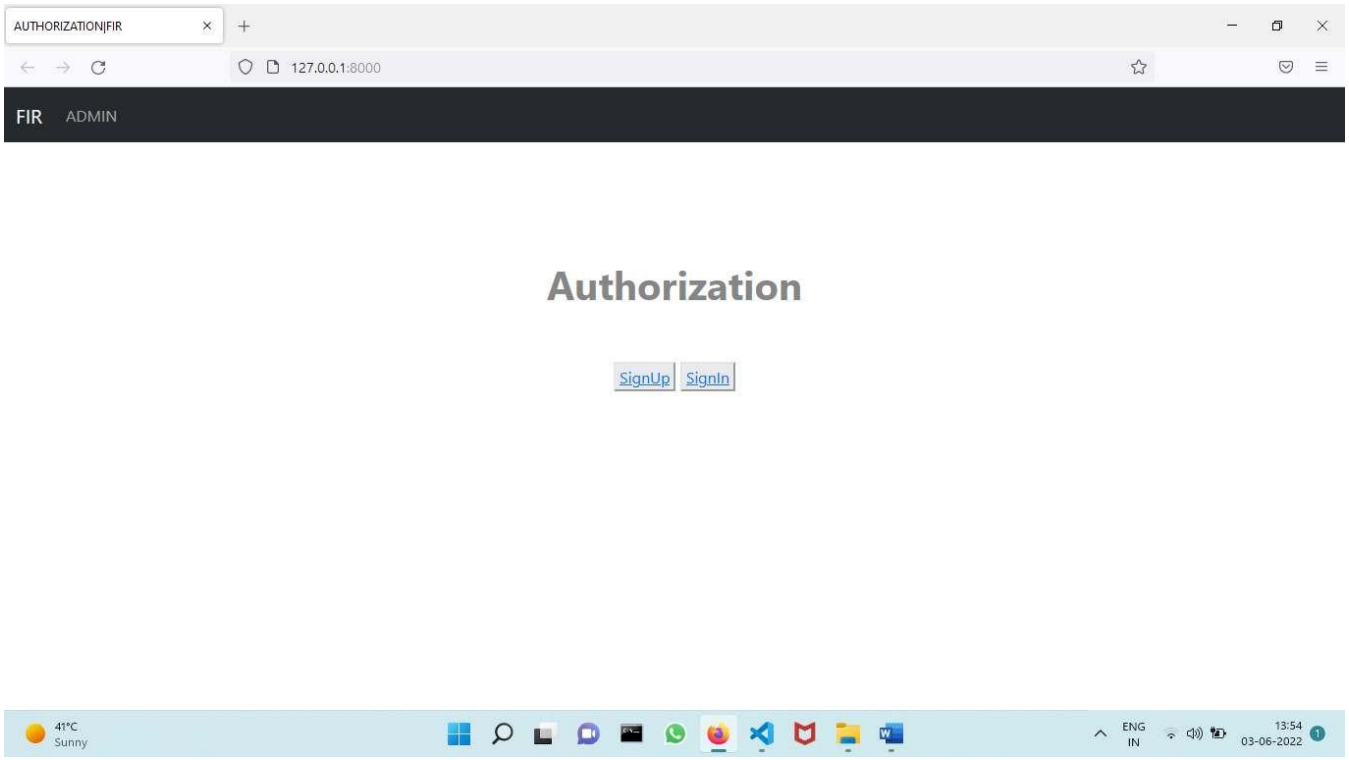

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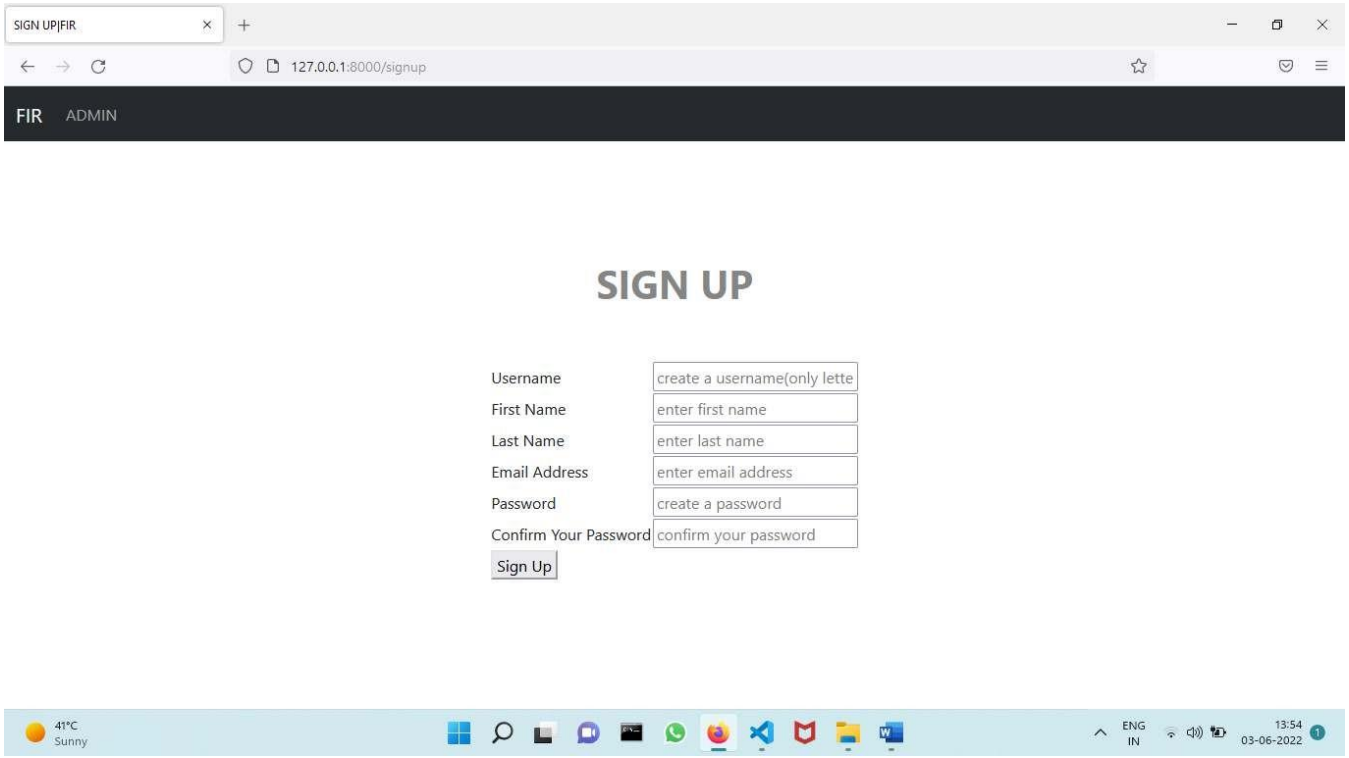

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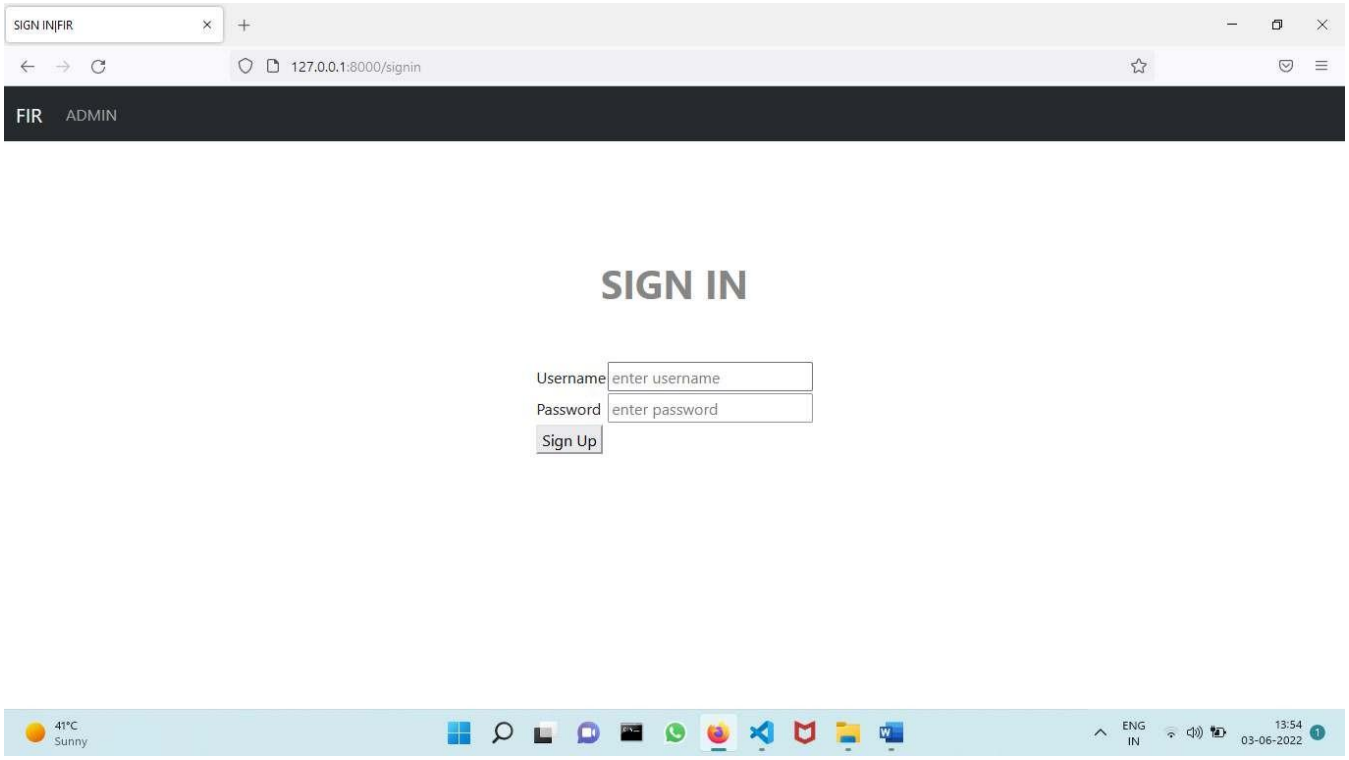

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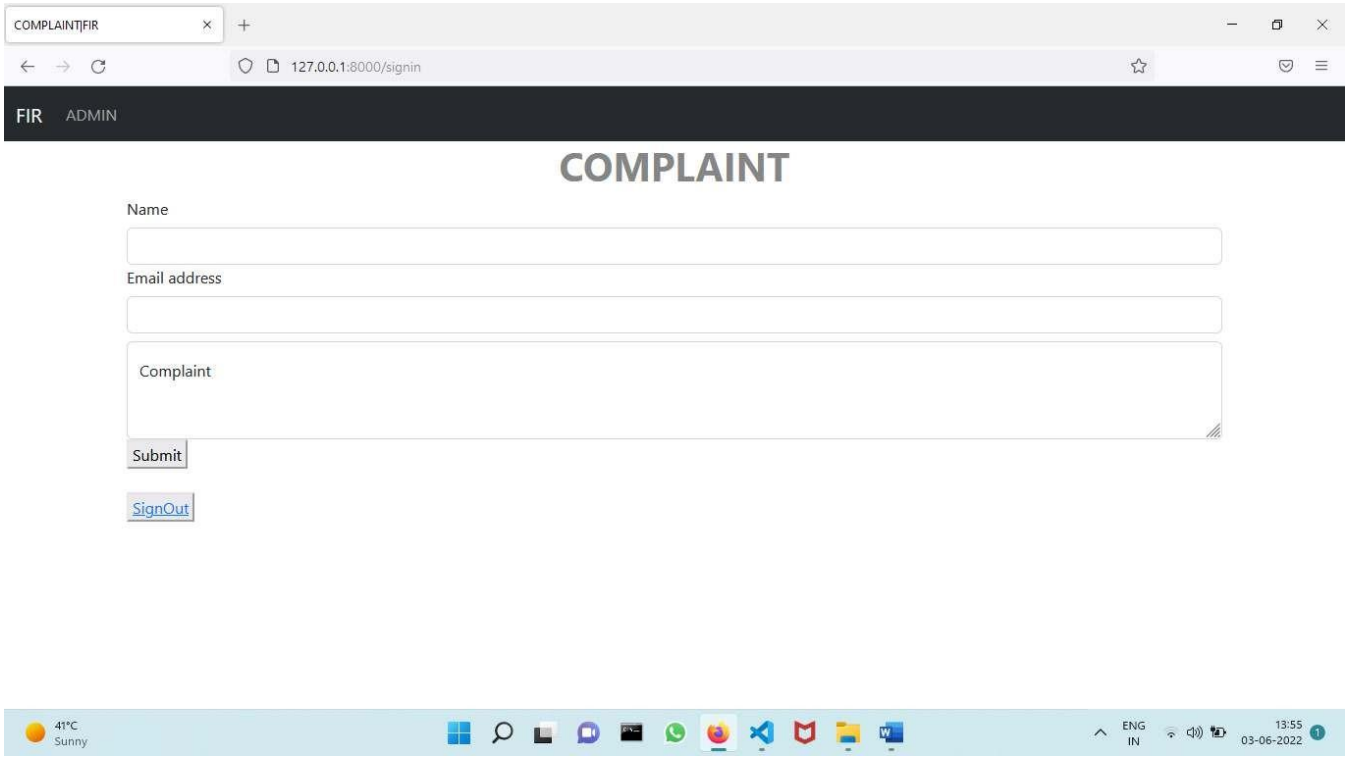

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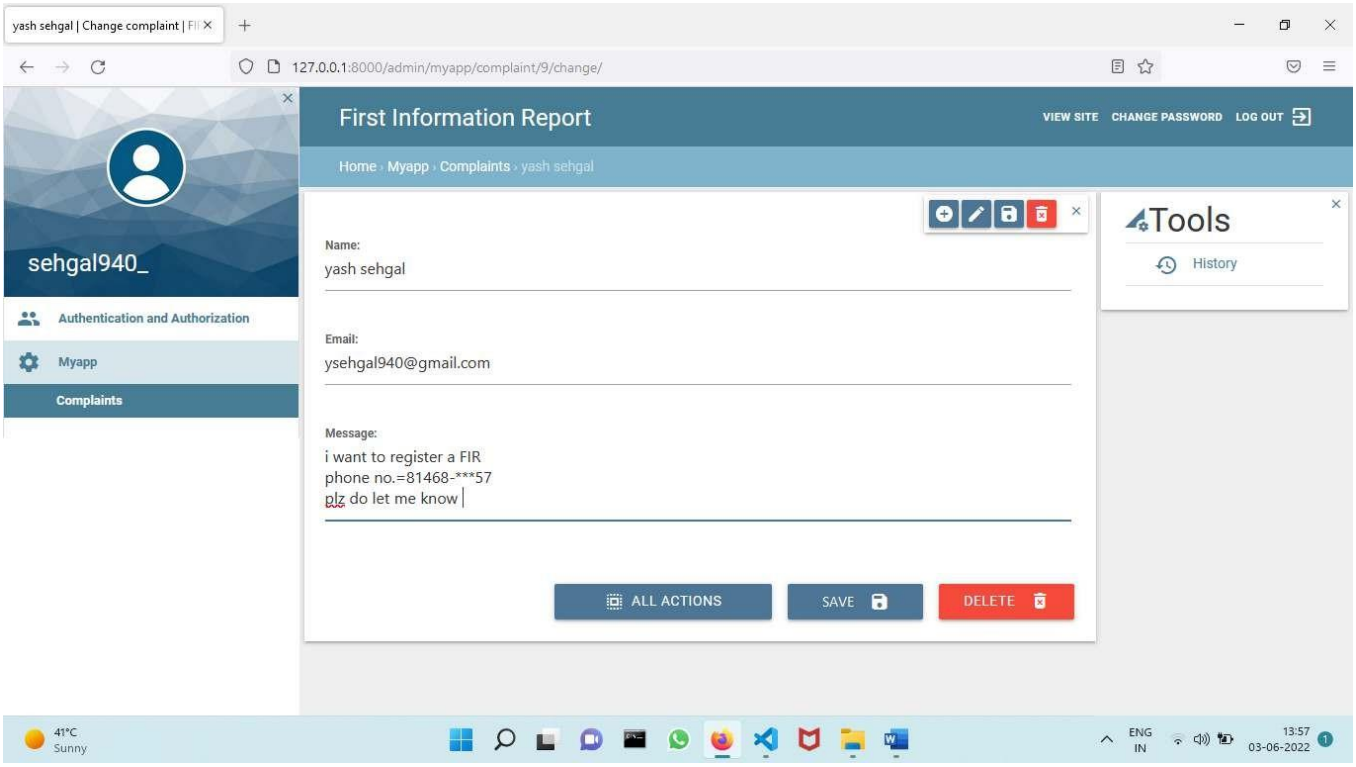
Crime Report:



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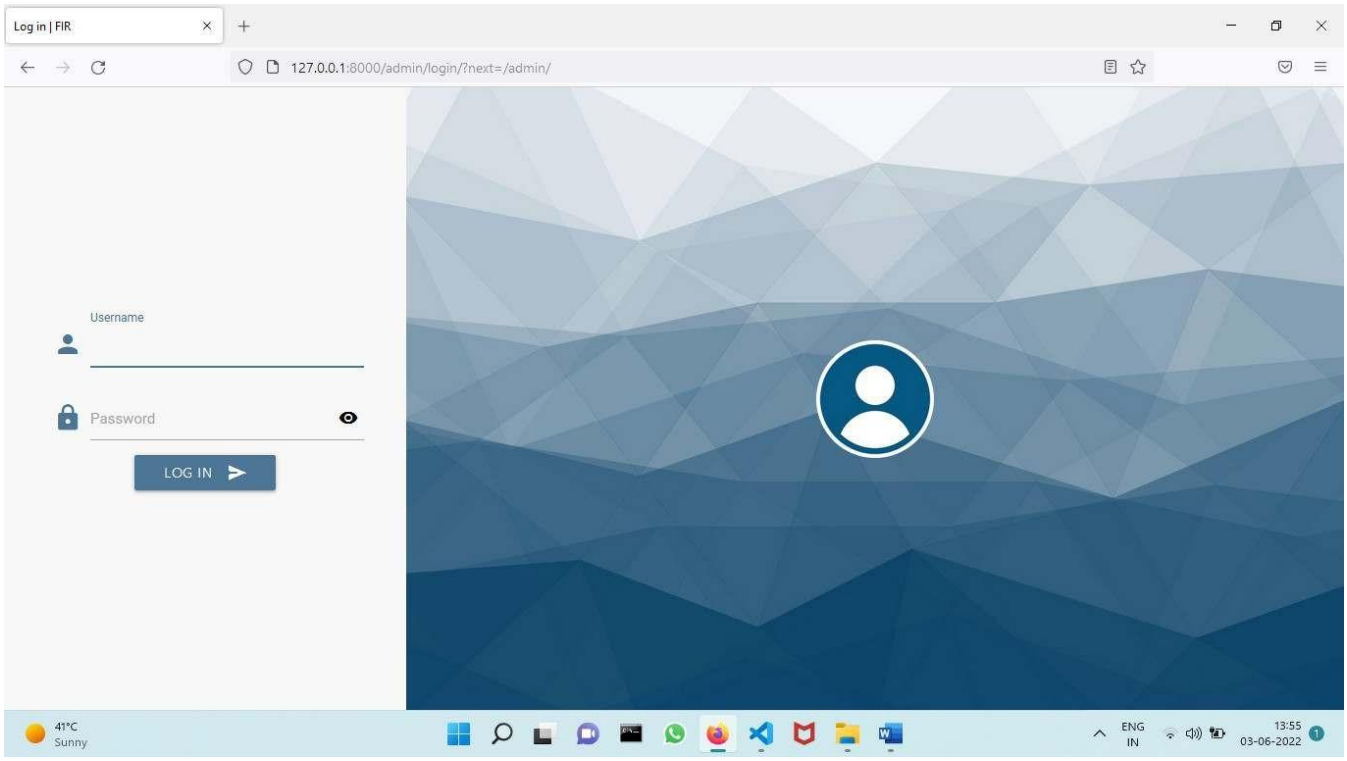
Admin Homepage:



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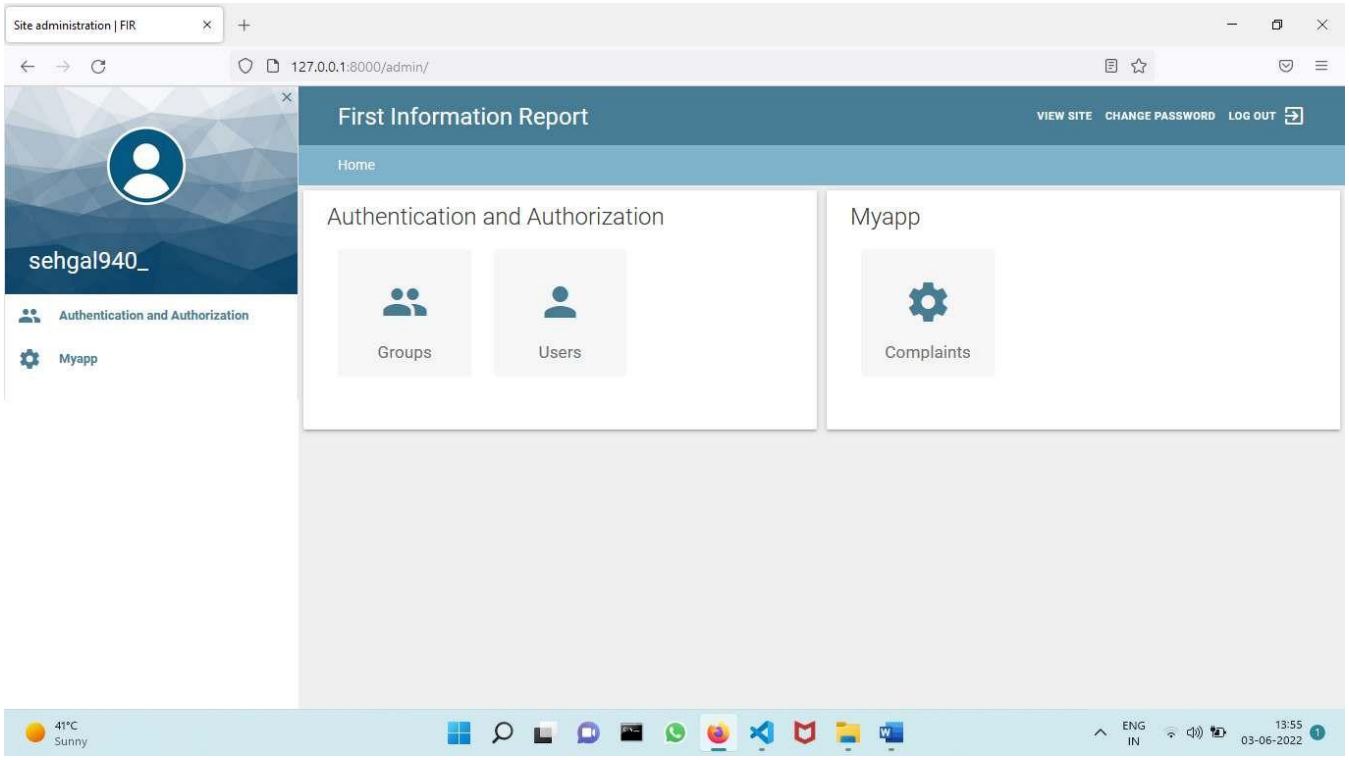

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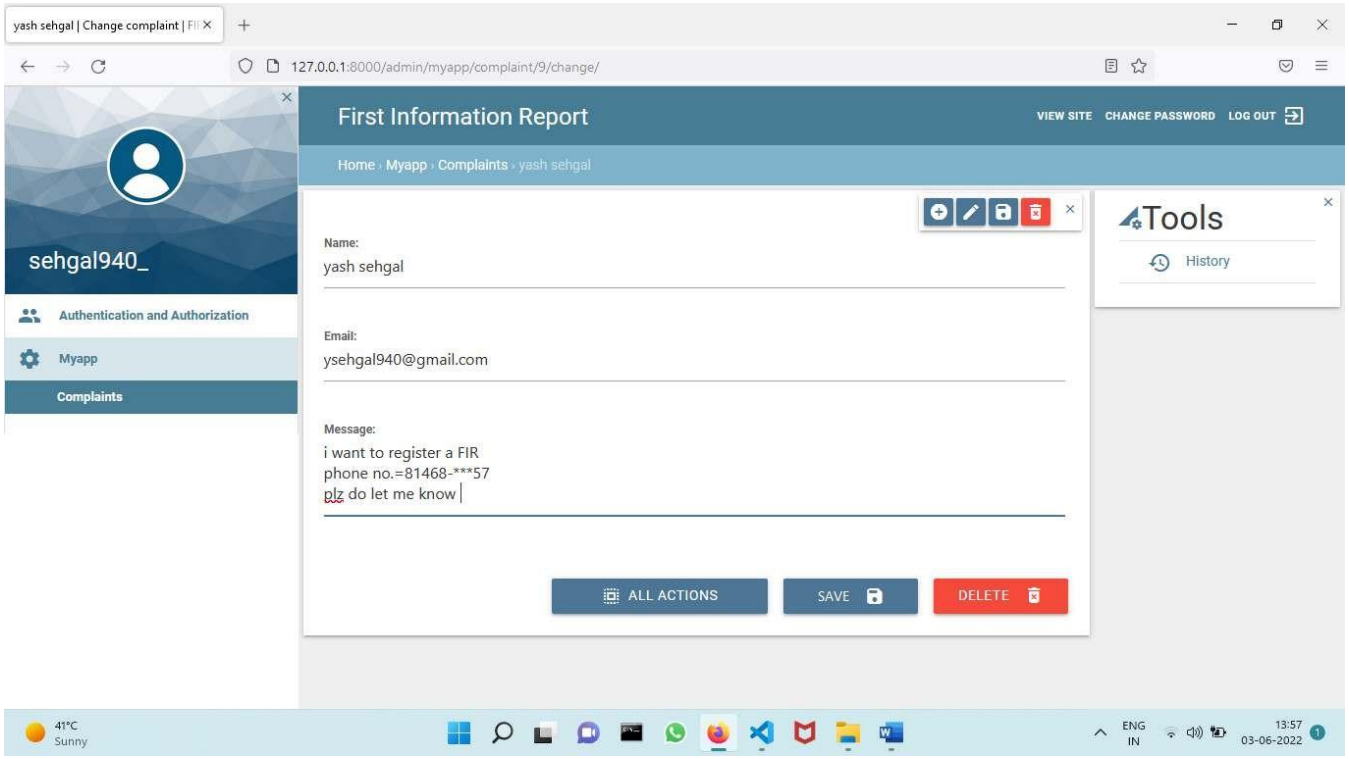

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CHAPTER 6

CONCLUSION AND FUTURE SCOPE

Conclusion

The project titled as **"Online Crime File Management"** is a web based application. This software provides facility for reporting online crimes, complaints, missing persons, show most wanted person details mailing as well as chatting. This software is developed with scalability in mind. Additional modules can be easily added when necessary. The software is developed with modular approach. All modules in the system have been tested with valid data and invalid data and everything work successfully. Thus the system has fulfilled all the objectives identified and is able to replace the existing system.

The project has been completed successfully with the maximum satisfaction of the organization. The constraints are met and overcome successfully. The system is designed as like it was decided in the design phase. The project gives good idea on developing a full-fledged application satisfying the user requirements.

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The system is very flexible and versatile. This software has a user-friendly screen that enables the user to use without any inconvenience. Validation checks induced have greatly reduced errors. Provisions have been made to upgrade the software. The application has been tested with live data and has provided a successful result. Hence the software has proved to work efficiently.

Scope for Future Enhancement

In future we can use Image recognisation instead of using heterogeneous database more over High speed, accuracy and non-redundant data are the main advantages of the proposed system. In the proposed system the user is provided with a choice of data screen, which are similar in formats to the source documents. Data entry errors can be minimized through validity checks. After the verification only the data are placed the permanent database. The software can be developed further to include a lot of modules because the proposed system is developed on the view of future, for example we should develop the system as a database independent using JDBC so we can connect it to any other database, Now the proposed system is based on PC and intranet but in the future if we need to convert it into internet then we need to change the front end only because we are developing this on the basis of OOP technology and most of the business logic's are bounded in the class files and module like reusable components.

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