Implementation of E-Patrolling using J2EE N-Tier Architecture

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ABSTRACT

E-Patrolling – is an E - Police Station which can maintain the records of crime like FIR, criminals' details and police dept administration. The E- Patrolling system uses a virtual reality interface to provide general information and online assistance. Citizens can download forms, make complaints, receive advice and/or report events of an illegal nature.

This crime reporting portal provides facility for reporting online crimes, complaints, missing persons, show most wanted person details mailing as well as chatting. Any Number of clients can connect to the server. Every user first makes the fir login to sever to show the fir availability. The server can be any Web Server. An SMTP Server must be maintained for temporary storage of emails and chat jar files for enable the chatting facilities.

The main modules in this project

- Visitors
- Registered Users
- Administrator

General Terms

E- Patrolling is an online crime reporting system which is based on J2EE n-Tier architecture provides facility to citizens to make online complaints, help in knowing online information about any crime, can do complaint about any missing person or any vehicle etc. [1]

Keywords

E-Patrolling, J2EE, online crime reporting system, FIR, user, admin.

1. INTRODUCTION

Conventionally the citizen has to go to police station in person to make complaints. In this there is a facility where citizen can make emergency complaint and the corresponding police officer gets an immediate SMS and responds to it [3]. Also the citizen can make a report missing persons, report missing valuables and can report about wanted criminals. And the police department administration can be done online [2, 4].

Administrator (super user) controls and maintains all records of the citizen and employee.

A end user first make registration into the portal with various certificates such as birth, community, income and ration card, Left thumb finger prints, passport size photograph, email id mobile number etc.

Basically there are two types of systems are as follows:-

1.1 Existing System

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

1.2 Proposed System

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

1.2.1 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.

Table 1 Existing system and Proposed System

Existing System	Proposed System
More man power	Ensure data accuracy's
Time consuming	Proper control of the higher officials
Consumes large volume of pare work.	Reduce the damages of the machines
Needs manual calculations.	Minimize manual data entry
No direct role for the higher officials	Minimum time needed for the various processing
Damage of machines due to lack of attention	Greater efficiency
Less Services	Better service
User friendliness and interactive	More User friendliness and interactive
More time required.	Less time required

2. PROCESS

2.1 The visitor module include

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

For Registration on the Portal:

For Registration of the portal a citizen should first sign up to the portal with various certificates such as birth, community, income and ration card and filling the form with passport size photo graph and left hand thumb image with sign user must sign up by filling the sign up form and get it approved by Administrator.

2.2 The registered user module

- 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.

- 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.

- Chat: This module help the user to chat with the administrator or with other registered users.

- Mail: This module helps the user to send mail to the administrator.

2.3 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 Online Crime file Management 6 reports.

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

- Chat: This module help the admin to chat with the administrator or with other registered users.

- Mail: This module helps the user to send mail to the user.

3. METHODOLOGY

HTML – Hypertext Markup Language is to create static websites.

J2EE – Java 2 Enterprise Edition is a programming platform and it is the part of the java platform for developing and running distributed java applications [10].

WAS – Web sphere application server community edition is an application server that runs and supports the J2EE and web service applications.

RSA – Rational Software Architect is a designer toolkit which is designed for develop more complex projects by providing fully dynamic web service.
XML - Extensive Markup Language used for data transfer and XML is stored naturally in DB2.

EJB – Enterprise java bean, it is architecture for the development and deployment of transactional, distributed object applications-based, server-side software components.

HTTP – Hypertext transfer protocol is a transaction oriented client/server protocol between web browser and a web server.

HTTPS – Secure hypertext transfer protocol is a hypertext transfer protocol over secure socket layer.

4. DFD's Description

4.1 Administrator

Administrator firstly logins into the portal with user name and password, after successful login he/she maintains all the details like view user detail, view compliant, view feedback, add solutions, add FIR reports and add mortem details.[Fig-1,2]
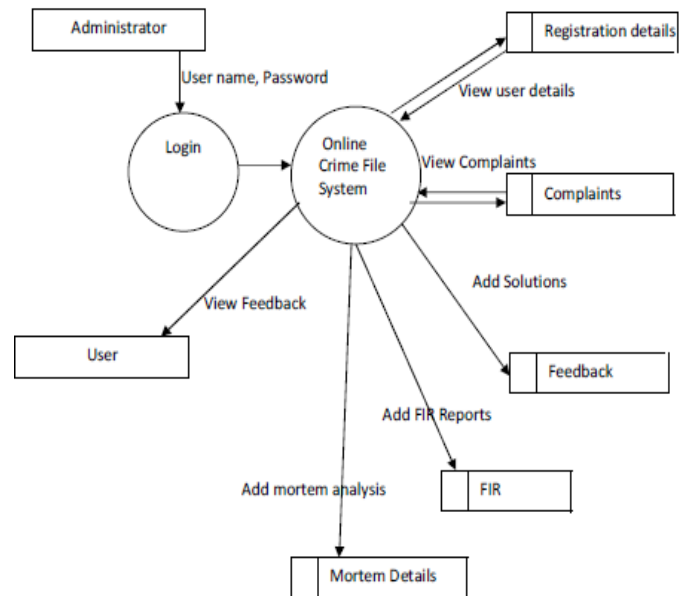

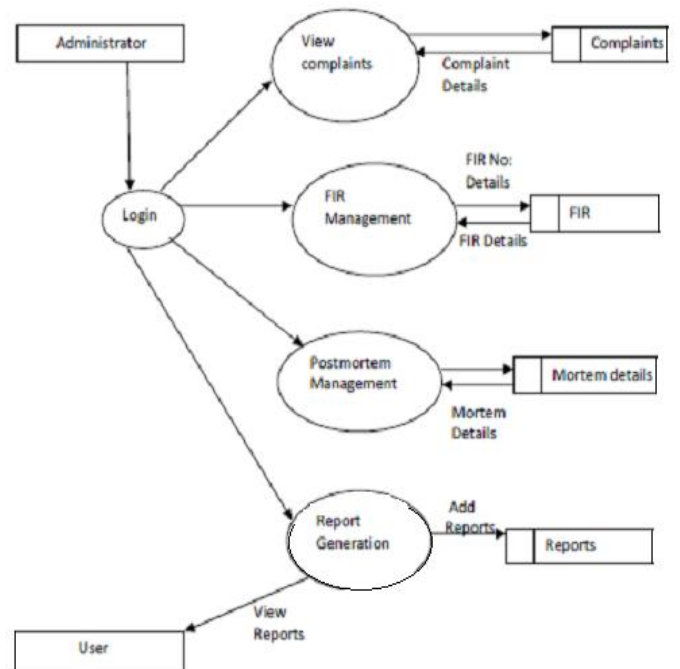**Fig: 1 DFD Level 1 for Administrator**

Fig: 2 DFD Levels 2 for Administrator

4.2 End User

A end user first make registration into the portal with various certificates such as birth, community, income and ration card, Left thumb finger prints, passport size photograph etc.

After successful registration end user login into the portal with user name and password if user name and password is valid then end user successful login into the portal after successful login into the portal end user can make a report missing persons, report missing valuables and can report about wanted criminals etc . [Fig- 3, 4]
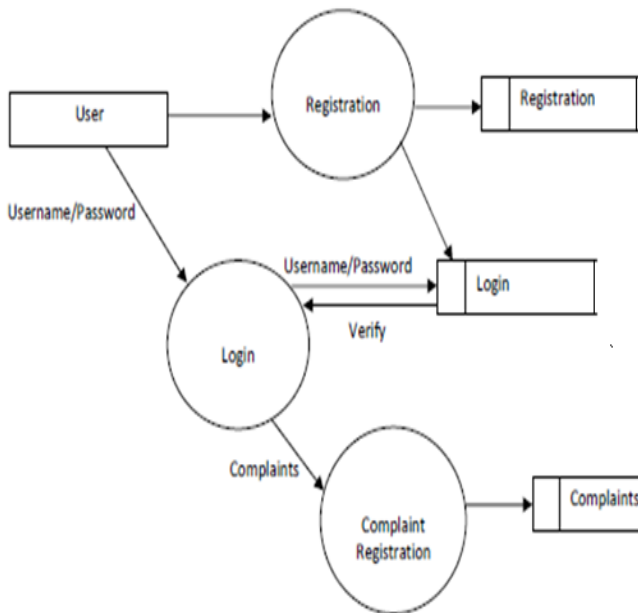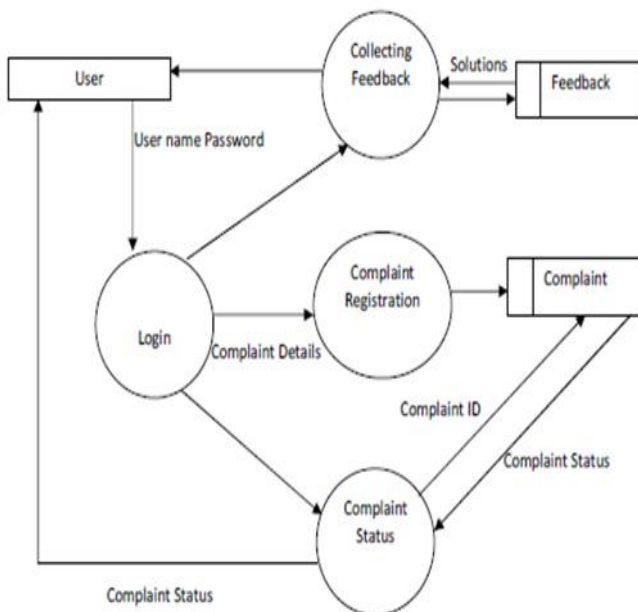

Fig: 3 DFD Level 1 for User

Fig: 4 DFD Levels 2 for User
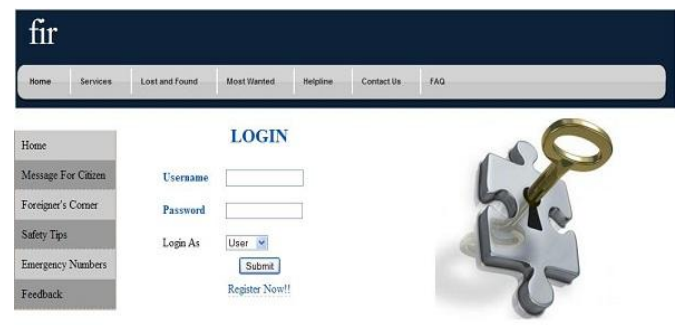
5. RESULT

Fig: 5 LOGIN page for admin

Fig: 6 LOGIN page for user

Fig: 7 HOME page for user

Fig: 8 COMPLAINT submit page

6. TECHNOLOGY USED

6.1 Java

Java is a web based technology .which is used to develop web based applications [12].

There are many features of java programming language such as

Java is very simple programming language

Java supports object oriented features

Java is platform independent

Java is very secure

Java is portable

Java is robust

Java supports internationalization

Java is distributed

Java is multithreaded

6.2 J2EE n-Tier Architecture

J2EE is client server architecture in this architecture client interacts to the server with sending a request message to server and server respond to the client with sending an acknowledgement message to the client. [6, 7]

Basically it is 3-tier or n-tier architecture

- Client tier(presentation layer)

- Middle tier (business layer)

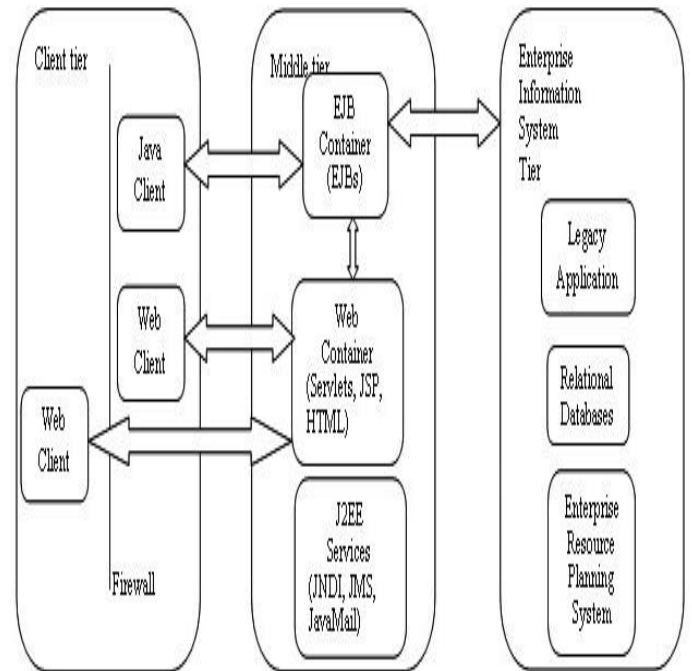- Enterprise information systems tier (database layer)

Fig.9: J2EE Architecture [5, 11]

7. CONCLUSIONS AND FUTURE SCOPE

There is a great potential for the project to be extended and improved if seriously taken care by government for its further implementation.

To conclude we have managed to create a unique tool that can be used by both the police and citizens to remove the crime and make the city crime free. Online crime reporting system is designed to make it easier and more convenient for citizen to file a police report without leaving home.

Conventionally the citizen has to go to police station in person to make complaints. Here we have provided a facility where citizen can make emergency complaint and the corresponding police officer gets an immediate SMS and responds to it. Also the citizen can make a report missing persons, report missing valuables and can report about wanted criminals. And the police department administration can be done online.

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