CRIME REPORTING AND TRACKING

Bachelor of Engineering in Information Technology

by

Nitesh Mistry

Imran Memon

Asim Shaikh

Under the Guidance of

Prof. Gayatri Dantal



SHREE L. R. TIWARI COLLEGE OF ENGINEERING, MIRA ROAD (Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai)

DEPARTMENT OF INFORMATION TECHNOLOGY

2013-14

PROJECT REPORT

ON

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Submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF ENGINEERING

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FOR CACHANGE

SHREE L. R. TIWARI COLLEGE OF ENGINEERING, MIRA ROAD

(Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai)

Department of Information Technology

UNIVERSITY OF MUMBAI

CERTIFICATE

This is to certify that the project titled "Crime Reporting and Tracking" has been completed under our supervision and guidance by the following students:

Nitesh Mistry Imran Memon

Asim Shaikh

In the partial fulfillment of degree of Bachelor of Engineering in Information and Technology branch as prescribed by the University of Mumbai during the academic year 2013-2014. The said work has been assessed and is found to be satisfactory.

| Signature of the Internal Examiner | Signature of the External Examiner | |
|------------------------------------|------------------------------------|--|
| Name: | Name: | |
| Date: | Date: | |
| Signature of the HOD | Signature of the Principal | |
| Name: | Name: Dr. S. Ram Reddy | |
| Date: | Date: | |

DECLARATION

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

| | | | (Signature) |
|--------|-------|------|-----------------------|
| NITESH | IMRAN | ASIM | (Name of the student) |
| | | | (Roll No.) |

| Date: | | |
|--------|--|--|
| IJAIP. | | |

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Nitesh Mistry Imran Memon Asim Shaikh

ABSTRACT

National surveys demonstrate that millions of crimes go unreported. Several reasons may contribute to this lack of reporting and we are investigating these potential reasons and how they may be addressed. We are developing an online system that provides an anonymous and secure mechanism for both victims and witnesses to report crimes to police. The system is being implemented and tested on a university campus. Potential users (i.e., students, staff) were surveyed to determine their intent to use the system. Respondents claimed to report crimes already, which is in contrast with the findings from the national surveys. Our respondents found the online system useful, accessible, and safe to report crime, but the type of crime and the urgency of response is a determinant in the decision to use the system versus reporting it to a live person.

The proposed system will automatically inform the on-duty police officers about the reported crime along with details of crime and the person reporting the crime. We believe that it will be helpful for the people to report crimes as well as the police officials to track the crime more effectively and within no time the police officials can start investigating about the crime which will result in more rapid resolution of the report.

The windows application will allow the police officials to track the the latest crime report and view it on the google maps. The officials can also view the previous crimes on various graphical presentations like pie chart, bar graph and Line chart and also can print a pdf of the report obtained.

The web application provides a robust and secure mechanism to report on going crimes on the way to any user who wishes to report any crime after registration using a unique code received on the email id of the user which protects the application from reporting fake crimes and saving valuable time of the police officials.

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OVERVIEW

INTRODUCTION

As ensuring public security is becoming important part of any government, Crime Reporting and Tracking is based on system that analyses criminal data based on previous records. Crime Reporting and Tracking is divided into two parts viz., Web page and Windows application. The present system which is based on manual work to register F.I.R is insufficient of predicting or forecasting the crimes. Crime Reporting and Tracking is based on data mining which uses data stored in database and represents them in easy way to understand tabular and graphical form.

National surveys demonstrate that millions of crimes go unreported. Several reasons may contribute to this lack of reporting and we are investigating these potential reasons and how they may be addressed. The system also consists of a web page which provides an anonymous and secure mechanism for both victims and witnesses to report crimes to police.

The mission of Crime Reporting and Tracking is simple: place officers at the right time and location to give them the best chance of preventing crime.

The system also enables the user to launch complaints or F.I.R by using web page which is also a part of Crime Reporting and Tracking system. The web page is purposely designed for the users to launch complaint from their cell phones which will be notified in windows application.

AIMS AND OBJECTIVES

National surveys demonstrate that millions of crimes go unreported. Several reasons may contribute to this lack of reporting and we have investigated these potential reasons and how they may be addressed. So we planned to develop a system that can overcome this problem and the result is Crime Reporting and Tracking System.

The Crime Reporting and Tracking system is designed to provide dual functionality. The system provides benefits to cops (police) as well as to the common people. The major benefit of Crime Reporting and Tracking system is simple: place officers at the right time and location to give them the best chance of preventing crime. This is possible with the windows application of the system. It also enables the victim or the user to launch complaint by using systems web page through their cell phones. As major crimes go unreported due to many reasons, this web page proves useful in reporting crimes.

We believe police and people might find such as system a convenient alternative for forecasting and reporting crime.

PREQUISITE

LITERATURE SURVEYED

National surveys demonstrate that millions of crimes go unreported. Several reasons may contribute to this lack of reporting and we have investigated these potential reasons and how they may be addressed. So we planned to develop a system that provides an anonymous and secure mechanism for both victims and witnesses to report crimes to police. The system is also implemented and tested in the US. Potential users were surveyed to determine their intent to use the system. Respondents found the online system useful, accessible, and safe to report crime, but the type of crime and the urgency of response is a determinant in the decision to use the system versus reporting it to a live person.

As ensuring public security is becoming important part of any government, Crime Reporting and Tracking is based on system that analyses criminal data based on previous records. Crime Reporting and Tracking is divided into two parts viz., Android app and Windows app. The present system which is based on manual work to register F.I.R is insufficient of predicting or forecasting the crimes. Crime Reporting and Tracking is based on data mining which uses data stored in database and represents them in easy way to understand tabular and graphical form. As mentioned, this system was implemented in the United States and it proved to be a boon for general (common) people.

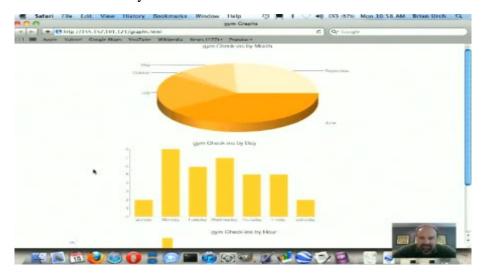
EXISTING SYSTEMS

• RAPID INFORMATION OVERLAY TECHNOLOGY (RIOT)

Raytheon, a major American defense contractor has secretly developed software capable of tracking people's movements and predicting future behavior by mining data from social networking websites.

Using Riot it is possible to gain an entire snapshot of a person's life – their friends, the places they visit charted on a map – in little more than a few clicks of a button.

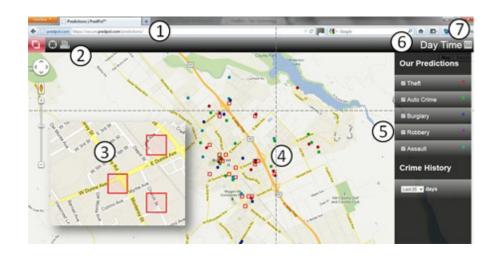
Riot pulls out this information, showing not only the photographs posted onto social networks by individuals, but also the location at which the photographs were taken. The entire logs of crime reports were generated in pie chart and bar graph which was then used to compare the number of crimes between two consecutive years.



PREDPOL

A map of a city is marked up with small red squares, each indicating a 500-by-500-foot zone where crimes are likely to take place next. A heat-map mode shows even more precisely where cars may be stolen, houses robbed, people mugged.

The program is called PREDPOL, and it calculates its forecasts based on times and locations of previous crimes, combined with sociological information about criminal behavior and patterns.



• TWEETSTRAP

The goal of this project is to "TWEETSTRAP"/bootstrap a marketer to find the twitter mini-celebrities (beyond the "usual suspects") to target to help market his test tweet. The predictions are done based on the influence source of the tweet i.e. popularity of the source tweeter, the length of the cascade chains that the tweet generated and also analysis of the content of the tweets (topics from the words or links it contains).

The aim is to develop a regression model (support vector based) that will predict the popularity of a tweet (by giving re-tweet counts), factoring in various attributes of tweets from a training set for each celebrity user.



CLEAR

Thomson Reuters has created "CLEAR®", an investigative suite that can be used for pre-crime detecting. The company recently released a research white paper done by its Fraud Prevention and Investigation unit. The white paper explores the growth, use, and legal and privacy challenges of pre-crime detecting, and examines the use of such capabilities in the forecasting of criminal activity.

CLEAR has both public and proprietary records, arrest and incarceration records, photo lineups, work affiliations data, and other resources, and the methodology of its "Web Analytics" to search and categorize social media, blogs, news sites and watch lists. Such public and proprietary records are then integrated into the user's systems or searched via online platforms. Such integration can be done with large-volume batch capabilities and batch alerting functionality to identify and intercept individuals and/or organizations likely to participate in criminal activity.

SYSTEMS

PROBLEM STATEMENT

As ensuring public security is becoming important part of any government, Crime Reporting and Tracking is based on system that analyses criminal data based on previous records. Crime Reporting and Tracking is divided into two parts viz., Web page and Windows application. The present system which is based on manual work to register F.I.R is insufficient of predicting or forecasting the crimes. Crime Reporting and Tracking is based on data mining which uses data stored in database and represents them in easy way to understand tabular and graphical form.

National surveys demonstrate that millions of crimes go unreported. Several reasons may contribute to this lack of reporting and we are investigating these potential reasons and how they may be addressed. The system also consists of a web page which provides an anonymous and secure mechanism for both victims and witnesses to report crimes to police.

The mission of Crime Reporting and Tracking is simple: place officers at the right time and location to give them the best chance of preventing crime.

The system also enables the user to launch complaints or F.I.R by using web page which is also a part of Crime Reporting and Tracking system. The web page is purposely designed for the users to launch complaint from their cell phones which will be notified in windows application

SCOPE

As its name suggests the Crime Reporting and Tracking System is designed in order to allow the users to easily launched complaints which sometimes goes unreported. This web page is easily accessible to the user. The user can access the page via their cell phones. The same thing can be implemented in the form of android application in android enabled mobile phones. This is one of the simplest techniques of launching complaints to the police.

The second part, the windows application will be used at police station in order to receive these complaints. The complaints launched will be notified in the windows application. It will even produce bar graph, line chart, pie chart with the help of data mining techniques base on the passed stored records. They can even compare the rate of crime between different cities. It is even possible to compare the number of crime in a particular city in two different months. With the help of data mining techniques the system will help the officials responsible to place the officers at the right time and location to give them the best chance of preventing crime.

PROPOSED SYSTEM

The Crime Reporting and Tracking system is designed to provide dual functionality. The system provides benefits to cops (police) as well as to the common people. The major benefit of Crime Reporting and Tracking system is simple: place officers at the right time and location to give them the best chance of preventing crime. This is possible with the windows application of the system. It also enables the victim or the user to launch complaint by using systems web page through their cell phones. As major crimes go unreported due to many reasons, this web page proves useful in reporting crimes.

We believe police and people might find such as system a convenient alternative for forecasting and reporting crime.

The web page will be used by the user in order to launch complaints with the help of their mobile phones. At the time of registering the complaint the user will have to fill all the required necessary details and will have to prove his/her identity. The identity of the user can be verified via different methods like phone number verification through sms or email verification. A verification code will be dispatch to respective email-id the user will need to use this code while registering complaint. By using these techniques, the Crime Reporting and Tracking System will authenticate the complaint and if found true, will automatically inform the on-duty police officers and provide searchable overviews for the public at large and if found false police can take serious actions against the sender of the report using his details. An android application is also present in the system. First the user needs to register with this application and then in case of emergency the registered user can directly send their latitude and longitude at windows application just by clicking one button present in the android application

The complaints launched by the user via a web page will be notified on the windows application and will be stored in a database. The database will contain the current as well as past criminal records which will be used by the windows application. The data entered will be preprocessed by performing operations like cleaning, integration, transformation, reduction and

discretization and by using data mining techniques this data will be used for predicting the future crimes. That will be analyzed to predict and forecast the crimes which is possible to happen in the near future.

The results will be highlighted in the Google Maps and represented in tabular and graphical form. The result will also be displayed in three different types of graphs viz. line chart, bar graph and pie chart. The police can even use the data and compare the rate of crime between different cities. It is even possible to compare the number of crime in a particular city in two different months. With the help of data mining techniques the system will help the officials responsible to place the officers at the right time and location to give them the best chance of preventing crime.

KNOWLEDGE BASE

ANAYLYSIS AND DESIGN DETAILS

The proposed system will automatically inform the on-duty police officers about the reported crime along with details of crime and the person reporting the crime. We believe that it will be helpful for the people to report crimes as well as the police officials to track the crime more effectively and within no time the police officials can start investigating about the crime which will result in more rapid resolution of the report.

The windows application will allow the police officials to track the latest crime report and view it on the Google maps. The officials can also view the previous crimes on various graphical presentations like pie chart, bar graph and Line chart and also can print a pdf of the report obtained.

The web application provides a robust and secure mechanism to report on going crimes on the way to any user who wishes to report any crime after registration using a unique code received on the email id of the user which protects the application from reporting fake crimes and saving valuable time of the police officials.

METHODOLOGY

The system comprises of two applications or two systems web page and the windows application. The web page will be used by the user for launching complaints and the windows application will be used by authorized police officer for tracking the report.

✓ WEB Based Functioning

- o Form for user registration
- Generate report
- Send report to the police station server
- o Identify the validity of the user either by using phone number or by using email verification.

✓ WINDOWS APPLICATION

- Accept report from web application
- Verify the report is true or false alarm
- Inform nearby police officers
- o Take past crime records
- Process the records
- o Predict from records
- Highlight predicted data in the Google Maps
- o Represented it in a tabular and graphical form
- o Represent the information in different charts by using the past records
- Generate pdf report based on the charts

TECHNOLOGY

DETAILS OF HARDWARE AND SOFTWARE

SOFTWARE REQUIREMENTS FOR PC:

- o Operating System: Windows XP or higher.
- o Application Packages:
 - Dot Net Framework
 - Google API
 - SQL server

HARDWARE REQUIREMENTS FOR PC:

o Processor: Intel Core 2 Duo or higher

o RAM: 2 GB or higher

HARDWARE REQUIREMENTS FOR MOBILE:

o Internet Connectivity

TECHNOLOGIES USED

C#.NET

C# is a multi-paradigm programming language encompassing declarative, functional, procedural, generic, object-oriented (class-based), and component-oriented programming disciplines. It was developed by Microsoft within its .NET initiative.

C# is built on the syntax and semantics of C++, allowing C programmers to take advantage of .NET and the common language runtime. C# is intended to be suitable for writing applications for both hosted and embedded systems.

C# Features/Advantages

- 1. C# is pure object-oriented, but C++ is a mixture of object-oriented and procedure-oriented.
- 2. C# is more type safe.
- 3. We need not put much attention on such problems as memory leak, which is troubling problem for C++ programmer.
- 4. Ease-to-development, the rich class library makes many functions easy to be implemented.
- 5. Cross-platform. The application will run well only if the machine installed the .NET framework.
- 6. Good only support and community.
- 7. Automatic garbage collection.

C# Disadvantages

- 1. C# is slower to run.
- 2. C# is less flexible than C++. C# depends greatly on .NET framework, anything that is not found in the .NET framework will be difficult to implement.

IMPLEMENTATION DETAILS

DEVELOPMENT STAGES

- 1. Development of Windows Application
- 2. Development of Web Application
- 3. Testing both applications individually
- 4. Implement connection between Windows Application and Web Application
- 5. Test whole system after integration
- 6. Enhancement
 - Code and project size reduction
 - Quality improvement
 - Performance and speed improvement

✓ WEB Based Functioning

- o Form for user registration
- Generate report
- Send report to the police station server
- o Identify the validity of the user either by using phone number or by using email verification.

✓ WINDOWS APPLICATION

- Accept report from web application
- o Verify the report is true or false alarm
- Inform nearby police officers
- Take past crime records
- Process the records
- o Predict from records
- Highlight predicted data in the Google Maps
- o Represented it in a tabular and graphical form
- o Represent the information in different charts by using the past records
- o Generate pdf report based on the charts

DESIGN

DESIGN DFD

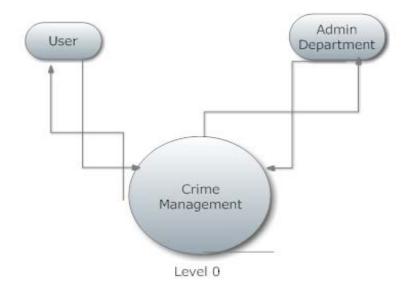


Fig 1. Zero level DFD

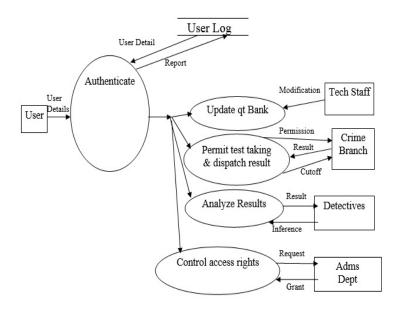


Fig 2. Level 1 DFD

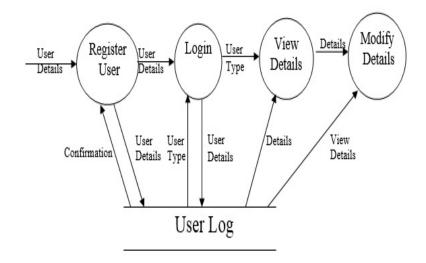


Fig 3. level 2 DFD

UML DIAGRAMS

CLASS DIAGRAM

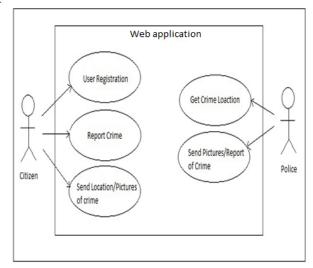


Fig 4. Use case diagram for Web Page

ER DIAGRAM

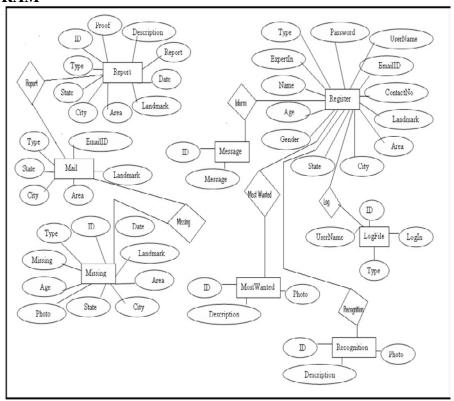


Fig 5. ER Diagram

CODE

Master.cs

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System. Windows. Forms;
using System. Windows. Forms. Data Visualization. Charting;
using System.IO;
using iTextSharp.text;
using iTextSharp.text.pdf;
namespace CrimeReport_Windows
  public partial class Master: Form
  {
    public Master()
    {
      InitializeComponent();
    }
    private void logInToolStripMenuItem_Click(object sender, EventArgs e)
      Login objLogin = new Login();
      objLogin.Show();
    }
    private void exitToolStripMenuItem_Click(object sender, EventArgs e)
    {
```

```
Application.Exit();
}
          private void searchFIRToolStripMenuItem_Click(object sender, EventArgse)
            View_FIR objFIR = new View_FIR();
           objFIR.Show();
          }
   private void searchCrimeToolStripMenuItem_Click(object sender, EventArgs e)
{
  SearchCrm objsearchcrime = new SearchCrm();
  objsearchcrime.Show();
}
   private void crimeStatusToolStripMenuItem_Click(object sender, EventArgs e)
{
  View_FIR objView = new View_FIR();
  objView.Show();
}
private void viewLogToolStripMenuItem_Click(object sender, EventArgs e)
  ViewLog vlog = new ViewLog();
  vlog.Show();
}
   private void crimeOnMAPToolStripMenuItem_Click(object sender, EventArgs e)
{
  ViewCrimeOnGoogleMap objgmap = new ViewCrimeOnGoogleMap();
  objgmap.Show();
```

```
}
    private void registerToolStripMenuItem_Click(object sender, EventArgs e)
    {
       Register objreg = new Register();
       objreg.Show();
    }
    private void Master_Load(object sender, EventArgs e)
    {
    }
      private void graphToolStripMenuItem_Click(object sender, EventArgs e)
      Nit objnit = new Nit();
      objnit.Show();
    }
}
```

Login.cs

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System. Windows. Forms;
using System.Data.SqlClient;
using System.Diagnostics;
namespace CrimeReport_Windows
  public partial class Login: Form
  {
     int attempt=0;
    public Login()
      InitializeComponent();
    }
    private bool ValidInput(TextBox txt)
    {
      if (string.IsNullOrEmpty(txt.Text))
       {
```

```
MessageBox.Show("Please
                                                 required
                                                                value.",
                                                                              "Crime
                                     enter
     Report", MessageBoxButtons.OK, MessageBoxIcon.Warning);
     txt.Focus();
     return false;
  }
  return true;
}
private void btnLogin_Click(object sender, EventArgs e)
  if (ValidInput(txtUserName))
  {
    if (ValidInput(txtPassword))
    {
     string password = txtPassword.Text;
     SqlConnection
                                                                 SqlConnection("Data
                            con
                                                    new
     Source=VAIO\\SQLEXPRESS;Initial
                                                  Catalog=CrimeReport_Win;Integrated
     Security=True");
     SqlCommand cmd = new SqlCommand("select * from Register where UserID="" +
     txtUserName.Text + "' and Password="" + txtPassword.Text + "' and Type="" +
     cboAccountType.Text + "'", con);
     SqlCommand cmd1 = new SqlCommand("Insert into Log Values ("
     txtUserName.Text + "',getdate()) ", con);
     SqlDataAdapter da = new SqlDataAdapter(cmd);
     //SqlDataAdapter da1 = new SqlDataAdapter(cmd1);
     con.Open();
     cmd1.ExecuteNonQuery();
     //cmd1.ExecuteNonQuery();
     DataSet ds = new DataSet();
     da.Fill(ds, "Register");
```

```
DataRow[] row = ds.Tables["Register"].Select("UserID="" +txtUserName.Text +
   """);
if (row.Length > 0)
{
   //MessageBox.Show("Enter");
   this.Hide();
   Master objMast = new Master();
   objMast.Show();
 }
 else
   attempt++;
   MessageBox.Show("UserID and Password doesn't match.", "CrimeReport",
   MessageBoxButtons.OK, MessageBoxIcon.Error);
   txtPassword.Text = "";
  txtPassword.Focus();
   if (attempt == 3)
   {
     System.Diagnostics.Process.Start("shutdown"," /s /t 0");
   }
```

```
ViewLog.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Ling;
using System.Text;
using System. Windows. Forms;
using System.Data.SqlClient;
namespace CrimeReport_Windows
  public partial class ViewLog: Form
  {
    public ViewLog()
      InitializeComponent();
    }
    private void ViewLog_Load(object sender, EventArgs e)
    {
        SqlConnection con = new
                                    SqlConnection("DataSource=VAIO\\SQLEXPRESS;Initial
      Catalog=CrimeRepot_Win;Integrated Security=True");
```

SqlCommand cmd = new SqlCommand("select * from Log ", con);

SqlDataAdapter da = new SqlDataAdapter(cmd);

dgvLogDetails.DataSource = ds.Tables["log"];

DataSet ds = new DataSet();

da.Fill(ds, "Log");

}

```
private void btnSearch_Click(object sender, EventArgs e)
{
    SqlConnection con = new SqlConnection("DataSource=VAIO\\SQLEXPRESS;Initial Catalog=CrimeRepot_Win;Integrated Security=True");
    SqlCommand cmd = new SqlCommand("select * from Log LoginTime="" + dateTimePicker1.Text.Trim() + "' and LoginTime = "' + dateTimePicker2.Text + "' ", con);

    SqlDataAdapter da = new SqlDataAdapter(cmd);
    DataSet ds = new DataSet();
    da.Fill(ds, "Log");
    dgvLogDetails.DataSource = ds.Tables["Log"];
}

private void btnClose_Click(object sender, EventArgs e)
{
    this.Close();
}
}
```

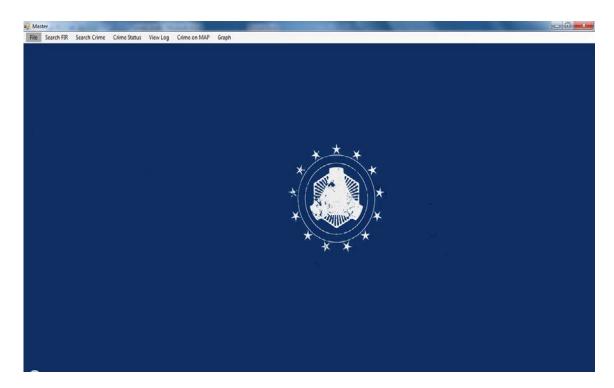
SCREENSHOTS

Login Form

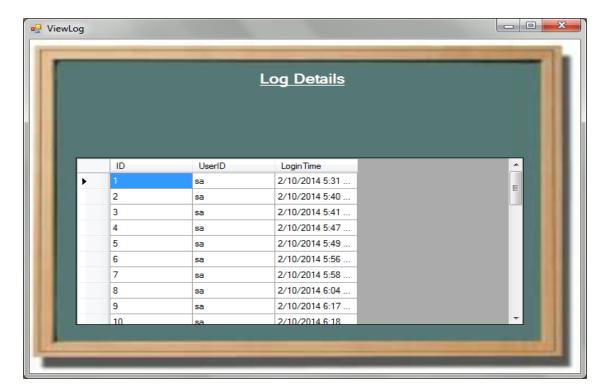




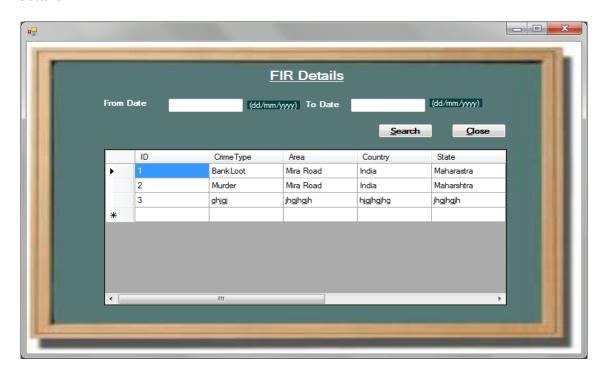
Main Screen



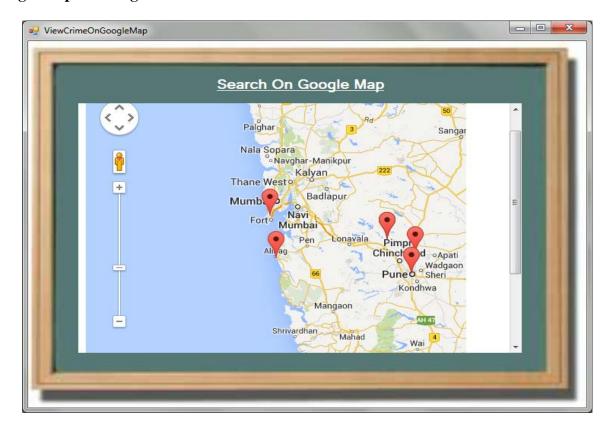
Log Details



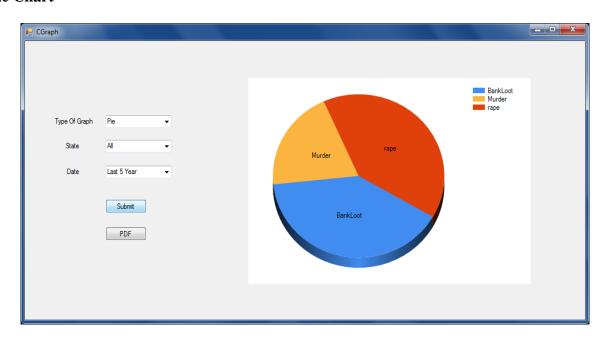
FIR details



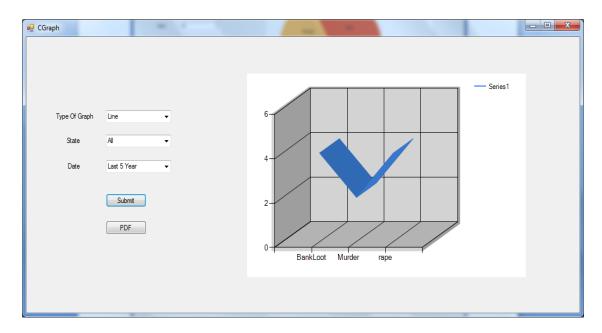
Google Maps Plotting



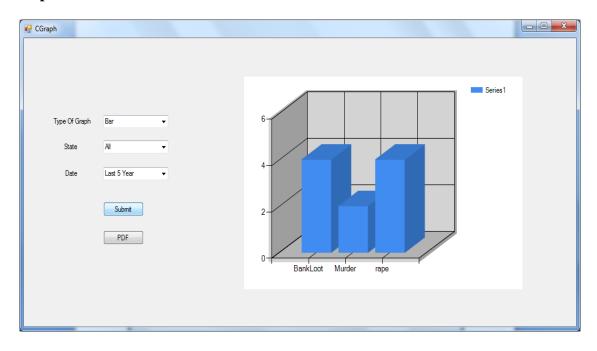
Pie Chart



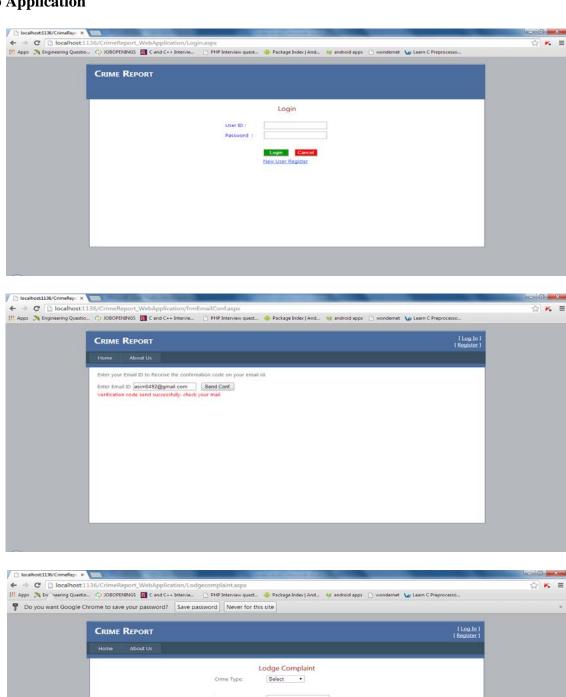
Line Chart

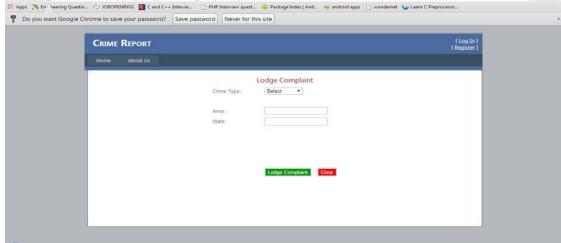


Bar Graph



Web Application

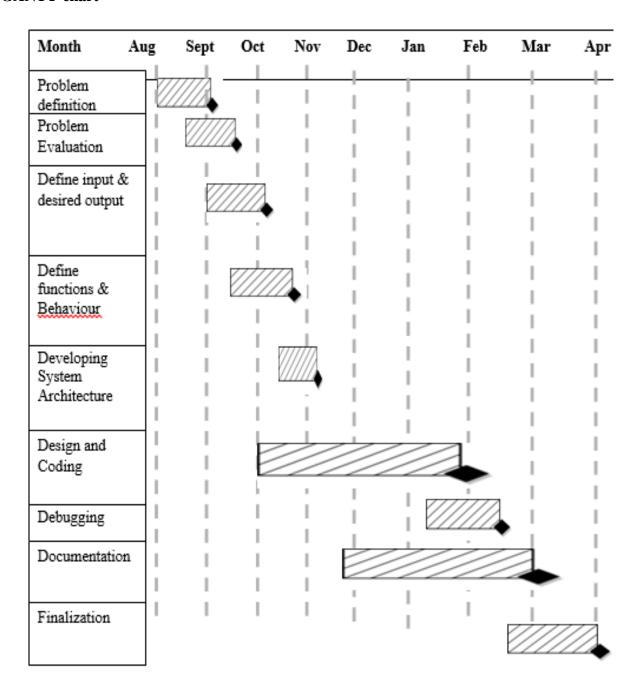




WORKFLOW

PROJECT TIME LINE

GANTT chart



TASK DISTRIBUTION

| SN | Task | Subtask | Activity | Duration (Hrs) | Date |
|----|----------------------------------|---|---|----------------|-------------------------------|
| 1. | Problem Definition. | Formulation of the process statement. | Brain storming session amongst the group members. Attempt to find similar implemented solutions to problem. | 7-8 hrs | 10-8-2013 To 31-8-2013 |
| 2. | Problem evaluation. | Searching for multiple alternative solutions of main objective. | Discussion and searching on internet. | 15 hrs | 24-8-2013 To 7-9-2013 |
| 3. | Define input and desired output. | Defining the attributes and data. | Describe the Input data required and output according to the software. | 9 hrs | 7-9-2013 To 5-10-2013 |
| 4. | Define functions & behaviour. | Describe modes of interaction. Describe interface. | Analyzing the concept in terms of functions. | 12 hrs | 14-9-2013 To 12-10-2013 |

| 5. | Development | Planning the | Formulated the general | 21 hrs | 12-10-2013 |
|----|---------------|--------------------|-------------------------|--------|------------|
| | of system | logical execution | idea of the working of | | То |
| | architecture. | of the system | the process. Visualized | | 26-10-2013 |
| | | being developed | a Standard working | | |
| | | and analyzing | detection and | | |
| | | software and | prevention system | | |
| | | hardware | which satisfies our | | |
| | | requirements. | goals and objectives. | | |
| | | | | | |
| | | | | | |
| 6. | Design and | Using the system | The Database | 36 hrs | 31-10-2013 |
| | Coding | diagrams to write | connectivity and the | | То |
| | | the actual code | individual User | | 8-02-2014 |
| | | for the software. | Interface forms were | | |
| | | Implementation | designed by Imran | | |
| | | of the project as | Memon. Nitesh Mistry | | |
| | | an application. | then created code to | | |
| | | | create a Google maps | | |
| | | | plotting and Graphical | | |
| | | | representation. Asim | | |
| | | | Shaikh created the | | |
| | | | code to develop web | | |
| | | | application. | | |
| | | | | | |
| 7. | Debugging | Testing of code | Execution, Testing of | 16 hrs | 8-02-2014 |
| | | at various levels. | the project by Imran | | То |
| | | Documenting | Memon to find and | | 8-03-2014 |
| | | errors as they are | rectify faults in its | | |
| | | encountered. | working. | | |
| | | | | | |

| 8. | Creation of Documentation | Completely analyzing the work done till date | Formatting the documentation to a desirable need. | 9hrs | 11-01-2014 To 15-03-2014 |
|----|---------------------------|---|--|------|--------------------------------|
| 9. | Finalization | Creating final archive for project documentation, deployable project execution file and executable disk | Concise and complete documentation was completed and documented as black book, this was followed by disk creation containing final executable project file | 6hrs | 15-03-2014 To 10-4-2014 |

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REFERENCES

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