CHRIST
UNIVERSITY
BANGALORE, INDIA

Declared as Deemed to be University under Section 3 of UGC Act 1956

POLICE CONTROL SYSTEM (PCS)

By

Akshay Sadarangani (1115905)
Anmol Kumar (1115907)
Nikhil Noronha (1115938)

Under the guidance of
Ms. Kavitha R.

DBMS project report submitted in partial fulfillment of the requirements of IV semester BCA, Christ University

March - 2013

CHRIST
UNIVERSITY
BANGALORE, INDIA

Declared as Deemed to be University under Section 3 of UGC Act 1956

CERTIFICATE

This is to certify that the report titled ***Police Control System (PCS)*** *is a bona fide record of work done by* ***Akshay Sadarangani (1115905), Anmol Kumar (1115907) and Nikhil Noronha (1115938)*** *of Christ University, Bangalore, in partial fulfillment of the requirements of IV Semester BCA during the year 2013.*

Head of the Department **Project Guide**

Valued-by:

1.

2.

Name :Akshay Sadarangani
Register Number :1115905
Examination Centre :Christ University
Date of Exam :

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENT

Police Control System (PCS) would not have been possible without the kind support and help of many individuals and organizations. We would like to extend our sincere thanks to all of them.

We would like to thank our parents, for their care, encouragement and being our moral support at all stages of the project. We are thankful to Ms. Kavitha R. for her guidance and constant supervision as well as for providing necessary information regarding the project & also for her support in completing the project.

Sincere thanks to all the faculty members of the Department of Computer Science, Christ University for their kind co-operation and encouragement which helped us in the completion of this project.

We would like to express our special gratitude and thanks to the industry people for giving us their time and attention. . Our thanks and appreciation also goes to all our colleagues in developing the project and people who have willingly helped us out with their abilities.

Last but not the least; a special and sincere to the Christ University Lab administrators and lab staff for allowing us to use the systems in complete freedom and supplying us with all the software needed and their technical support.

This project would not have been possible without every contribution, support and guidance of everyone mentioned.

ABSTRACT

The police administration in India is still using a file-based approach towards the storage and maintenance of its various records and implementing hand written registration of FIRs and Charge Sheets. This process is very cumbersome and tedious. This project proposes the use of computerized databases to store these details.

With the help of a DBMS software, the police department can easily store and access information right at its fingertips. This software will not only be used to access stored FIRs and case files but also be used to register new FIRs and file charge sheets with the use of passport number/pan number/voter id number/etc. to endorse it.

A DBMS software for the police department will solve the problems related to a file-based approach such as data inconsistency, data redundancy, data dependence, information sharing, concurrent access and various security issues such as unauthorized access and hiding of information. Thus, a software which can overcome such problems is much needed for practical use.

There is a lot of manual work currently and hence the requirement for manpower is more. This project aims to ease the entire data processing system and make the sharing of information between police personnel possible, flexible and fast.

1. INTRODUCTION

1.1 OVERVIEW OF THE SYSTEM

Police Control System (PCS) is a software to aid the police system/administration in maintaining the crime records, FIR records, case records and prisoner records in a country segregated on the basis of different states, cities and police stations in the local areas. Currently there is still a lot of manual work and by computerizing all the activities inside a police station results in easy and effective management.

This project will be done using .NET as front end, and Oracle as back end. It can used to register crimes and FIRs. This project is mainly useful for police stations. This system will help to manage most of the activities in a police station (pertaining to data management) using computers. Currently all of this work is done manually. By computerizing it, the activities inside a police station can be managed easily and effectively.

1.2 PROJECT PLAN

Student names: Akshay Sadarangani, Anmol Kumar and Nikhil Noronha Register numbers:1115905, 1115907 and 1115938						
Title : Police Control System (PCS)						
Department : Computer Science		Guide : Kavitha R.				
Date	Phase	Start time	End time	Regular hours	Over time	Total hours
14/11/2012	SYNOPSIS SUBMISSION	11:00am	1:00pm	2	0	2
21/11/2012	REQUIREMENT ANALYSIS PHASE	11:00am	1:00pm	2	2	4
23/11/2012	REQUIREMENT ANALYSIS PHASE	2:00pm	4:00pm	2	2	6
28/11/2012	SYSTEM DESIGN PHASE	11:00am	1:00pm	2	0	2
30/11/2012	SYSTEM DESIGN PHASE	2:00pm	4:00pm	2	2	4
5/12/2012	SYSTEM DESIGN PHASE	11:00am	1:00pm	2	2	4
7/12/2012	SYSTEM DESIGN PHASE	2:00pm	4:00pm	2	4	6
14/12/2012	FIRST DRAFT SUBMISSION	11:00am	1:00pm	2	0	2
19/12/2012	DEVELOPMENT PHASE	11:00am	1:00pm	2	4	6

2/01/2013	DEVELOPMENT PHASE	11:00am	1:00pm	2	4	6
4/01/2013	DEVELOPMENT PHASE	2:00pm	4:00pm	2	4	10
9/01/2013	DEVELOPMENT PHASE	11:00am	1:00pm	2	6	8
23/01/2013	DEVELOPMENT PHASE	11:00am	1:00pm	2	2	4
30/01/2013	DEVELOPMENT PHASE	11:00am	1:00pm	2	6	8
1/02/2013	TEST PHASE	2:00pm	4:00pm	2	4	6
6/02/2013	TEST PHASE	11:00am	1:00pm	2	2	4
13/02/2013	TEST PHASE	11:00am	1:00pm	2	4	6
20/02/2013	DOCUMENTATION PHASE	11:00am	1:00pm	2	4	6
22/02/2013	DOCUMENTATION PHASE	2:00pm	4:00pm	2	3	5
1/03/2013	PROJECT DRAFT REPORT SUBMISSION	2:00pm	4:00pm	2	4	6
8/03/2013	FINAL REPORT SUBMISSION	2:00pm	4:00pm	2	2	4
Total hours	DOCUMENTATION PHASE			42	59	101

Table 1.1 Project Plan

2. SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

The existing method used by the police is a physical file-based approach where any sort of data such as FIRs, details of criminals etc. are all stored physically. This method has a lot of limitations, some of which are listed below:

- Lack of security of data.
- More man power.
- Time consuming.
- Consumes large volume of pare work.
- Needs manual calculations.
- No direct role for the higher officials.
- Easier manipulation of records

Therefore, the use of a DBMS software could overcome most of the limitations thrown by the physical file based approach.

2.2 PROPOSED SYSTEM

The proposed system is meant to be designed in a way such that all the existing problems of the existing system are solved. Some of the key features the proposed system shall provide are:

- Users will be able to login and access the database based on the administrator provided rights.
- New users can apply for registration and will be granted with a user name and password upon approval of the administrator.
- This software can be used to register new FIRs, file charge sheets, access pending FIRs and closed FIRs including options of case history and existing cases.
- The details of criminals including their *Modus Operandi* and heat levels are also provided.
- Users have access to records of prisoners who have served and are currently serving prison with their respective locations and time of imprisonment.
- This project helps in searching case files as well as criminals which can be further filtered.

2.3 LITERATURE REVIEW

The Police force in India has its share of large amounts of data every single day. But, they still use the primitive approach of hand written files. Storing information in the form of hand written files can be challenging. Some general questions which arise in the mind of the information keeper are where to store, how to store (in what manner), what all information to store, etc. Therefore, the development of a software to tackle these issues has great potential and worth.

Using databases, records can easily be stored and retrieved at any point of time. Hence, a DBMS software is especially useful for such record keeping. Since the Police force handles data ranging from complaints and FIRs to registering criminals and crimes, it can be used as a great tool and hence be of great help. A set of definite required fields in much preferred over an undefined blank form.

This software will thus help the police in spending lesser time making files and more time catching criminals, thus increasing the efficiency of the police department and hasten the process of record keeping. It will also help in a safer and more secure maintenance of records without much a risk on manipulation.

2.4 FUNCTIONAL REQUIREMENTS

Functionality	Description	Event	Result
Login	The login module provides security to the software by granting access only to authorized users.	*Correct Entry	Users get past the login screen and are granted access to the system.
		*Wrong Entry	Users are shown an access denied message and need to re-enter their login credentials
*Register FIR.	The FIR module helps the police in accepting FIRs, maintaining a police report and view FIR status.	*All fields are filled.	Users can register FIRs
		*Incomplete fields	Error message occurs if user has not filled all fields.

*View FIR. *Update FIR status. *General Report		*Click. *Click * All fields are filled *Incomplete fields.	User gets to view the details in the FIR. Admin has the privilege to update FIR status. Used to lodge general non-criminal complaints. Error message occurs if user has not filled all fields.
*Register Criminal	The Criminal Register Management module is used to register	*All fields are filled.	Criminal details are stored on to the database.

	criminals, view their details and also view the details of crimes committed.	*Incomplete fields.	Error message occurs if user has not filled all fields.
*View details of criminal		*Click	User gets to view details of criminals stored onto the database.
*View Crime details		*Click	User gets to view details of crimes committed which are stored onto the database.
*Register Prisoner	The Prisoner Management System module helps manage record of the prisoners,	*All fields are filled	Prisoner details are stored onto the database.

*View Prisoner details.	location, time and date of imprisonment and also their date of release.	*Incomplete fields. * Click	Error message occurs if all fields are not filled. User gets to view details of prisoners.
*Search	The Search module helps in finding relevant and specific information required.	*Fill Fields	User gets to see the search details

Table 2.1 Functional Requirements

2.5 SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS

Processor : x86/x64 Compatible processor
with a minimum of 1.7 GHz Clock speed

RAM : 256 MB or more

Hard disk : Minimum of 300 MB

Standard Keyboard, mouse and printer (for report printing)

SOFTWARE REQUIREMENTS

Operating System : Windows 2000 and above (32 bit or 64 bit)

DBMS Software : Oracle 10g

3. SYSTEM DESIGN

3.1 SYSTEM ARCHITECTURE

- The 'Police Control System' software uses the two-tier architecture.
- The two-tier architecture here is divided into a user-services tier which here is the User interface and a data-services tier which here is the database.
- The User Interface is made using VB.NET and the database is made using Oracle 10g.
- Features:
  1. Easy availability.
  2. Comprehensive Security.
  3. Ease of Management.
  4. Lower Cost.

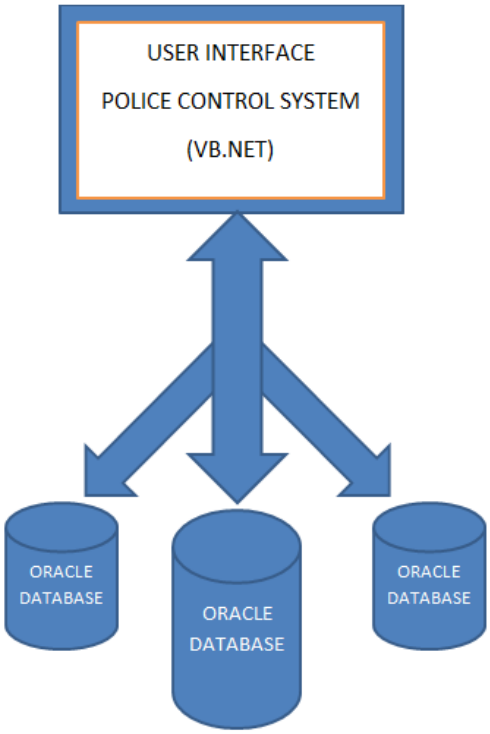

Fig 3.1 Two-tier architecture

Advantages:

1. Easy installation.
2. Easy maintenance.
3. Simplicity
4. Quality and Consistency.
5. Lower cost.

Disadvantages:

1. Only suited for small enterprises.
2. Bigger the enterprise, harder it is to maintain
3. Cannot handle a lot of traffic at a time
4. Three-tier architecture more effective than two-tier architecture

3.2 MODULE DESIGN

The following diagram shows the modules and the components in the modules.

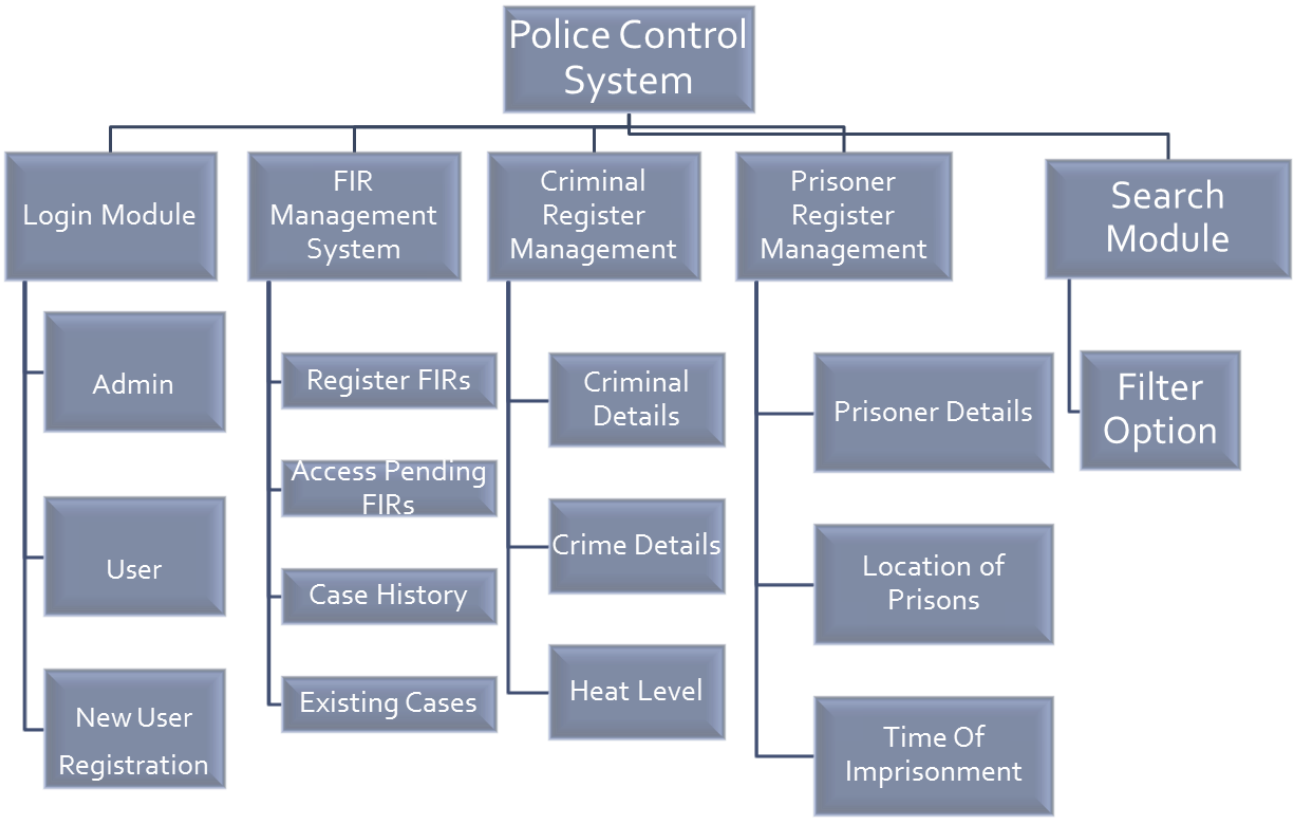

Fig. 3.2 Module Design

3.3 DATABASE DESIGN

3.3.1 TABLE STRUCTURE

Here is tabular representation of all the tables that we have in our project. With each and every table related to its respective module. Each table has a primary key marked in bold and is underlined whereas some tables also have a foreign key which have been represented with a star next to it.

Login Table

User Name	Password	AdminApproval*

Police Table

PoliceID	Name	DOB	Sex	Position

Fir Table

FIRNo.	PoliceID	PassportNo.	InformantName	Status*

Case Table

CaseID	FirNo.	PoliceID	InformantName	Status*

Criminal Table

CriminalID	Name	Sex	Age	Height

Crime Table

CrimeID	CriminalID	PoliceID	Modusoperandi	Evidence

Prisoner Table

PrisonerID	CriminalID	CaseID	DateOfimp	HeatLevel	Status*

Table 3.1 Table Structure

3.3.2 TABLE DESIGN

The diagram below show the inter connectivity of all the tables to each other with arrows pointing the direction of flow.

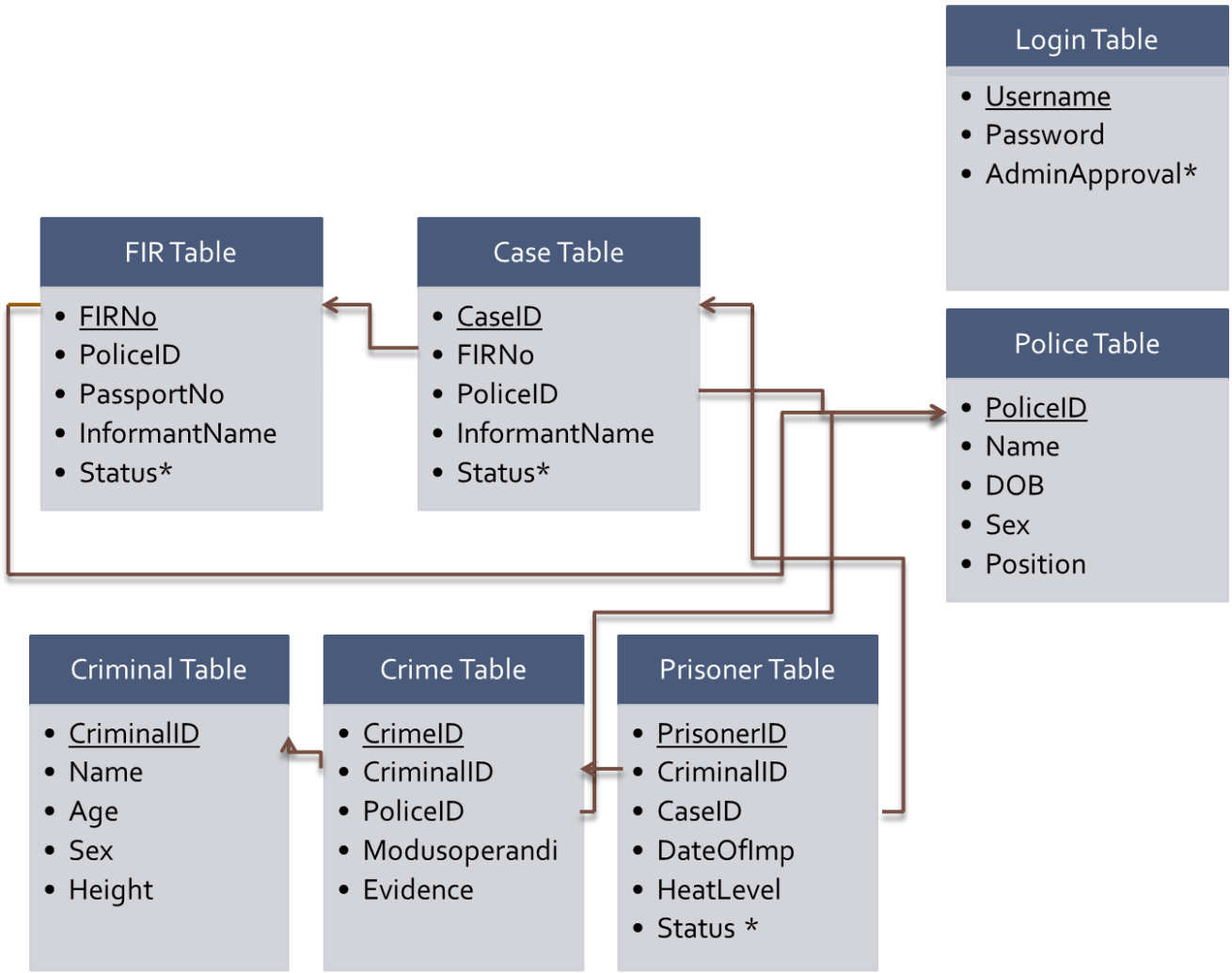

Fig. 3.3 Database Design

3.3.3 DATA DICTIONARY

Serial No.	Table Name	Field	Type	Size	Default	Description
1	Login	Username	Varchar2	20	-	Username for login
		Password	Varchar2	20	-	Password for login
		AdminApp	Boolean	1	FALSE	Administrator's approval required for the activation of the account
2	Police	PoliceID	Number	5	-	Police Officer's Identifaction Number
		Name	Varchar2	20	-	Officer's Name
		DOB	Date		-	Date of birth
		Sex	Varchar2	1	M	Sex
		Position	Varchar2	20	-	Position of Officer
		PSID	Number	5	-	Officer's Police Station ID
		Phone	Number	15	-	Officer's Phone Number
		Email	Varchar2	30	-	Email ID if any
3	FIR	FIRNo	Number	5	-	Auto-Generated FIR Number
		Date	Date		-	Date of Incident
		Time	Time		-	Time of Incident
		FIR_Date	Date		-	Date on which FIR was lodged
		FIR_Time	Time		-	Time at which FIR was lodged
		Place	Varchar2	30	-	Place of Incident
		InformantName	Varchar2	20	-	Informant's Name
		Act_Info	Varchar2	50	-	Information of Incident
		PoliceID	Number	5	-	Registering Police Officer's ID
4	Case	CaseID	Number	5	-	Auto Generated Case ID
		FIRNo	Number	5	-	Associated FIR Number
		PoliceID	Number	5	-	Registering Police Officer's ID
		InformantName	Varchar2	20	-	Informant's Name
		InformantAdd	Varchar2	30	-	Informant's Address
		InformantAge	Number	3	-	Informant's Age
		InformantOcc	Varchar2	20	-	Informant's Occupation
		InformantPh	Number	15	-	Informant's Phone Number
		Description	Varchar2	50	-	Description of Event
		MiscreantName	Varchar2	20	-	Suspect's Name
		MiscreantAge	Number	3	-	Suspect's Age
		MiscreantSex	Varchar2	1	-	Suspect's Gender
		MiscreantAdd	Varchar2	30	-	Suspect's Address
		MiscreantNat	Varchar2	10	-	Suspect's Nationality
5	Criminal	CriminalID	Number	5	-	Auto Generated Criminal ID
		Name	Varchar2	20	-	Criminal's Name
		Age	Number	3	-	Criminal's Age
		Sex	Varchar2	1	M	Criminal's Gender
		Height	Number	5	-	Criminal's Height
		Weight	Number	5	-	Criminal's Weight
		IDMark	Varchar2	30	-	Identification Marks
		Heat Level	Number	1	1	How dangerous a criminal is (with 1 being lowest)
		CaseID	Number	3	-	Reference To Associated Case ID
		Status	Varchar2	10	-	Criminal's Status

6	Crime	CrimeID	Number	5	-	Auto Generated Crime ID
		CriminalID	Number	5	-	Associated Criminal ID if available
		Location	Varchar2	30	-	Crime Spot
		Time	Time		-	Time of Crime
		Date	Date		-	Date of Crime
		Evidence	Varchar2	50	-	Evidence Collected
		CrimeType	Number	15	-	Type of Crime
		ModusOperandi	Varchar2	30	-	Criminal's Style of Commiting Crime
		PoliceID	Number	5	-	Registering Officer's ID
7	Prisoner	PrisonerID	Number	5	-	Auto Generated Prisoner ID
		CriminalID	Number	5	-	Associated Criminal ID For Reference
		Name	Varchar2	20	-	Convict's Name
		CaseID	Number	5	-	Associated Case ID
		ImpDate	Date		-	Date of Imprisonment
		RelDate	Date		-	Date of Release (Past or Future)
		HeatLevel	Number	1	1	How dangerous a criminal is (with 1 being lowest)
		Status	Varchar2	10	Imprisoned	Current Status of Prisoner

Table 3.2 Data Dictionary

3.3.4 DATA FLOW DIAGRAM (DFD)

Context Level (Level 0) DFD:-

The diagram below represents the level 0 or the basic process of the system where there are two logins in the form of Admin or User and the remaining is the process of the Police Control System

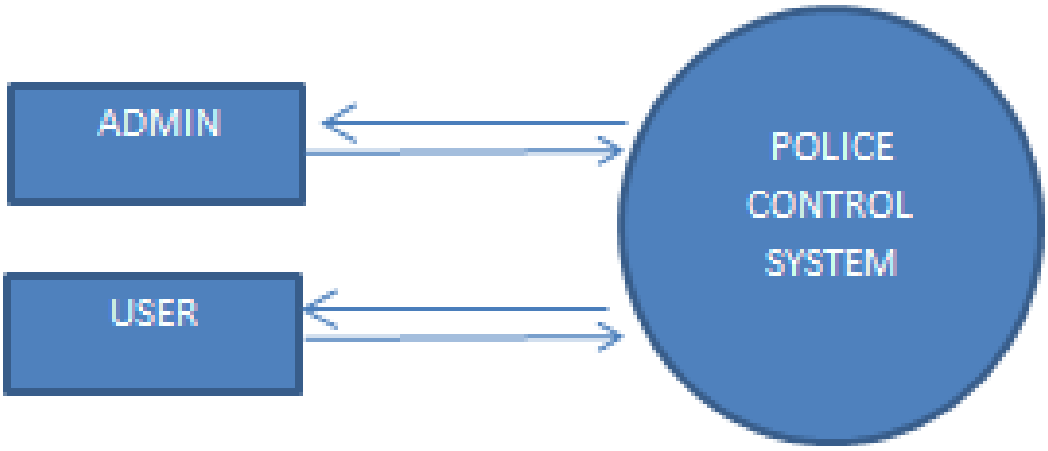

Fig 3.4 Level 0 Diagram

Level 1 DFD All modules:-

The diagram below shows a deeper view of the data flow as to the access to the different tables and the flow to the various modules.

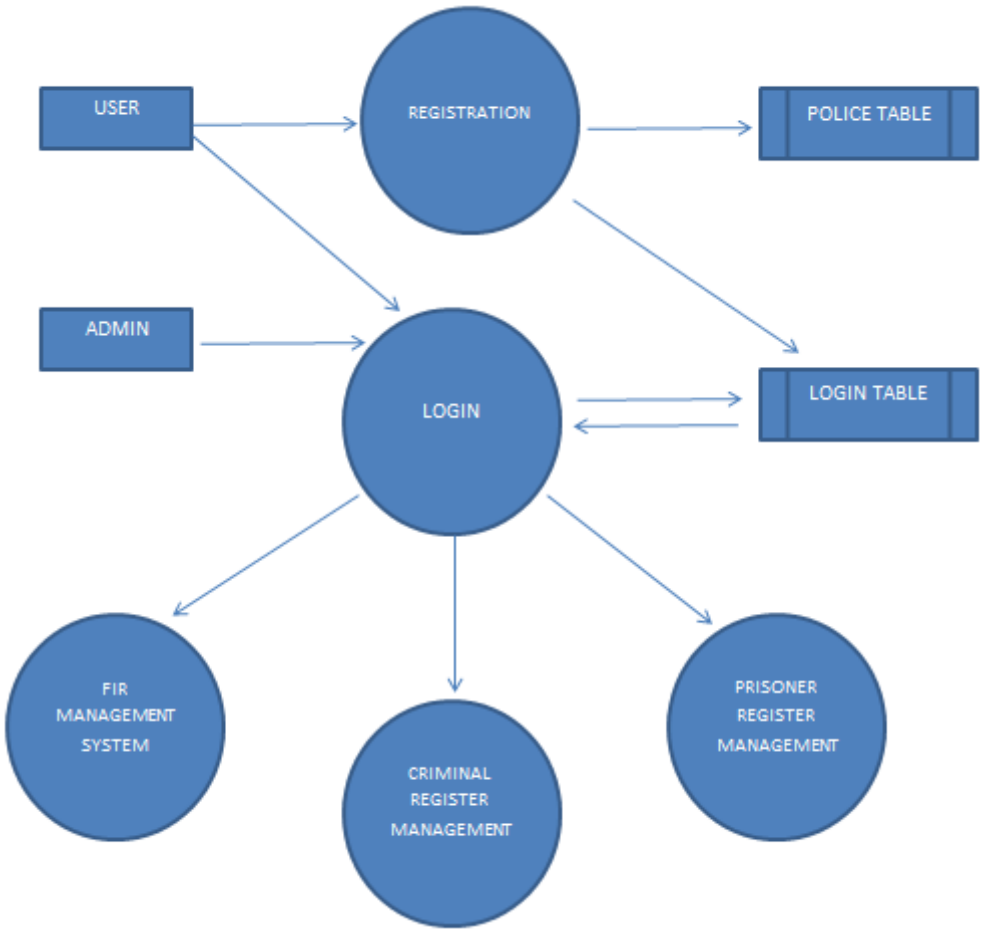

Fig 3.5 Level 1 Diagram

Level 2 DFD All modules:-

The Diagram below represents the data flow in the whole system including the tables associated with each and every module.

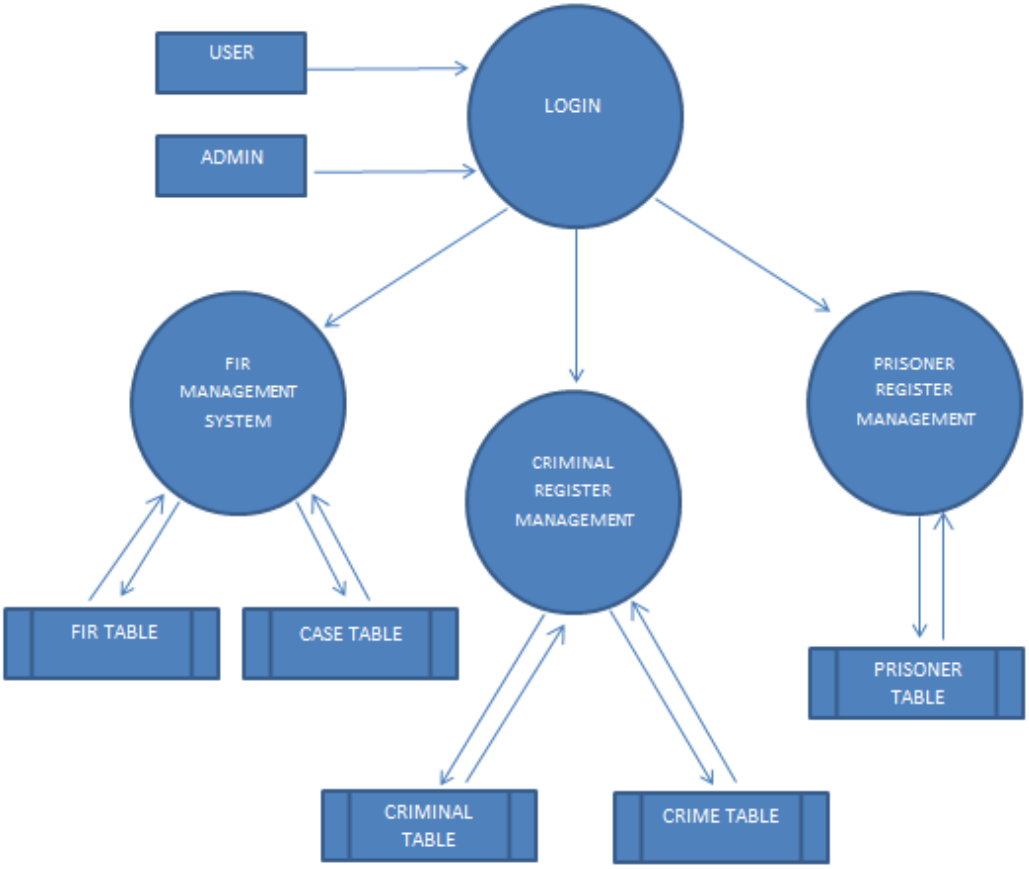

Fig- 3.6 Level 2 Diagram

Level 3 DFD:-

FIR Register Management:-

The diagram below shows the data flow between the various processes in the FIR management system.

Fig- 3.7 Level 3 Diagram FIR Management System

Level 3 DFD:-

Criminal Register Management:-

The diagram below shows the data flow between the various processes in the Criminal Management System.

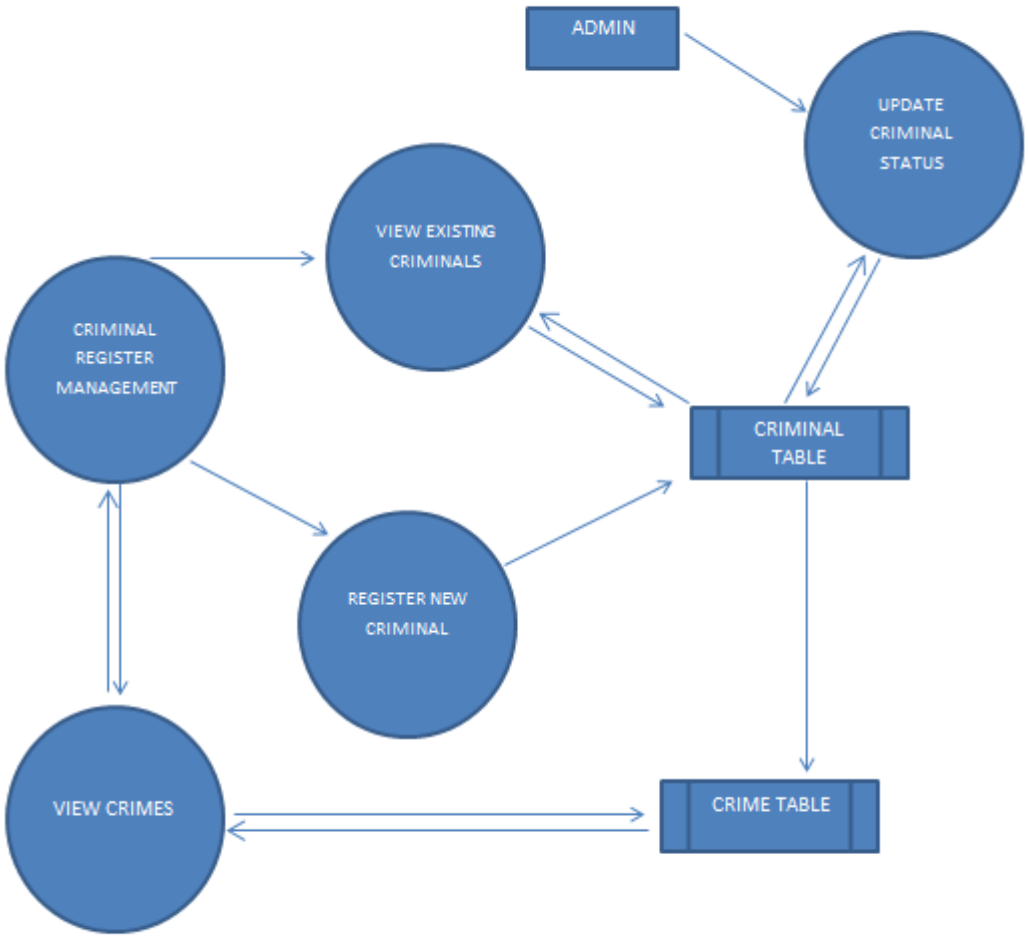

Fig- 3.8 Level 3 Diagram Criminal Management System

Level 3 DFD:-

Prisoner Register Management:-

The diagram below shows the data flow between the various processes in the Prisoner Management System.

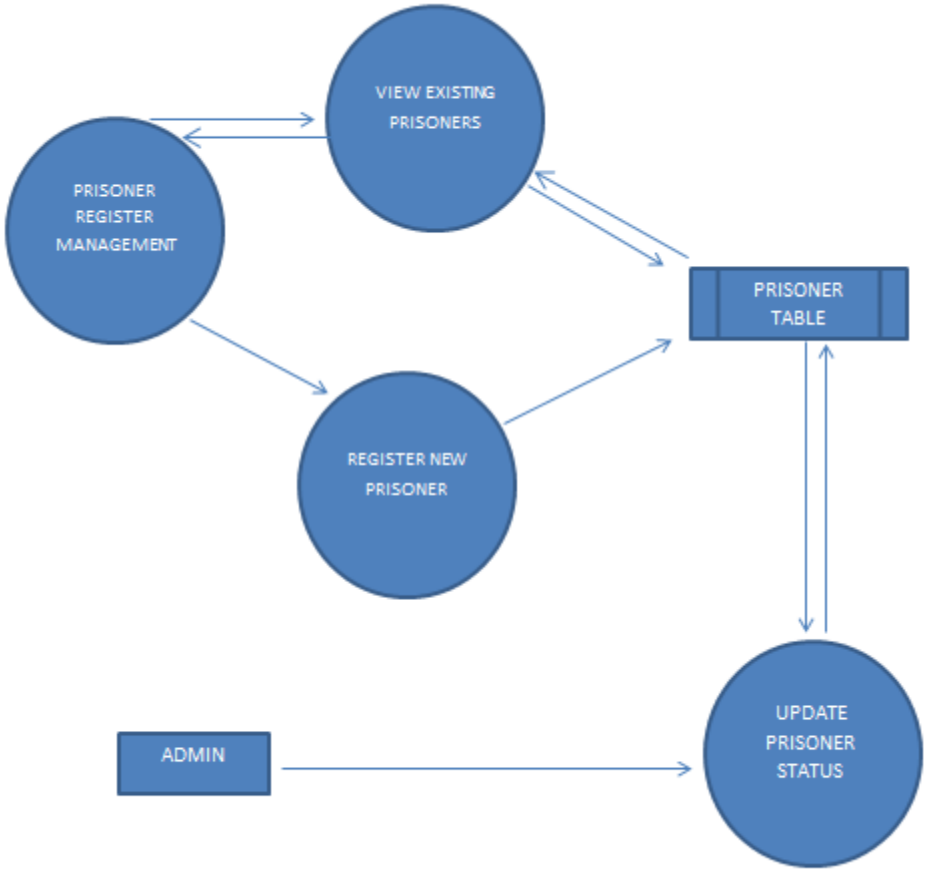

Fig- 3.9 Level 3 Diagram Prisoner Management System

3.3.5 INTERFACE DESIGN

User Interface Screen Design:

These screens show how the proposed software will look like.

Login module:

The Login Screen which helps the user login to the software.

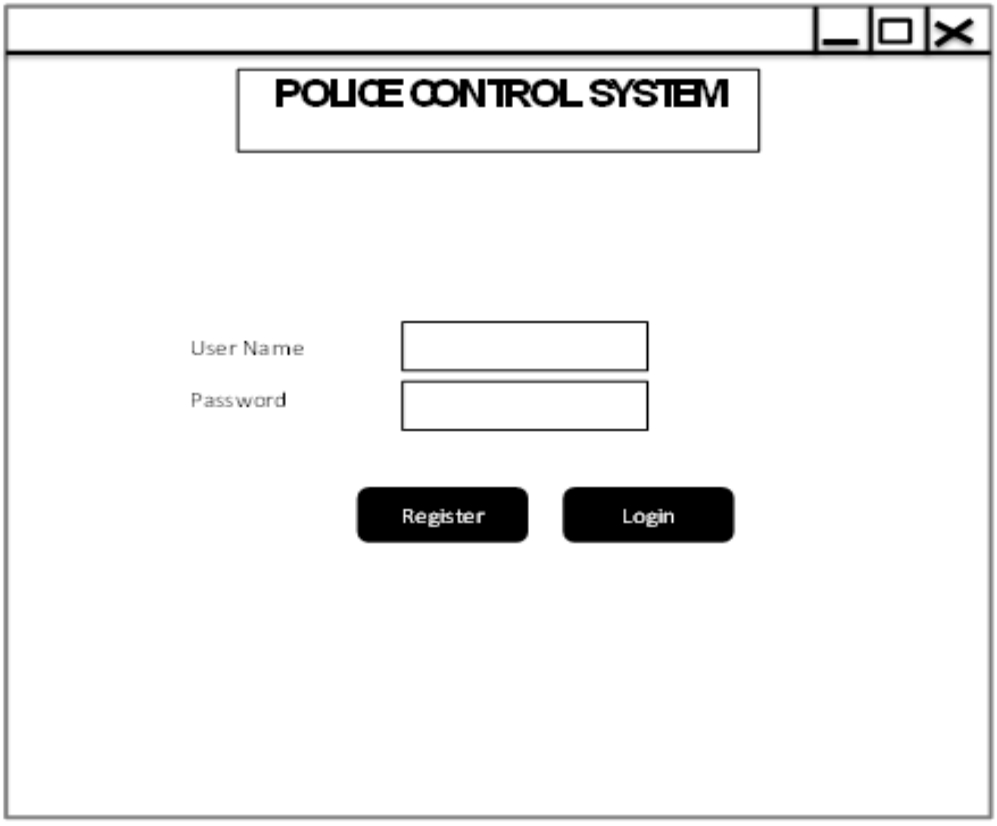

Fig 3.10 Login module

Dashboard:

The screen which helps the user to move to different modules.

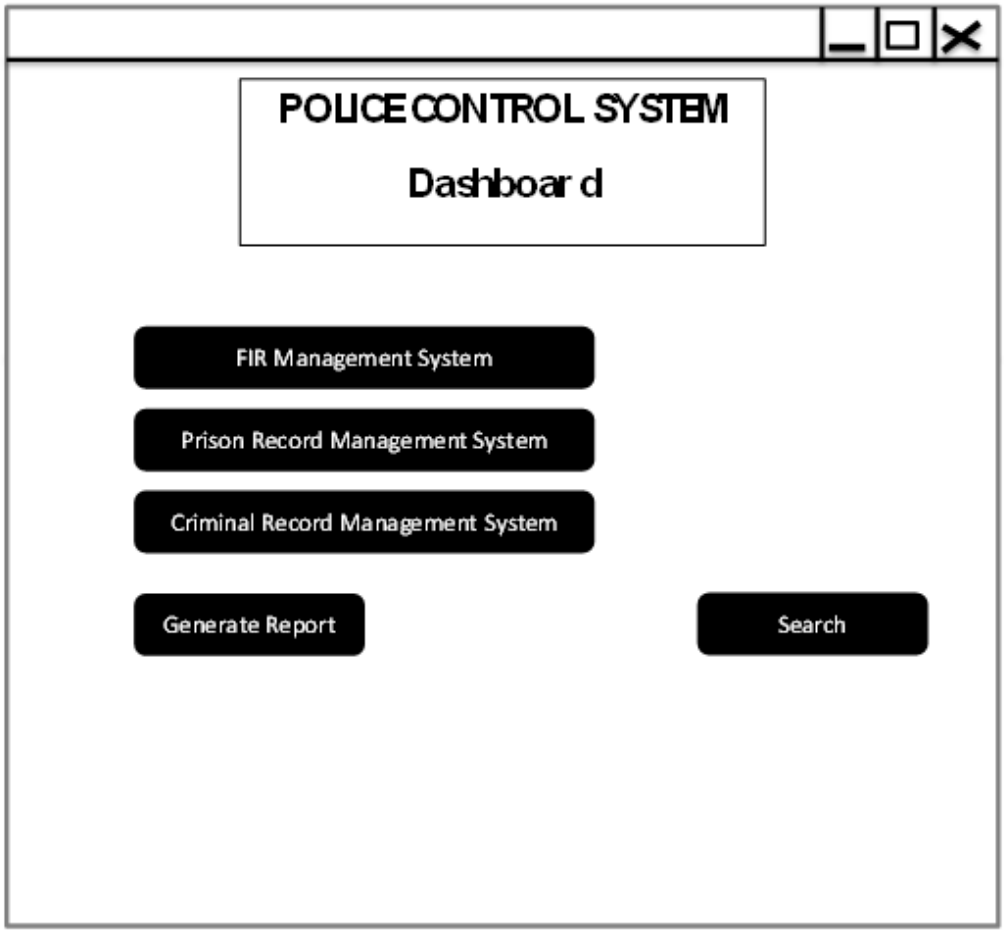

Fig 3.11 Dashboard

FIR Management system:

This screen helps the User to register new FIRs, access pending and closed FIRs and also pending and closed cases.

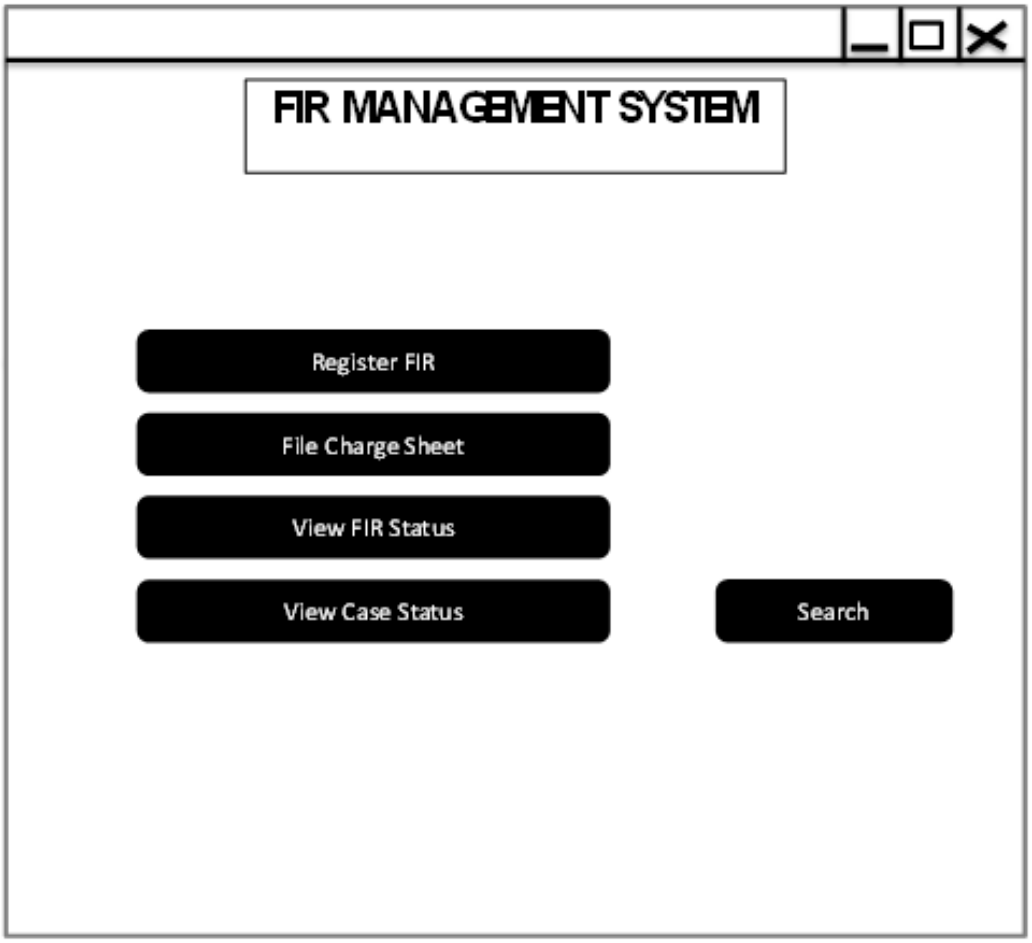

Fig 3.12 FIR management system

Criminal Register Management:

This screen helps the user to register new criminals, access criminals database and also access the crimes they have committed.

Fig 3.13 Criminal Management System

Prisoner Management System:

This screen helps the User register new prisoner, access their imprisonment details such as date of imprisonment, location of imprisonment and date of release.

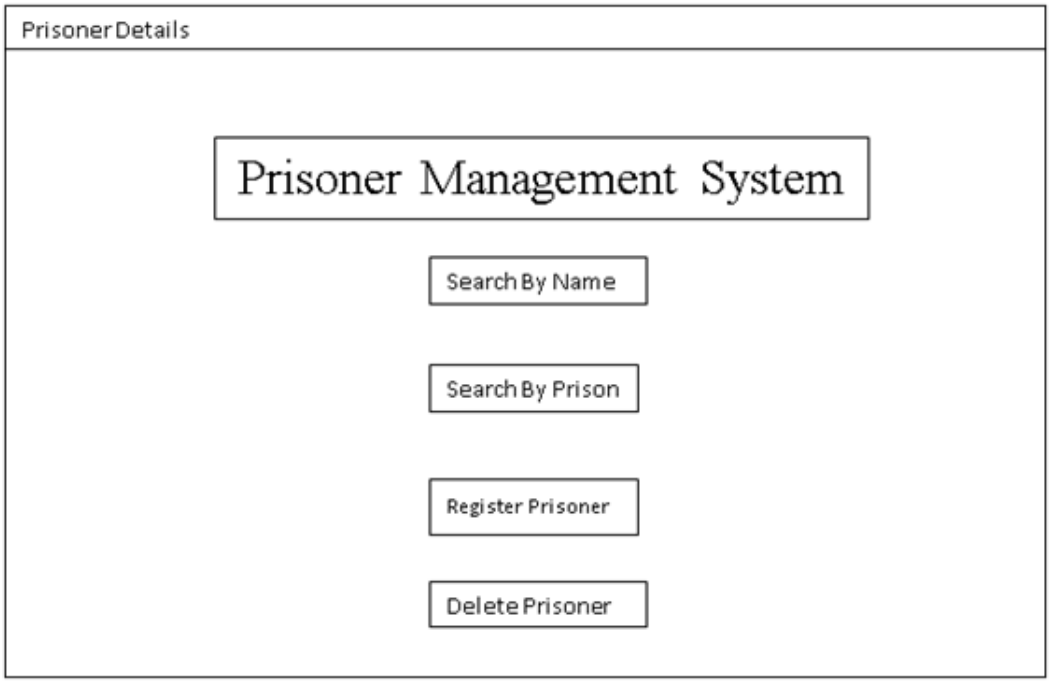

Fig 3.14 Prisoner Management System

4. IMPLEMENTATION

4.1 CODING STANDARD

SPLASH

```
Public Class Splash
   Dim lb1 As New ListBox()

 Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick
      If ProgressBar1.Value < 100 Then
         ProgressBar1.Value = ProgressBar1.Value + 10
      Else
         Timer1.Enabled = False
         Me.Hide()
         Login.Show()
      End If
   End Sub

  Private Sub ProgressBar1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles ProgressBar1.Click
   End Sub

   Private Sub Splash_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
      OpenFileDialog1.FileName = System.Reflection.Assembly.GetExecutingAssembly().Location
   End Sub

End Class
```

LOGIN

```
Imports System.Data
Imports Oracle.DataAccess.Client
Imports Oracle.DataAccess.Types

Public Class Login
    Public user As Integer
    Dim oradb As String = "Data Source=(DESCRIPTION=" _
        + "(ADDRESS=(PROTOCOL=TCP)(HOST=AKSHAY)(PORT=1521))" _
        + "(CONNECT_DATA=(SERVICE_NAME=ORCL)));" _
        + "User Id=scott;Password=tiger;"
    Dim conn As New OracleConnection(oradb)
    Private Sub Login_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles loginbtn.Click
        If TextBox1.Text = "" Or TextBox2.Text = "" Then
            MsgBox("Please Enter User ID And Password.")
        Else
            conn.Open()
            Dim sql As String = "select adminapp from login where username = '" + TextBox1.Text + "' and password='" + TextBox2.Text + "'"
            Dim cmd As New OracleCommand(sql, conn)
            cmd.CommandType = CommandType.Text
            Try
                Dim dr As OracleDataReader = cmd.ExecuteReader()
                cmd = New OracleCommand(sql, conn)
                If dr.Read() Then
                    If Val(dr(0)) = 1 Then
                        MsgBox("Admin Access Granted")
                        user = 1
                        Dashboard.Show()
                        Me.Close()
```

```
            ElseIf Val(dr(0)) = 2 Then
                MsgBox("User Acess Granted")
                Dashboard.Show()
                Me.Close()
            Else
                MsgBox("Admin Approval Pending")

            End If
        Else
            MsgBox("Access Denied")
        End If
    Catch ex As Exception
        MsgBox("Access Denied")
    End Try
    conn.Close()
  End If
 End Sub
 Private Sub Register_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles register.Click
  NewUserReg.Show()
  Me.Close()
 End Sub
 Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Timer1.Tick
currtime.Text = Now.Hour.ToString + ":" + Now.Minute.ToString + ":" +
Now.Second.ToString
 End Sub
 Private Sub Login_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
  currdate.Text = Now.Date
```

```
        currtime.Text = Now.Hour.ToString + ":" + Now.Minute.ToString + ":" + Now.Second.ToString
        Timer1.Start()
        Timer2.Start()
    End Sub
    Private Sub Timer2_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer2.Tick
        If Label4.BackColor = Color.FromArgb(0, 64, 0) Then
            Label4.BackColor = Color.DarkRed
        Else
            Label4.BackColor = Color.FromArgb(0, 64, 0)
        End If
        If Label5.BackColor = Color.FromArgb(0, 64, 0) Then
            Label5.BackColor = Color.DarkRed
        Else
            Label5.BackColor = Color.FromArgb(0, 64, 0)
        End If
        If Label6.BackColor = Color.FromArgb(0, 64, 0) Then
            Label6.BackColor = Color.DarkRed
        Else
            Label6.BackColor = Color.FromArgb(0, 64, 0)
        End If
        If Label7.BackColor = Color.FromArgb(0, 64, 0) Then
            Label7.BackColor = Color.DarkRed
        Else
            Label7.BackColor = Color.FromArgb(0, 64, 0)
        End If
    End Sub
End Class
```

FILE REPORT

```
Imports System.Data
Imports Oracle.DataAccess.Client
Imports Oracle.DataAccess.Types

Public Class FileReport
    Dim dat As Date
    Dim oradb As String = "Data Source=(DESCRIPTION=" _
        + "(ADDRESS=(PROTOCOL=TCP)(HOST=AKSHAY)(PORT=1521))" _
        + "(CONNECT_DATA=(SERVICE_NAME=ORCL)));" _
        + "User Id=scott;Password=tiger;"
    Dim conn As New OracleConnection(oradb)
    Dim sql As String
    Dim cmd As New OracleCommand(sql, conn)
    Dim idtype As String

    Private Sub FileReport_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
        reportid.Text = GetRandom(100, 999)
        policeid.Enabled = False
        psid.Enabled = False
        datee.Enabled = False
        Panel1.Hide()
        Panel2.Show()
        Panel3.Hide()
        datee.Text = System.DateTime.Now.ToString(("dd-MMM-yyyy"))
        ' datee.Text = dat
        policeid.Text = Dashboard.id
        sql = "select psid from police where policeid='" + policeid.Text + "'"
        Try
            connection()
```

```
        Dim dr As OracleDataReader = cmd.ExecuteReader()
        dr.Read()
        psid.Text = dr(0)
    Catch ex As Exception
        MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
    End Try
    conn.Close()
End Sub

Private Sub Next1_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Button1.Click
    If nam.Text = "" Or add.Text = "" Or district.Text = "" Or occ.Text = "" Then
        MsgBox("Please Fill In All The Details.")
    Else
        If RadioButton1.Checked = True Then
            idtype = RadioButton1.Text
            Panel3.Show()
            Panel2.Hide()
        ElseIf RadioButton2.Checked = True Then
            idtype = RadioButton2.Text
            Panel3.Show()
            Panel2.Hide()
        ElseIf RadioButton3.Checked = True Then
            idtype = RadioButton3.Text
            Panel3.Show()
            Panel2.Hide()
        ElseIf RadioButton4.Checked = True Then
            idtype = RadioButton4.Text
            Panel3.Show()
            Panel2.Hide()
        ElseIf RadioButton5.Checked = True Then
```

```
            idtype = RadioButton5.Text
            Panel3.Show()
            Panel2.Hide()
        Else
            MsgBox("Please select Identification Type.")
        End If
    End If
End Sub

Private Sub Next2_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button4.Click
    If details.Text <> "" Then
        Panel1.Show()
        Panel3.Hide()
    Else
        MsgBox("Please Fill In The Details.")
    End If

End Sub

Public Function GetRandom(ByVal Min As Integer, ByVal Max As Integer) As Integer
    Dim Generator As System.Random = New System.Random()
    Return Generator.Next(Min, Max)
End Function

Private Function connection()
    cmd.CommandText = sql
    cmd.CommandType = CommandType.Text
    conn.Open()
    cmd.ExecuteNonQuery()
```

```
        cmd.CommandType = CommandType.Text
        Return Nothing
    End Function

    Private Sub Cancel_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click
        Dashboard.Panel2.Controls.Clear()
        Dim fms As New FIRMainScreen
        fms.TopLevel = False
        Dashboard.Panel2.Controls.Add(fms)
        fms.Show()
        Me.Close()
    End Sub

    Private Sub Register_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button6.Click
        sql = "insert into filereport values(" + reportid.Text + ",'" + nam.Text + "','" + add.Text + "','" + idtype + "'," + id.Text + ",'" +
            occ.Text + "','" + district.Text + "'," + pno.Text + ",'" + details.Text + "','" + policeid.Text + "'," + psid.Text + ",'" + datee.Text + "')"
        Try
            connection()
            MsgBox("Report Registered.")
        Catch ex As Exception
            MsgBox("Server Down." + ex.Message)
        End Try

    End Sub

    Private Sub id_KeyPress(ByVal sender As Object, ByVal e As System.Windows.Forms.KeyPressEventArgs) Handles id.KeyPress
```

```
        e.Handled = True
        If IsNumeric(e.KeyChar) Or e.KeyChar = Chr(8) Then e.Handled = False

    End Sub

    Private Sub pno_KeyPress(ByVal sender As Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs) Handles pno.KeyPress
        e.Handled = True
        If IsNumeric(e.KeyChar) Or e.KeyChar = Chr(8) Then e.Handled = False

    End Sub
End Class
```

NEW USER REGISTRATION

```
Imports System.Data
Imports Oracle.DataAccess.Client
Imports Oracle.DataAccess.Types

Public Class NewUserReg
    Dim oradb As String = "Data Source=(DESCRIPTION=" _
        + "(ADDRESS=(PROTOCOL=TCP)(HOST=AKSHAY)(PORT=1521))" _
        + "(CONNECT_DATA=(SERVICE_NAME=ORCL)));" _
        + "User Id=scott;Password=tiger;"
    Dim conn As New OracleConnection(oradb)
    Dim ddd, mmm, yyy As String

    Private Sub NewUserReg_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
        policeid.Text = FIR.GetRandom(100, 999)
        MonthCalendar1.MaxDate = Today
        Label1.Text = "Police Registration"
        sex.Items.Add("Male")
        sex.Items.Add("Female")
    End Sub

    Private Sub Register_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Register.Click
        If pname.Text = "" Or ddd = "" Or mmm = "" Or yyy = "" Or sex.Text = "" Or position.Text = "" Or addr.Text = "" Or phone.Text = "" Or psid.Text = "" Then
            MsgBox("Please Enter All The Details. For Further Details Contact Administrator.")
        Else
            Dim sqlins = "insert into police values(" + policeid.Text + ",'" + pname.Text + "'," + ddd + "," + mmm + "," + yyy + ",'" + sex.Text _
```

```
        + "'," + position.Text + "'," + addr.Text + "'," + phone.Text + "," + psid.Text +
")"
        Dim cmd As New OracleCommand(sqlins, conn)
        cmd.CommandText = sqlins
        cmd.CommandType = CommandType.Text
        conn.Open()
        Try
            cmd.ExecuteNonQuery()
            'MsgBox("Registration Succesful!")
            Dim sql = "insert into login values('" + policeid.Text + "'," + policeid.Text +
"',0)"
            Dim cmd1 As New OracleCommand(sql, conn)
            cmd1.CommandText = sql
            cmd1.CommandType = CommandType.Text
            Try
                cmd1.ExecuteNonQuery()
                MsgBox("Registration Succesful! Use Your PoliceID As UserID And
Password! Your PoliceID is:" + policeid.Text)
            Catch ex As Exception
                MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
            End Try
            Login.Show()
            Me.Close()
        Catch ex As Exception
            MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
            Login.Show()
            Me.Close()
        End Try
        conn.Close()
    End If
End Sub
```

```
    Private Sub Cancel_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Cancel.Click
        Login.Show()
        Me.Close()
    End Sub

    Private Sub phone_KeyPress(ByVal sender As Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs) Handles phone.KeyPress
        e.Handled = True
        If IsNumeric(e.KeyChar) Or e.KeyChar = Chr(8) Then e.Handled = False
    End Sub

    Private Sub SelDate_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Button1.Click
        If MonthCalendar1.Visible = True Then
            MonthCalendar1.Visible = False
            ddd = MonthCalendar1.SelectionRange.Start.Day
            mmm = MonthCalendar1.SelectionRange.Start.Month
            yyy = MonthCalendar1.SelectionRange.Start.Year
            Label10.Text = ddd + "/" + mmm + "/" + yyy
            Label10.Visible = True
            Button1.Text = "Show Calendar"
        Else
            MonthCalendar1.Visible = True
            Button1.Text = "Select Date"
            Label10.Visible = False
        End If
    End Sub
End Class
```

NEW USER REQUESTS

```
Imports Oracle.DataAccess.Client
Imports Oracle.DataAccess.Types
Imports System.Data

Public Class NewUserReqs
   Dim oradb As String = "Data Source=(DESCRIPTION=" _
       + "(ADDRESS=(PROTOCOL=TCP)(HOST=AKSHAY)(PORT=1521))" _
       + "(CONNECT_DATA=(SERVICE_NAME=ORCL)));" _
       + "User Id=scott;Password=tiger;"
   Dim conn As New OracleConnection(oradb)
   Dim sql
   Dim cmd As New OracleCommand(sql, conn)

   Private Sub NewUserReqs_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
      sql = "select username from login where adminapp=0"
      cmd.CommandText = sql
      cmd.CommandType = CommandType.Text
      conn.Open()
      Try
         cmd.ExecuteNonQuery()
         cmd.CommandType = CommandType.Text

         Dim dr As OracleDataReader = cmd.ExecuteReader()
         While dr.Read()
            ComboBox1.Items.Add(dr.Item("username"))
         End While
      Catch ex As Exception
         MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
      End Try
```

```
        conn.Close()
        If ComboBox1.Text = "" Then
            Button1.Enabled = False
            Button2.Enabled = False
        End If
    End Sub

    Private Sub Users_TextChanged(ByVal sender As Object, ByVal e As
System.EventArgs) Handles ComboBox1.TextChanged
        sql = "select name,policeid,position,psid from police where policeid='" +
ComboBox1.Text + "'"
        cmd.CommandText = sql
        cmd.CommandType = CommandType.Text
        conn.Open()
        Try
            cmd.CommandType = CommandType.Text
            Dim dr As OracleDataReader = cmd.ExecuteReader()
            cmd.ExecuteNonQuery()
            If dr.Read Then
                pname.Text = dr("name")
                policeid.Text = dr("policeid")
                position.Text = dr("position")
                psid.Text = dr("psid")
            End If
        Catch ex As Exception
            MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
        End Try
        conn.Close()
    End Sub
```

```
Private Sub GrantAdmin_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    sql = "update login set adminapp=1 where username='" + ComboBox1.Text + "'"
    cmd.CommandText = sql
    cmd.CommandType = CommandType.Text
    conn.Open()
    Try
        cmd.CommandType = CommandType.Text
        Dim dr As OracleDataReader = cmd.ExecuteReader()
        cmd.ExecuteNonQuery()
        MsgBox("Approval Succesful!")
        ComboBox1.Items.Remove(ComboBox1.SelectedItem)
        'ComboBox1.Text = ""
        ComboBox1.Refresh()
        pname.Text = ""
        policeid.Text = ""
        position.Text = ""
        psid.Text = ""
    Catch ex As Exception
        MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
    End Try
    conn.Close()
    If ComboBox1.Text = "" Then
        Button1.Enabled = False
        Button2.Enabled = False
    End If
End Sub

Private Sub GrantUser_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click
    sql = "update login set adminapp=2 where username='" + ComboBox1.Text + "'"
```

```
        cmd.CommandText = sql
        cmd.CommandType = CommandType.Text
        conn.Open()
        Try
            cmd.CommandType = CommandType.Text
            Dim dr As OracleDataReader = cmd.ExecuteReader()
            cmd.ExecuteNonQuery()
            MsgBox("Approval Succesful!")
            ComboBox1.Items.Remove(ComboBox1.SelectedItem)
            'ComboBox1.Text = ""
            ComboBox1.Refresh()
            pname.Text = ""
            policeid.Text = ""
            position.Text = ""
            psid.Text = ""
        Catch ex As Exception
            MsgBox("Server Down. Please try again later : Error (" & ex.Message & ")")
        End Try
        conn.Close()
    End Sub

    Private Sub Cancel_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Button3.Click
        Dashboard.Show()
        Me.Close()

    End Sub

    Private Sub Users_SelectedIndexChanged(ByVal sender As System.Object, ByVal e
As System.EventArgs) Handles ComboBox1.SelectedIndexChanged
        If ComboBox1.Text <> "" Then
```

```
            Button1.Enabled = True
            Button2.Enabled = True
        End If
    End Sub
End Class
```

4.2 SCREENSHOTS

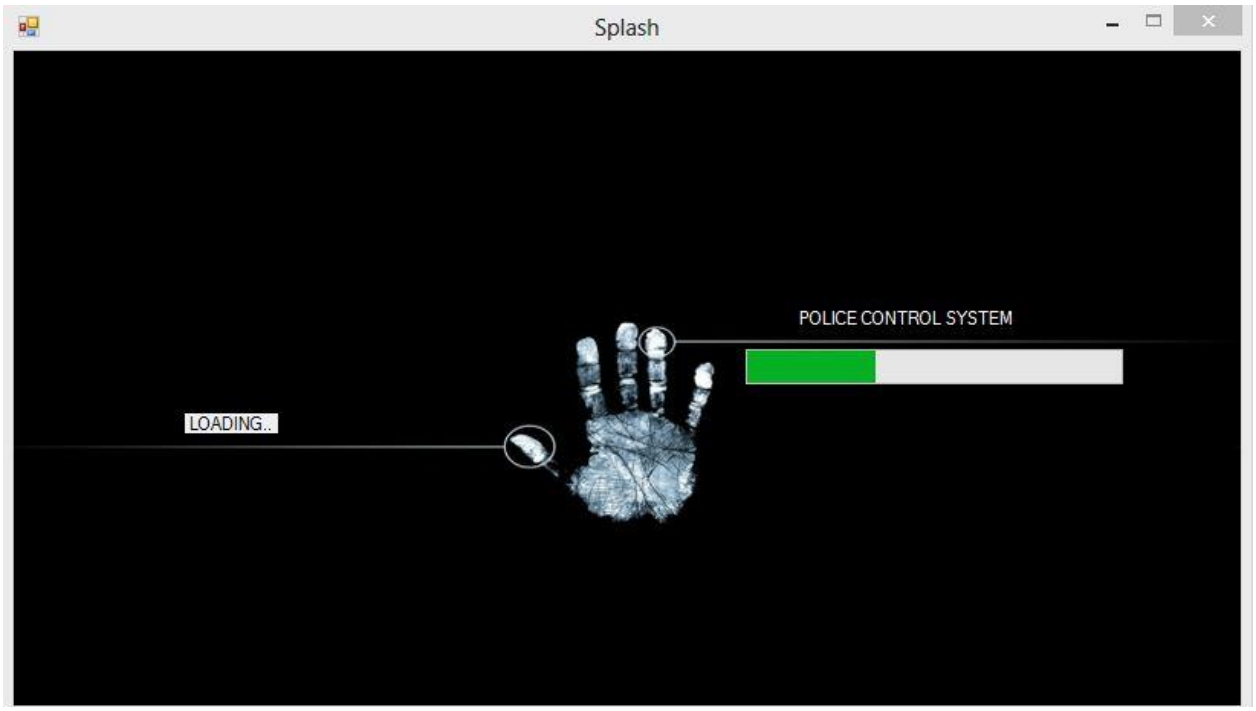

Fig 4.1 Splash screen

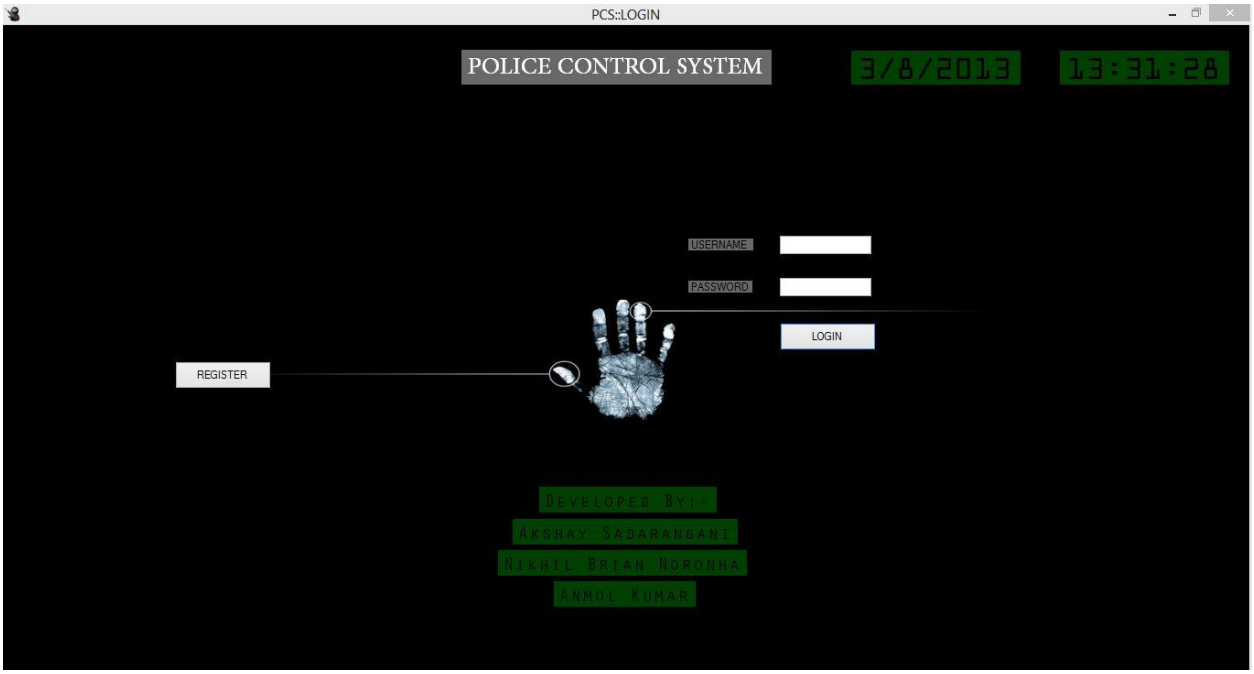

Fig 4.2 Login screen

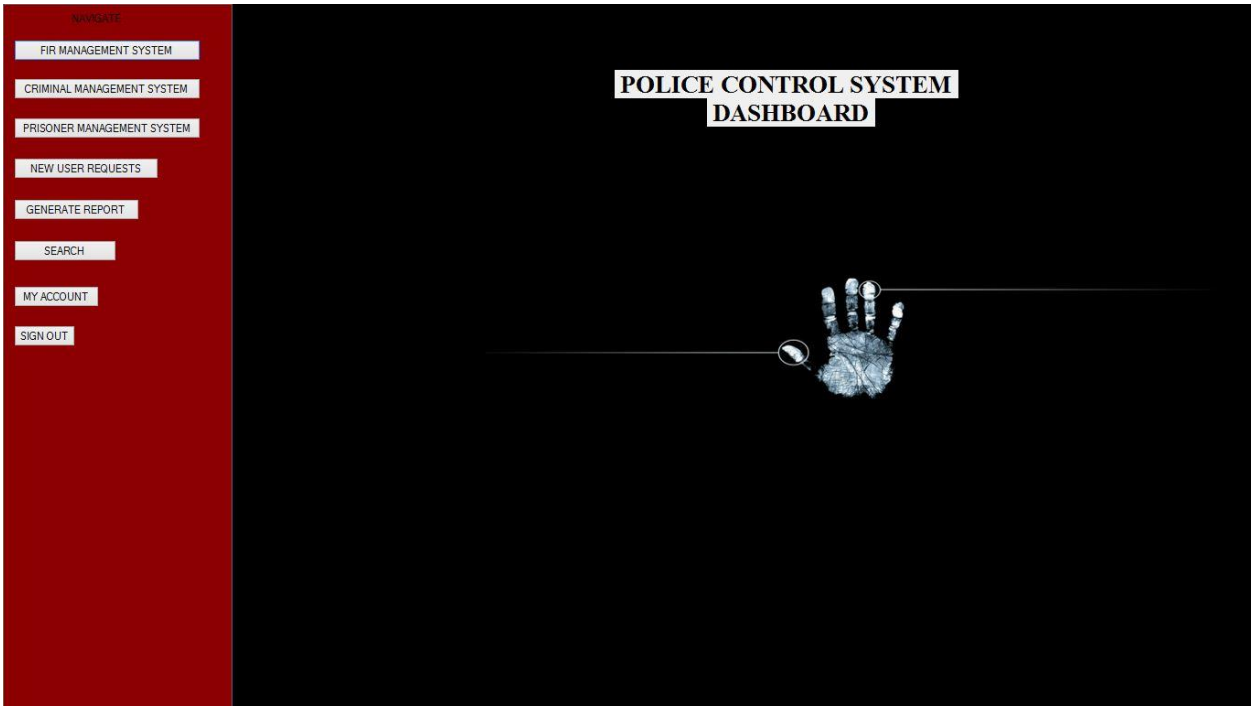

Fig 4.3 Dashboard

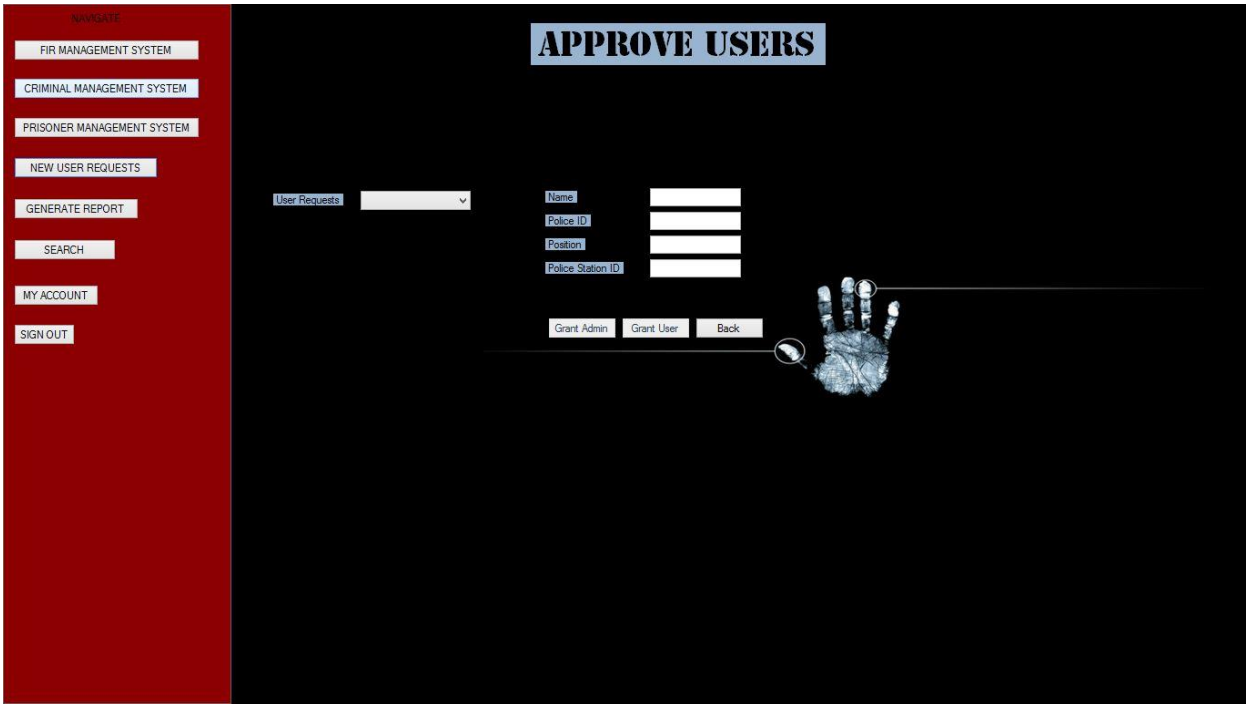

Fig 4.4 Approve User Requests

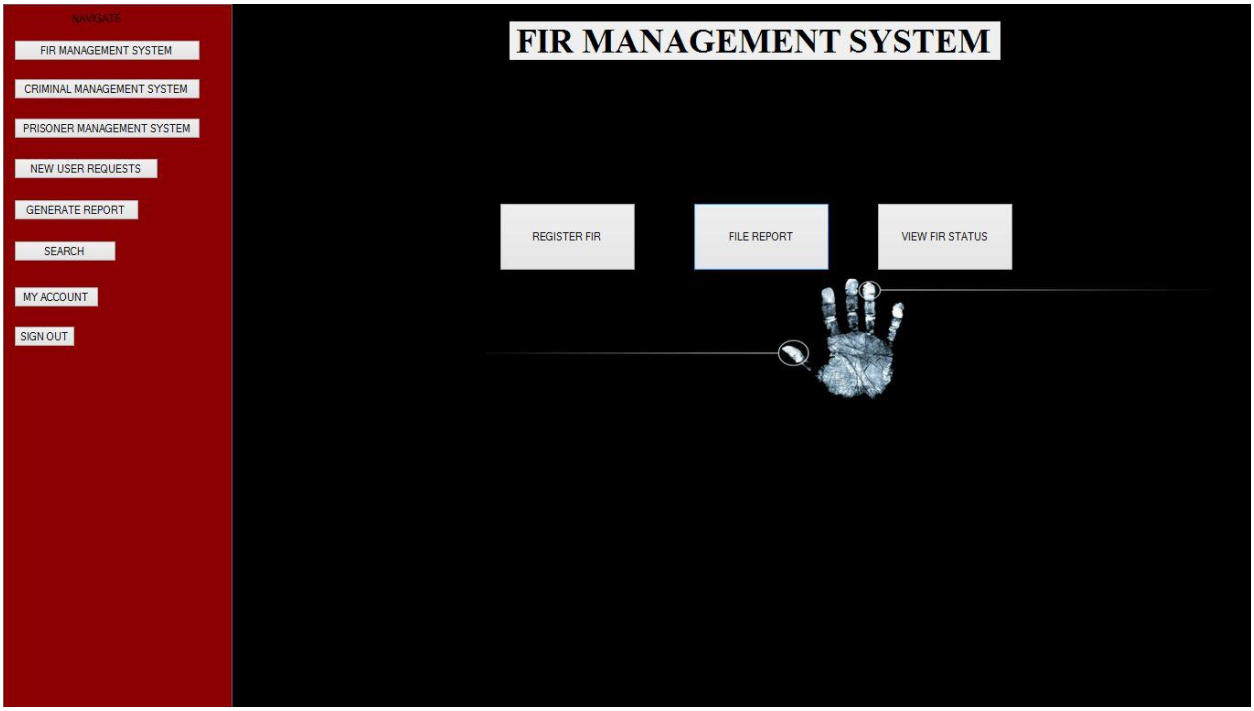

Fig 4.5 FIR management system

Fig 4.6 Criminal Register Management

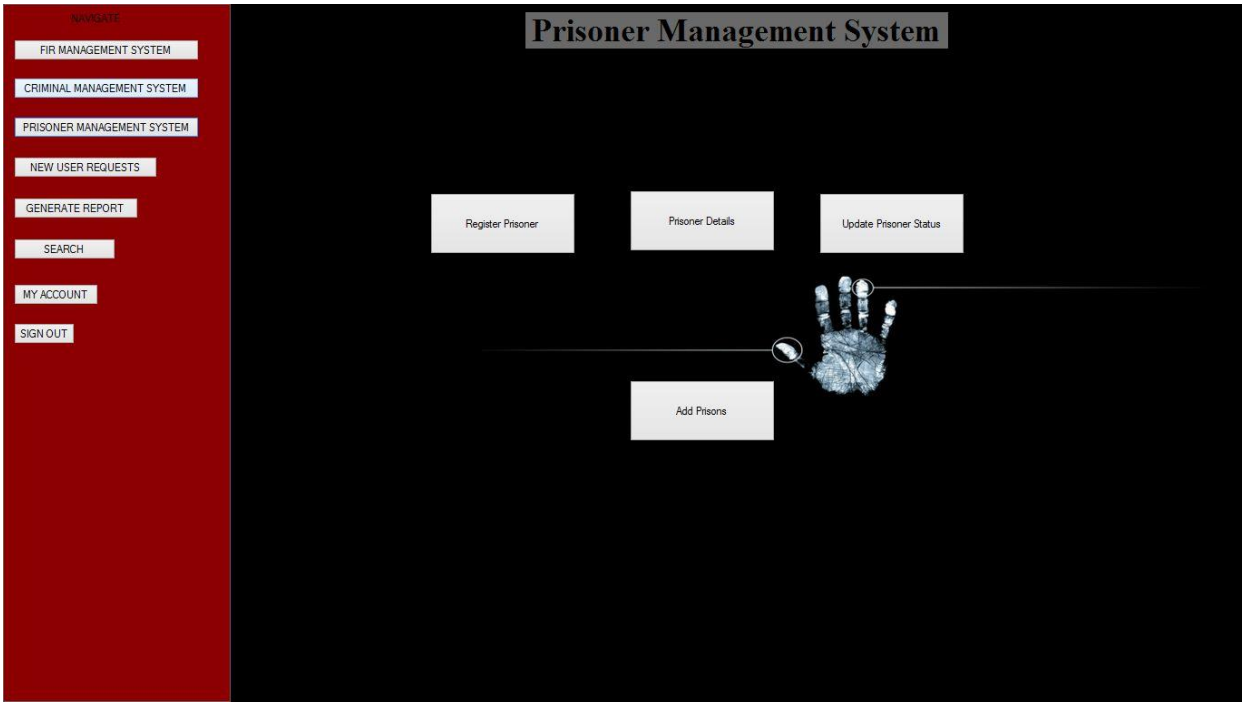

Fig 4.7 Prisoner Management System

Fig 4.8 My account

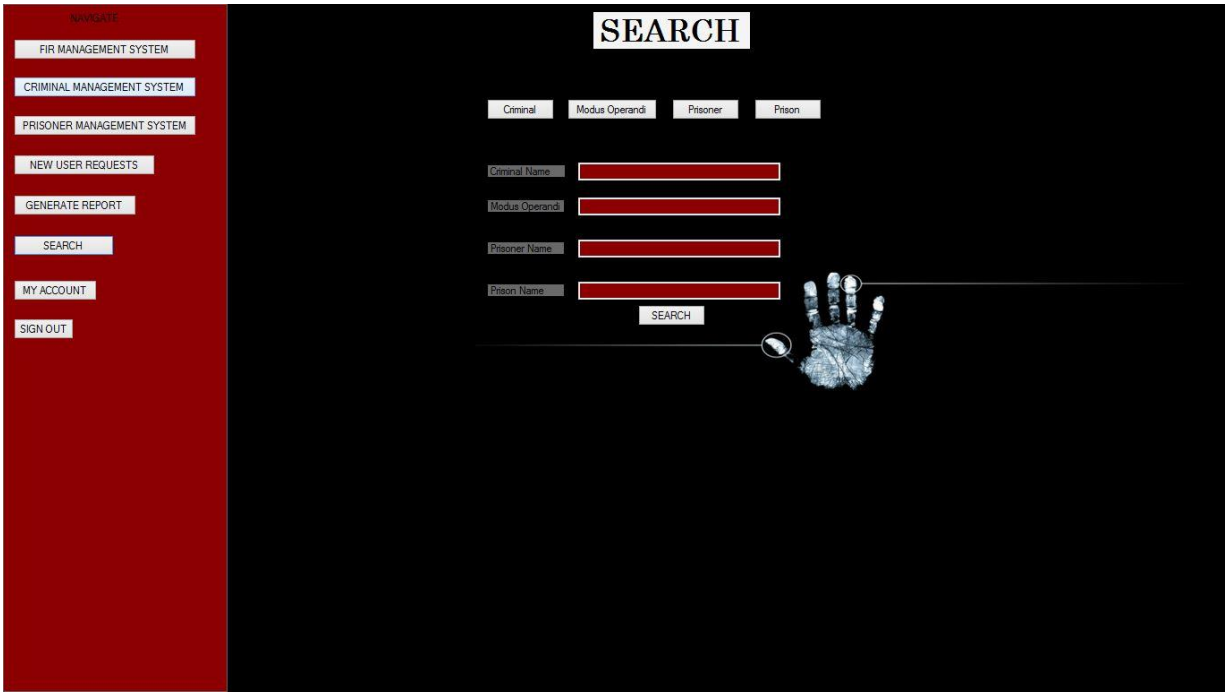

Fig 4.9 Search module

5. TESTING

5.1 TEST CASES

- **The Syntactic Test**

1. Are all mandatory text fields are entered?
2. Buttons conduct desired functions?
3. Is the data fetched correct?
4. Is the data stored correct?
5. Is there enough screen space to display all contents?
6. Is everything displayed in the correct manner?
7. Are all buttons aligned with their labels?
8. Are all labels on command buttons correct?
9. Are similar buttons named the same?
10. Does the program switch quickly between different windows?
11. Are objects in all related screens similarly placed?
12. Is there proper connectivity between the various forms?
13. Do all fields meet the description what is asked to do?

- **The Semantic Test**

1. When users login with correct information, the user gets a dashboard screen.
2. When the users fail in the authentication process, they are shown an error message.
3. If all mandatory fields are not entered, the user gets an error message indicating him to fill up all details.
4. The user must sign out to exit the application.
5. The user can change its password by going to My Account

5.2 TEST REPORT

Test Case	Project Response
Successful login credentials	User is granted access to the dashboard
Admin logs in	Granted access to update statuses and new users
User logs in	Granted restricted access to the system
Unapproved user logs in	Greeted with error message saying admin approval pending
All fields filled in registering a FIR	FIR is successfully registered and user is notified.
Incomplete entry of fields	User is asked to fill in all the fields
Cancelling registration	User is returned back to previous screen
User viewing FIR status	Users are shown current status of the selected FIR
Admin viewing FIR status	Admin is shown the current status of selected FIR and has option to update it
All fields filled in registering a criminal	Criminal record is stored successfully and user is notified
Incomplete entry of fields	User is asked to fill in all the fields
Cancelling registration	User is returned back to previous screen
Viewing crime details	Users are show existing crime files
All fields finned in registering a prisoner	Prisoner record is stored successfully with a reference to its criminal id
Incomplete entry of fields	User is asked to fill in all the fields
Cancelling registration	User is returned back to previous screen
Admin accesses new user requests	List box is updated with all user requests
Granting admin access to new user	User becomes Admin
Granting user access to new user	User is authorized
Clicking on search criteria	Respective text field is enabled for search criteria input
If search criteria finds results	User is displayed a list of clickable matches
User accesses my account option	User is shown its details and is given with the option to change password

Table 5.1 Test Report

6. CONCLUSION

The tedious process of the Indian Police administration of having a file based approach towards the storage and maintenance of its various records and hand written FIRs, Charge Sheets and Prisoner records have been kept in account while developing our project and with the use of Police Control System (PCS), the police will find it easy to store and even access all the records. Our DBMS software for the police department will solve the problems related to a file-based approach such as data inconsistency, data redundancy, data dependence, information sharing, concurrent access and various security issues such as unauthorized access, manipulation of records and hiding of information. Thus, Police Control System (PCS) shall help overcome such problems.

6.1 ADVANTAGES AND LIMITATIONS

6.1.1 ADVANTAGES

- Record based approach
- Better Security
- Overcome searching anomalies
- No Time loss
- User Friendly
- Can have multiple Admins and users
- Administrator has extra privileges
- Paper based registration of FIRs, Charge sheets and Prisoner records

6.1.2 LIMITATIONS

- It cannot be accessed over a network
- Limited to one police station only
- Requires proper training of the software to the user
- The most important limitation of the two-tier architecture is that it is not scalable, because each client requires its own database session.

6.2 FUTURE ENHANCEMENTS

Police Control System (PCS) uses the two-tier architecture and thus, it still has its share of limitations. With the advent of the internet, databases are usually stored online. Hence we have a lot of scope of development in our Police Control System, where in the future we can have the system be accessed on the internet or be made into a web application which will be very helpful to the police of the entire nation or even other countries on the basis of access and security. This will allow the police to be able to access any record of any crime or prisoner by accessing the database from any place.

We can even have a better access to all police records by adding another module viz. the police module which will help the admin or the users to have a view of all the police officials under them based oh hierarchy. This will help the user to have a better knowledge of all the cases and the police officials appointed to the specific case.

REFERENCES

[1] Michael Halvorson. *Microsoft Visual Basic 2010 Step by Step.* Microsoft Press, 2010

[2] G. Cornell, Jonathan Morrison joint, Gary Cornell *Programming VB.NET: A Guide for Experienced Programmers Special Edition.* Apress, 2011

[3] Kevin Loney, Oracle Database 10G : *The Complete Reference (with CD) 1st Edition.* Tata McGraw-Hill Education, 2004