

# PRISON MANAGEMENT SYSTEM

Project report submitted in partial fulfillment of the requirement for the degree  
of Bachelor of Technology

In

**Information Technology**

By

ParthSekhri (151479)

Under the supervision of

(Dr. Amit Kumar Jakhar)

To



Department of Computer Science & Engineering and Information Technology

**Jaypee University of Information Technology Waknaghat, Solan-173234,  
Himachal Pradesh**

# **CERTIFICATE**

## **Candidate's Declaration**

This is to certify that the work which is being presented in the report entitled “**Prison Management System**” in partial fulfillment of the requirements for the award of the degree of **Information Technology** submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology Waknaghat is an authentic record of our own work carried out under the supervision of **Dr. Amit Kumar Jakhar** (Assistant Professor, Grade II, Computer Science & Engineering Department).

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

**Parth Sekhri, 151479**

This is to certify that the above statement made by the candidates is true to the best of my knowledge.

**Dr. Amit Kumar Jakhar**  
**Assistant Professor (Grade II)**  
**Department of Computer Science**  
**Date:**

## **ACKNOWLEDGEMENT**

I would like to express special thanks of gratitude to my project supervisor **DR. Amit Kumar Jakhar** who helped me with everything needed for the successful completion of the project and his timely warnings which motivated us to do the project with complete eagerness and hard work and for the up to date information requirement for our project titled - **PRISON MANAGEMENT SYSTEM.**

I also want to give a whole sum of applaud to **JAYPEE UNIVERSITY OF INFORMATION AND TECHNOLOGY** for providing me with the latest technology required for our project and for the cooperation which was a necessity.

**Date:**

**Dr. Amit Kumar Jakhar**  
**(Assistant Professor)**

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## **ABSTRACT**

This project titled “Prison Management System” is built in the view of providing management software for handling the inner working of any small jail across the country. Since most popular jail in INDIA known as Tihar jail already provide certain recreational facilities and has a very strong management system for their working. However, in our research we found out that most of the jails in India does not have an inner proper management system for handling all the activities taking place in the inner premises of a jail and this could be improvised to a great extend and thus could be considered useful soon. This report is basically based on main five sections which include – Introduction and Actuation, Literature Review, Design Modules, Implementation, Benefits and Scalability. Introduction and Actuation deals with the details of facilities offered with aim of transformation of prisoners over the years of their sentence so that they don’t behave I the similar way they did before, it also elaborates the inspiration taken from Kiran Bedi, former IPS who had a vision of transforming criminals into civilized human beings. The next section- Literature Review contains details of 2 papers and 1 case study which we went through before creating design structure for our project.

The two papers were one of Texas Prison System and Mumbai Prison System for Arthur Jail Road to have a grasp of both national and international facilities regarding the subject. PRISMS- the Prison Management System for Goa was the case study which we went through because of the rave reviews which were given since its establishment. The third section entails the four main design modules for my project namely- Types of Tasks, Sentence Serving, Parole and Interview Handling, and Complaint Handling. It also contains the way these sections will be implemented and what types of features they will offer. The fourth section deals with the implementation of the project and the tools used and needed for the project. The fifth section shows the benefits of the software and how it will benefit and save time of the ongoing activities inside the jail premises. The last section is about how the project can be expanded to include additional features which could be designed better, new methodologies, and how it can be modified to different jail systems across the country.

## **ABBREVIATIONS**

- 1. PRIMS-** Prison management system
- 2. NGO-** Non-government organization
- 3. TDCJ-** Texas department of criminal justice
- 4. OPD-** Out patient department
- 5. GPR-**Government process reengineering
- 6. GEL-**Inspector general of prisons
- 7. GDBM-**GNU database management
- 8. ACID-**Atomic consistent isolated database



# **Chapter 1**

## **Introduction and Actuation**

### **1.1 Introduction**

Tihar was the first full secured security prison of INDIA run by State of Punjab. In 1967, control was given to the Capital Territory of Delhi. Beginning in 1985, more facilities were constructed, and security was tightened.

Under the rule of Kiran Bedi, when she was Inspector General of Prisons, she initiated several prison transformations for Tihar which included changing the name to Tihar Ashram. She also started a Various meditation program for both staff and inmates, so the health of inmates and staff wouldn't be sacrificed. Starting classes were inaugurated by S. N. Goenka. The Prison has also come up with an inmate who has passed the Indian Administrative Service civil service examinations which tell us that there were many educational reforms too.

Most of the criminals continue their higher education through distance education which was a very good and beautiful transformation. The campus placement drive was launched in 2012 for the rehabilitation of inmates which are about to complete their sentences. In 2014, a recruitment drive led to 70 inmates selected based on their good conduct, received job offers with salaries up to 45000 (US\$670) per month, from as many as 32 recruiters, which included educational institutions, NGOs and private companies

### **1.2 About the project**

Jails all over the world have transformed into a place of transformation and somewhat of educational institute in making. In India, the Tihar Jail has provided a lot of facilities for the inmates such as recreational facilities, educational facilities, panchayat systems,

psychological treatment, yoga and meditation, creative art therapy to help overall development and nourishment of inmates. Various bakery products, shirts, handlooms, paintings, etc. are available online under the brand name “TJ’s” for people to buy. These products are designed and manufactured by the inmates inside the jail premises. Also, a food court is established under the name “Tihar Food Court”, which has received rave reviews for the quality of food and gesture of inmates.

So, our project aims to create a management system for record management and automated task allocation of the inmates for efficient time utilization, cost minimization and to help the government convert convicts into civilized individuals.

The project serves three main objectives:

1. To deliver a system that covers all region of prison management from the admission to the release of the prisoner and connectivity/connection across jails; brings in administrative efficiency and sense of security; leads to prisoner empowerment in the jails.
2. Proper use of technology to bring transparency in the system and provide accurate implementation of rules and make data easily available to bring in efficient decision making.
3. To bring in full accuracy in the prison management is the key functional and operational areas, to overcome the manual or hand-written system and to bring in the advancement and use of new technology in the process with proper record keeping and make the work of staff much easier and smooth in day-to-day activity.

### **1.3 Actuation**

Kiran Bedi, national icon, and former IPS has a vision of better India and for all the people which come under the country no matter they are criminals or not. She wanted to improve the life of the criminals by self-motivation them developing their skills, educating them so they can feel the sense of responsibility and they do not resort to their former ways when their

period serving is over. This led to reformation of Tihar Jail, to Tihar Ashram. I would further like to contribute to the system by providing my software to the Government of India to help improve this initiation and the step forward of transformation of such people. In my belief, technology's primary purpose is to reach out all sections of society and help raise their standard of living.

## Chapter 2

### Literature Review

#### **2.1 Paper 1- *Prison, Prison Management Models and the Texas Prison System***

**Submitted By-** Gevana Lynn Salinas (Texas University- San Marcos, Dept. Of Political Science, Public Administration Program), Summer 2010

**Objective-** To find out the characteristics of the Texas Prison System as compared to previous differentiated model and the model Texas Prison System is currently using and hence form a new module.

#### **Abstract**

##### ***Purpose***

The first objective of this study is to describe the characteristics of the two previous prison system models and prison management models using school level literature. The second purpose is to conduct a research to identify which prison model and prison management model the Texas Department of Criminal Justice (TDCJ) is using in real to operate and manage the Texas Prison System. Finally, the study will present conclusions and recommendations for future research which could be very useful.

##### ***Methodology***

The methodology used in this research study is mostly document analysis. Documents and division mission statements were reviewed and retrieved from agency division overviews; agency budgets; an agency survey; and policy and procedure handbooks and manuals. These documents were used to implement the conceptual framework.

### ***Results***

The outcomes demonstrated the TDCJ donate the manage, in addition to possessions out of your Differentiated product and Duty type. That the TDCJ seems to function underneath the Differentiated product and can be regulated based around the search for your own undertaking. Policy the assignment announcements and procedure make clear this Texas Prison System's assignment. It's significantly exactly the exact very same at the time of each country cover and to restore back the offenders in society as taxpayers and successful law-abiding. Jail administrator's and the Texas Prison technique major aims is also to simply take good care and also always to keep up control, also restrain the offenders next procedure and policy.

### ***Contribution***

- Division of labor
- Efficient resource allocation
- Addition of professionals, doctors and social workers
- Interest group philosophies
- Re-location of ex-criminals

## ***2.2 Paper 2- Prison Management System for Arthur Road Jail***

**Submitted By-** Submitted by Rahul Singh, Sr. Consultant, KPMG, 2010

### ***Objective-***

To keep a transcript of inmates so the records are not lost, establishment/administrative functions, visitor's management, record of work allocation, record person's personal belongings.

## **Abstract**

Prison Department of Maharashtra has forced Prison Management System (PMS) in Mumbai center prison and Mumbai district prison, in the year 2011 with a vision to extend up PMS to all prisons in Maharashtra. However, due to many upcoming challenges the department is in the process of achieving of different options/solutions available to computerize different prisons in whole of Maharashtra. This case study provides experiences from the project, snapshot of various available PMS options and brief on the way forward for implementation of PMS at various other prisons all over Maharashtra.

## ***Contribution-***

- A client and server-based system is set up inside the prison premise with no or limited access to internet due to some security reasons.
- KTS Private Limited has provided all hardware components such as servers, desktops, printers, software licenses etc. at the current situation the contract of M/s KTS Computer Private Limited is nonexistent hence no hardware support is given.
- The PMS application is created by ACL, and computerized various functions such as record of prisoner right from starting to the end, establishment section, lab, pharmacy, OPD, ration for the canteen and laundry services. However, it may be called that computerization *of present drive process has been done without considering process reengineering prior to computerization of the process or sub-process*. As per the contract the IPR is owned by M/s ACL and the annual maintenance contract has been recently renewed and there was a time when no support was given by ACL.

## ***2.3 Case Study 1- Prison Management System (PRISMS) Proposition by the govt of goa about e-governance project.***

### **Submitted By-**

Osama Manzari, Social Entrepreneur, December 2012

## **Objective-**

To analyze PRISMS, implemented by Inspector General of Prisons all over goa.

## **Abstract-**

The Prisons the executives frameworks is otherwise called (PRISMS) which is a milestone of e-administration begun by Goa government which has been spearheading as well as significant in numerous such new companies in different states the extent that computerization and productivity of Prisons the board is concerned. Crystals is a successful ICT-empowered jail organization and the executives' framework with the point of giving a simple powerful and proficient component profiting the detainees and the cognizant jail division. This investigation plans to get front the significance of Government Process re building (GPR) in the matter of forcing ICT frameworks and the resultant advantages to partners.

Even the Prisons administration approaches will be known as (PRISMS) that is certainly a milestone of e governance initiated by Goa federal authorities that not just was but additionally essential in most startups in different nations so significantly as computerization and efficacy of Prisons direction is also concerned. PRISMS can be direction approach and an effective jail management together using the intent of delivering an easy effective and powerful mechanism profiting the prison section along with the offenders. This analysis intends to create about the front the value of govt. Procedure r e production (GPR) at the topic of imposing ICT techniques along with also the consequent advantages to stake holders.

Earlier PRISMS usage has demonstrated to us the key need period of jail oversaw in Goa bringing about overpowering enhancements in jail organization and in the everyday existences of the detainees. While PRISMS has turned out as a wellspring of extraordinary positive change among the partners, it has likewise held its reasonableness dependent on being low in expense.

However, PRISMS has had its own amount of challenges and limitations; for e.g., difficulty in motivating and overcoming minor issues for the staff coming because of the implementation of the new system, design of the system and deployment with 24 different modules, building network and conforming system foolproof and monitoring.

The objective of this case study is to study PRISMS, carried out in jails and judicial lock-ups across Goa with the help of the Office of Inspector General of Prisons. This research is divided into 5 major sections and focus is on detailed study on the pre-implementation condition of the project, the current status with respect to the proper functioning condition of the jails and benefits provided to the system, hardships and lessons faced during the implementation phase. In terms of methodology, every data was collected, including interviews of stakeholders, mainly the office of the Inspector General of Prisons, GEL – the agency that created and acted the solution, the prison management staff, and the officers working within the system as well as the inmates.

***Methodology-***

- Primary data collected from interviews with various stakeholders.
  
- The research which was done on this case study and the results which were given point out to positive impact of e-governance programs which has been set up by the government for the good being of the inmates.



## Chapter 3

### Design Modules

#### 3.1 Outline

This figure is showing outline of this module



FIGURE 3.1

## **3.2 Types of Tasks**

The tasks done by the prisoners is mainly divided into two categories-

### **3.2.1 Mandatory Tasks-**

Tasks which are mandatory for all inmates and comes under the policies of the jail authorities mainly called tasks which are predefined according to the rule book fall under the category of mandatory tasks.

The tasks are to be assigned on such basis that every inmate does everything once to serve the purpose of the program.

The following tasks are considered to fall under the category of mandatory tasks-

- Washing Tasks
- Mess Service
- Canteen Service
- Meditation sessions
- Psychiatrist sessions
- Feedback stations

This sub-module is implemented as follows-

- Task Switching will be performed on weekly basis.
- Database will save all the information on which task an inmate has performed each week for effective rotational assignment of task.

### **3.2.2 Specialization Tasks-**

- An inmate has a choice that either he can pursue an educational degree/course or be a part of industry/profession such as painting, bakery, hand-made products, apparel, textile, furniture, etc.

- Recruitment Drive also takes place for the inmates about to complete their sentence. (Except for rape convicts) Companies such as Taj Mahal Group, Aariz Media, Vedanta Foundation, People's Own Foundation, etc. have offered salaries ranging from Rs. 8,000 to Rs. 35,000 per month.

This sub-module is implemented as follows-

Preparation for  
end term  
placement drive



Track of  
academic  
performance



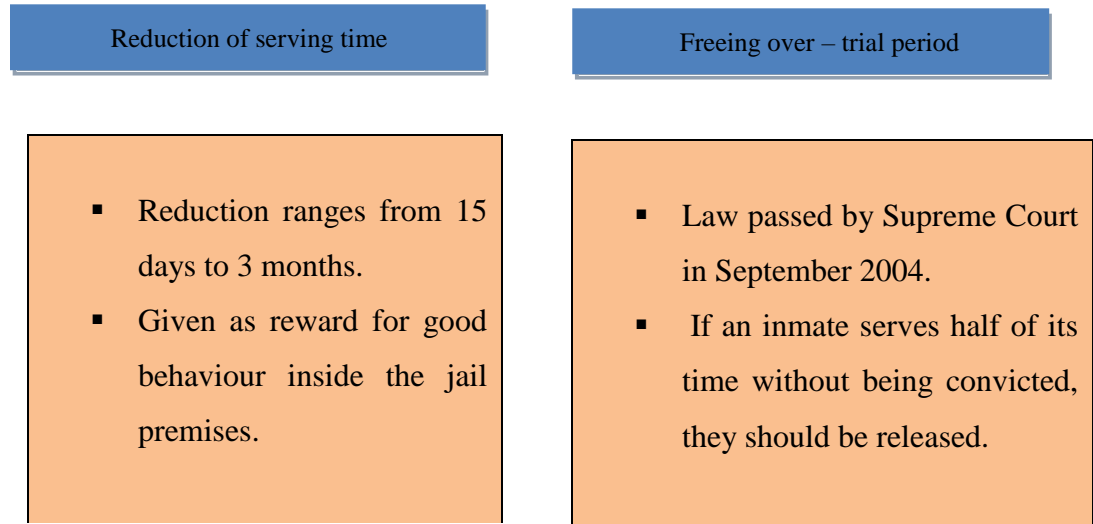
Educational  
degree



**FIGURE 3.2**

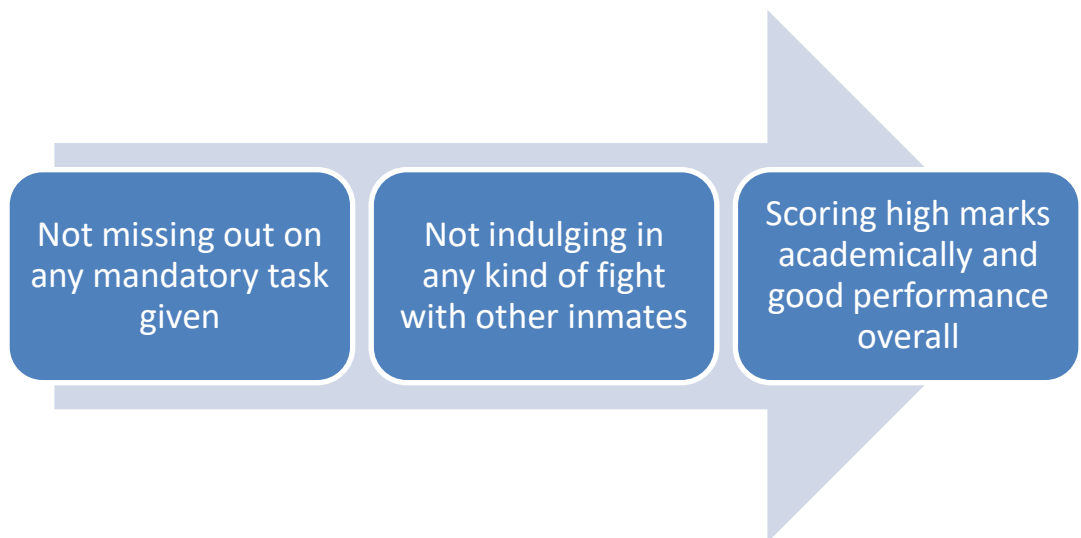
### **3.3 Sentence Serving**

- Two Important aspects- s



**Figure 3.3**

- Reduction of serving period is due to good behavior which may constitute the following factors:-



**FIGURE 3.3.1**

This sub-module is implemented as follows-

Database has attributes very information, so the evaluation of prisoners is a much easier tasks and much fairer task. This information is also crucial while the recruitment drive is in process.

Freeing prisoners who has served more than half of the maximum sentence they would have received without being convicted, is done to

1. Reduce the problem of overcrowding
2. Release prisoners who serve long sentences for petty crimes, just because they are awaiting trial.

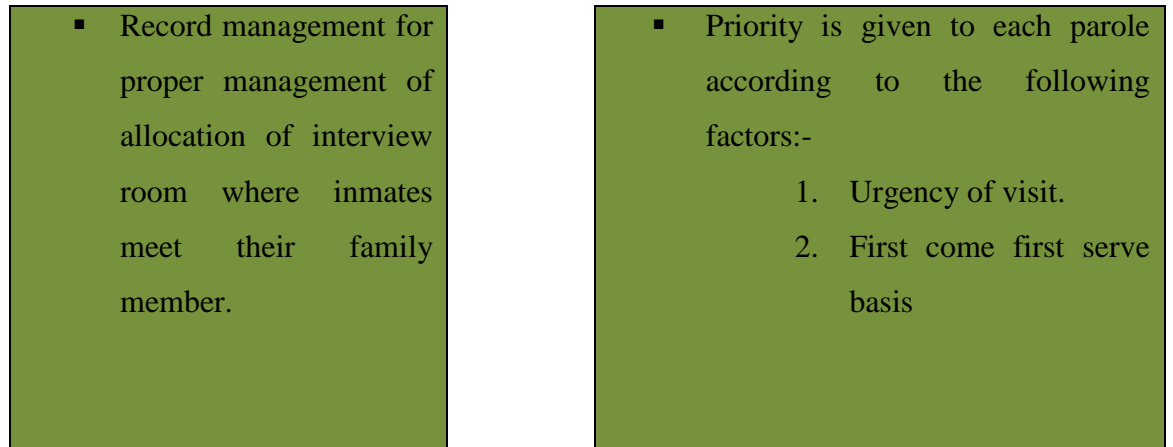
Calculation of maximum sentence and sentence served taking in account whether the prisoner has been convicted or not will make the procedure swifter.

### **3.4 Parole and Interview Handling**

- An interview is a process where an inmate could meet his/her family within the jail premises or outside (in case the prisoner is admitted in a hospital). An inmate is allowed two interviews per week.
- Problem in such a procedure arises within the jails which comprise of large number of inmates, such as Tihar Jail itself, since a limited space is given for the interview purposes.
- Parole is a system that allows temporary release of prisoners before the completion of their sentence for reasons such as marriage in family, ill health, property disputes, etc.
- Problem arises due to lack of alert system and record management, where paroles are offered with unfair priorities and not managed properly (as in case of Manu Sharma-convict of Jessica Lall murder case).
- This sub-module is implemented as follows-

**Interview handling**

**Parole management**



**FIGURE 3.4**

### **3.5 Complaint Handling**

- Traditionally, what happens is that if any inmate has a complaint, he/she drop their complaints or grievances in a complaint box.
- A box of hand-written complaints is usually difficult to sort, handle and is a time-consuming process.
- Another method is a group meeting where all inmates come together, and their grievances are heard, and solutions provided.
- Again, in such cases, lack of permanent record which has no record of being given of grievances leads to ignorance of numerous problems.
- This sub-module is implemented as following-

A system where prisoner enters/ or a police in-charge enters the grievances of a prisoner and enters the priority (urgent/not so serious) and also calculates the similar number of complaints so that right priority can be assigned to the complaints.

### **3.6 Components of a Management Information System**



## **Hardware**

Hardware is a generic term that refers to the physical artifacts of a technology. It may also mean the physical components of a computer system, in the form of computer hardware. Input and output devices constitute the hardware components of MIS, (Daniel, 2004).

## **Software**

Software is a general term used to describe a collection of computer programs, procedures and documentation that perform some tasks on a computer system. The term includes application software such as word processors and system software such as operating systems. The programs and applications convert data into machine-readable language, (Daniel, 2004).

## **Procedures**

Procedures are sets of rules, protocols or guidelines, which an organization establishes for the use of a computer-based information system (Daniel, 2004.)

## **Personnel**

The computer experts, managers, users, analysts, programmers, database managers, and many other computer professionals who utilize the computer-based information systems, (Phil, 2002).

## **Data**

Data are raw facts in isolation. Data describes the fundamental components and events of a business or an organization. It acts as a raw material for the information systems

## **Physical activity and sport for inmates**

Wellbeing Imprisonment conditions, for the most part connected to lockups and seclusion, add to the rise of numerous physical and mental prisoners' undesirable outcomes contrasted with the more extensive network (Courtney and Sabo, 2001; Loeb and Steffensmeier, 2011; Plugge, Foster, Yudkin and Douglas, 2009; Plugge, Douglas and Kirkpatrick, 2006; Richmond et al., 2011; Tosh, 1982; Valcarcel, 2001). Along these lines, wellbeing security and wellbeing advancement exercises are significant issues to be tended to by the jail arrangement of each nation to go to the rights and necessities of individuals in repression. Worldwide establishments, for example, the World Health Organization (2007), have

likewise created various archives and aides routed to the wellbeing in penitentiaries. In this circumstance, physical action and sports have been viewed as one of the key exercises for the wellbeing assurance and advancement of prisoners and research has been routed to such reason. Biomedical learning put together research with respect to physical action and sports are similarly appropriate either to the overall population or prisoners. This information expresses that more elevated amounts of standard physical movement are related with lower death rates, even in the individuals who take an interest in tolerably extraordinary exercises [www.prisonersonthemove.eu](http://www.prisonersonthemove.eu) 18 and good connection among exercise and cardiovascular wellbeing and diabetes are likewise watched (Amtmann, 2001). Some other psychological wellness benefits are likewise detailed from overall population and connected to detainees since these issues are specifically noteworthy in jail as a gathering of concentrates from the most recent decade recommend. In a poll put together investigation from USA with respect to prisoners' discernments in regard to an activity program, Nelson, Specian, Campbell and DeMello (2006) announced that members see a reduction in misery, stress and tension, just as an improvement in their physical shapes and wellness levels. Over sectional investigation dependent on a poll, Cashin, Potter and Butler (2008) brought up a noteworthy backwards connection between self-revealed practice in minutes out of each week and misery among an example of 914 Australian detainees. Another ongoing cross-sectional investigation demonstrated that self-esteem and satisfaction with mental state in physically dynamic detainees from Lithuanian remedy houses were essentially higher than in physically dormant prisoners, albeit low self-esteem was not decided in any detainees (Vaiciulis, Kavaliauskas and Radisauskas, 2011). In this investigation, the likelihood that the convicts who have a solid awareness of other's expectations will in general be more physically dynamic than the detainees who don't view themselves as capable is a few times higher. There are some near relationship examines created in USA that demonstrated essentially lower dimensions of wretchedness, stress and nervousness among those prisoners who practiced thought about to those who did not work out (Backaloo, Krug and Nelson, 2009) or distinguished a day by day sport practice in an altogether higher level of non-sleep deprived person detainees' gathering than the light sleeper detainees' gathering (Elger, 2009). Another relative investigation created with male prisoners detailed a lessening of verbal animosity, threatening vibe and outrage in the weight-preparing gathering while life scores altogether

diminished in the non-weight-preparing gathering (Wagner, McBride and Crouse, 1999). A semi exploratory investigation created in a male jail detailed that a 12-week program of customary vigorous exercise diminished side effects of melancholy (Libbus, 1994). The positive connections detailed in the past examinations need more research to affirm this information since there still are different investigations with no decisive outcomes. Among them, there is a pilot randomized control preliminary examination, created in Australia, that investigated the impact of a 12-week exercise and wellbeing training program on male detainees' mental misery and results demonstrated no factually critical contrasts among pre and post-practice program. There was likewise no noteworthy connection between complete mental pain and taking an interest or not taking an interest in the activity (Cashin, Potter, Stevens, Davidson and Muldoon, 2008).

## **Chapter 4**

### **Implementation**

#### **4.1 Database Used- SQLite**

##### **4.1.1 Introduction to SQ-Lite**

It is a comparative database management system which is contained in C programming history. In comparison with other database management systems, it is not a client-server database engine rather it is a fixed into the program end. SQ-Lite is also known as ACID- as it compliant and imposes most of the SQL standard, using a diverse and easy typed SQL syntax that does not guarantee the domain honesty. SQ-Lite is a famous choice as encapsulated database software for local/client storage in software such as various web browsers. It is no dough the most universally deployed database engine, as it is used today by many web browsers, operating systems, and embedded systems, among others. SQ-Lite is essential to many programming languages.

##### **4.2History**

Dr. Richard Hipp designed SQ-Lite in the spring of 1999 by hand working for Dynamics on contract with the US Navy. Hipp was designing software which was about to be used on aboard guided missile destroyers, which were based on HP-UX with IBM Informix database back-end. The design goals of SQ-Lite were to be allowed to be mechanized with help of database management system or requirement of a database administrator. Hipp based the syntax and definitions on PostgreSQL 6.7 documentation. In July 2000, version 1.0 of SQ-Lite was launched, with storage based on gdbm (GNU Database Manager). SQ-Lite 2.0 changed gdbm with a custom B-tree implementation, with add on of transaction capability. SQ-Lite 3.0, part of which is funded by America Online, which added internationalization,

manifests typing, and other big improvements. In 2011 Hippo announced his plans to add an UnQL interface to SQLite databases and to create *UnQ-Lite*, an embeddable document-oriented database.

#### 4.2.1 Features

- Atomic, consistent, isolated, and durable (ACID) are the transactions even after system fails.
- No need of any kind of administration.
- All SQ-Lite features such as partial indexes and common table.
- A single cross disk contains all the database which can also be used as an application.
- Terabyte sized, and gigabyte sized strings or blogs can be stored.
- Optional features come out.
- Very basic and simple to use API.
- Binding for almost every language is available.
- Good source good with 100% test coverage.
- Could also be available as a ANSI-C-source file.
- Self-claimed and no other dependencies
- Easy to port to with other systems.
- Public domain sources which are available to everyone.
- Additionally, has CLI which is used to administer SQ-Lite databases.

## **4.2.2 Implied Use for SQ-Lite:**

### **Embedded devices and the things of internet**

Because of SQ-Lite database requires no administration, it works well in devices that do not need human support for their function. SQ-Lite can also be used in the following objects such as “mobiles, set-top boxes, televisions, game consoles, cameras, watches, kitchen appliances, thermostats, automobiles, machine tools, airplanes, remote sensors, drones, medical devices, and robots”: the "internet of things".

Client/server database engines are created for the data to live inside a peaceful-focused datacenter in the core of the network. SQ-Lite also offer its offering here too, but SQ-Lite is at the edge of the network and providing fast and reliable data services to applications which would otherwise have a good connectivity.

### **Application file format**

SQ-Lite is mostly used as the on-disk file format for desktop applications such as version control systems, media cataloging and editing files. CAD packages, record keeping programs, and so forth. The file/open operation calls `sqlite3_open ()` to attach to the database file. Files are updated automatically. The File/Save As menu option can be implemented using the backup API.

The benefits to this approach are numerous. See the technical notes for further details.

### **Websites**

SQ-Lite is being developed so it could work with websites which has low or medium traffic (which is to say, most websites). Database consumption tells us that how SQ-Lite ought to handle its traffic. Generally, site which gets fewer than 110K hits/day should work

perfectly with SQLite. The 110K hits/day figure is a good estimate, not as hard as it looks. SQLite has been taught to work with 20 times that amount of traffic being handled.

The website of SQLite which is "<https://www.sqlite.org/>" uses SQLite itself, and as of this writing (2016) it handles about 500K to 900K HTTP requests per day, about 20-25% of which are pages of dynamic complexity which are touching the database. Each page dynamically does roughly 300 SQL statements. This setup runs on a single VM machine that has a load and ought to share a server with 24 others and keeps the load average below 0.02 most of the time.

## **Data analysis**

People who are aware of SQL can feel free to use the sqlite3 command-line shell (or various third-party SQLite access programs) to read large datasets. Raw data is to be imported from CSV files, and then this data is modified to make a summary report. Complex analysis can be done by using simple scripts written in Tcl or Python (both of which are SQLite built-ins) or in could be in any other languages with help of readily available adaptors. It includes website log searching, sports analysis, metrics compilation, and analysis of experimental results. Many bioinformatics team researchers use SQLite in this way.

The same thing can be done with an enterprise client/server database, the main advantage of SQLite software is that it is very simple to install and easy to use.

## **Cache for enterprise data**

SQLite is used as a cache of similar content from an enterprise RDBMS. This helps in reducing latency because most of the queries occur against the local cache and avoid a round-trip for network. Helps in reduction of load to the servers and database. And in many cases, it means that the client-side application can continue operating during network issues.

## **Server-side database**

The success ratio of SQ-Lite as a data center running on data servers, or in other words, using SQLite as the underlying storage engine for an application-specific database server.

The whole system is still client/server: clients send requests to the server and get back replies over the network. Instead of sending generic SQL query and getting back raw table content, the client requests and server responses are high-level and application-specific. The server modifies the requests into multiple SQL queries, gathers the results, does post-processing, filtering, and analysis, then constructs a high-level reply containing only the essential information.

SQ-Lite is every time faster than a client/server SQL database engine in this scenario. Database requests are numbered by the server, so latency is not an issue. Latency can be improved by "database shading": using different database files for different sub domains. For example, the server might have a different SQ-Lite database for every different user, so that the server can handle hundreds or thousands of simultaneous connections, but each SQ-Lite database is only used by one and only one connection.

## **File archives**

The SQ-Lite Archive enlightens how SQ-Lite can be used as a substitute for ZIP files or Tarballs. A bundle of files stored in SQ-Lite is slightly larger, and in some cases very small, than the equivalent ZIP archive. And of SQLite archive features incremental and atomic updating and the ability to store much richer metadata.

SQ-Lite archives are useful as it is considered as a format for software or content updates that is to be broadcast to many clients. A variation on this idea is used, for example, to transmit TV programming guides to set-top boxes and to send over-the-air updates.



## **Replacement for *ad hoc* disk files**

Substitution for these specially appointed information records Many projects utilize "fopen(), fread(), and fwrite()" to structure and oversee documents of information in home-developed arrangements. SQ-Lite works especially well.

## **Internal or temporary databases**

For projects that have a ton of information that must be arranged in various ways, it is much simple and speedy to stack the information into a memory of SQ-Lite database and utilize questions with joins and request by statements to extricate the information in the shape and request required instead of to endeavor to code similar tasks with the expense of work. Utilizing SQL database inside along these lines additionally gives the program more prominent adaptability sections and records can be added without to recoding each question.

## **Stand-in for an enterprise database during demos or testing**

Customer applications ordinarily utilize a conventional database interface that enables associations with different SQL database motors. It bodes well to incorporate SQ-Lite in the blend of upheld databases and to statically connect the SQLite motor in with the customer. That way the customer program can be utilized independent with a SQ-Lite information document for testing or for exhibitions.

## **Education and Training**

Since it is easy to setup and utilize (establishment is minor: simply duplicate the sqlite3 or sqlite3.exe executable to the objective machine and run it) SQLite makes a decent database motor for use in instructing SQL. Understudies can without much of a stretch make the greatest number of databases as they like and can email databases to the educator for remarks or reviewing. For further developed understudies who are keen on concentrate how a

RDBMS is actualized, the secluded and very much remarked and reported SQLite code can fill in as a decent premise.

## **Experimental SQL language extensions**

The basic, secluded structure of SQLite makes it a decent stage for prototyping new, exploratory database dialect highlights or thoughts.

## **Chapter 5**

### **Benefits**

#### **5.1 Benefits of the Prison Management System**

- This organization has huge help for the jail organization and this framework is encouraged to give and get truly right, exact, and opportune information and data with no wastage of time and mistakes inclined records and registers of jail related exercises. It gives a simple to-utilize and opportune conveyance of data. The framework gives help with errand task and pivot, along these lines supplanting the dull and tired manual process. It additionally expels substantial information section and the board and encouraging characteristic information stream without pointless reiteration of things. It has come about into decrease of printed material, cultivating quick and proficient work forms with precision, and blunder free arrival of information estimation.
- It's computerization as well as entire robotization and a wise framework which ascertains the sentences, discharge dates naturally and with no mistakes by human. The new framework is effectively offering help to the change of the state jail framework and towards current organization which looks far way better and progressed and furthermore it helps in taking right choices at the correct time. It has encouraged the procedure of more straightforwardness inside the framework through the above depicted administrations.
- The implementation of new rule by the Supreme Court has made this system the most updated among all systems which look alike. Also, it addresses another problem of complaint handling which has not been dealt with yet. The module “Complaint Handling” makes the feedback process more effective, efficient and influenceable and not just a mere formality.

- The module “Parole and Interview Handling” is also a new feature which will utilize the meeting place of the inmates efficiently and provide each prisoner an equal chance to meet their relatives/friends and also reduce the administration work of allocating the premises and reduce the chance of error. Also, the parole handling will check current unfair issue of paroles and delayed appeals do not take place.

## **5.2 Benefits of Using SQLite**

### **Speed**

- In many cases, 3-4 times quicker than MySQL/PostgreSQL
- Interfaces in PHP are fast
- No attachment as well as TCP/IP overhead

### **Functionality**

- Exchange, Sub-chooses, Triggers, Views.
- Data storage up to 2.5tb.
- Memory Footprint.
- Independent: no outer conditions.
- Protection of data integrity.
- Flexible database.

### **Security**

- Each database is completely independent.

## Chapter 6

### Project Code

#### 6.1.1 Session Creation

This code starts a session whenever an admin login successfully and is always declared at the top of the file.

```
<?php  
session_start();  
?>
```

#### 6.1.2 Storing Session Data

After admin log-in successfully the post data of the form is retrieved and stored in the session variables and the page is directed to the admin.php.

```
<?php  
session_start();  
$_SESSION["login"]=$_POST['user'];  
$_SESSION["password"]=$_POST['pwd'];  
header("location: admin.php");  
?>
```

#### 6.2 Admin Panel

This given code validates whether the admin's credentials stored in the database are correct or not using session variables that store admin username and password.

```
if($_SESSION["login"]=='admin'and$_SESSION["password"]=='hello123')
```

## 6.2.1 Form Validation

Validating a form through JavaScript and then connecting PHP for conforming if the ID is taken or not.

```
<script>
functioncheck() {
    var name =document.getElementById("name").value;
    var id =document.getElementById("identity").value;
    var age =document.getElementById("age").value;
    var crime =document.getElementById("crime").value;
    var duty =document.getElementById("duty").value;
    var inouts=document.getElementById("inouts").value;
    var date=document.getElementById("date").value;
    var photo =document.getElementById("photo").value;
var flag =0;

if(!/^[a-z A-Z]*$/i.exec(name)) {
    document.getElementById("nameError").innerHTML="*Only Characters
Allowed";
    document.getElementById("nameError").style.display="inline-block";
    flag =1;
}
elseif(name == ""){
    document.getElementById("nameError").innerHTML="*Please Enter the Name";
    document.getElementById("nameError").style.display="inline-block";
    flag =1;
}
else
    document.getElementById("nameError").style.display="none";

if(age <1|| age >100) {
```

```

    document.getElementById("ageError").innerHTML="*Age limit 1-100";
    document.getElementById("ageError").style.display="inline-block";
    flag =1;
}
else
    document.getElementById("ageError").style.display="none";

if(!/^[a-z A-Z]*$/i.exec(crime)) {
    document.getElementById("crimeError").innerHTML="*Only Characters
Allowed";
    document.getElementById("crimeError").style.display="inline-block";
    flag =1;
}
elseif(crime == ""){
    document.getElementById("crimeError").innerHTML="*Please Enter the crime";
    document.getElementById("crimeError").style.display="inline-block";
    flag =1;
}
else
    document.getElementById("crimeError").style.display="none";

if(!/^[a-z A-Z]*$/i.exec(duty)) {
    document.getElementById("dutyError").innerHTML="*Only Characters Allowed";
    document.getElementById("dutyError").style.display="inline-block";
    flag =1;
}
elseif(duty == ""){
    document.getElementById("dutyError").innerHTML="*Please Enter the duty";
    document.getElementById("dutyError").style.display="inline-block";
    flag =1;
}

```

```

else
    document.getElementById("dutyError").style.display="none";

if(!/^[a-z A-Z]*$/i.exec(inouts)) {
    document.getElementById("inoutsError").innerHTML="*Only Characters
Allowed";
    document.getElementById("inoutsError").style.display="inline-block";
    flag =1;
}
elseif(inouts==""){
    document.getElementById("inoutsError").innerHTML="*Please Enter the inouts";
    document.getElementById("inoutsError").style.display="inline-block";
    flag =1;
}
else
    document.getElementById("inoutsError").style.display="none";

if(date=="") {
    document.getElementById("dateError").innerHTML="*Please Enter the date";
    document.getElementById("dateError").style.display="inline-block";
    flag =1;
}
else
    document.getElementById("dateError").style.display="none";

if(id == "") {
    document.getElementById("idError").innerHTML="*Please Enter the id";
    document.getElementById("idError").style.display="inline-block";
    flag =1;
}

```



```

<?php
    $conn=mysqli_connect("localhost", "root" , ""
, "prison");

    if(!$conn)
    die("Connection failed: ".mysqli_connect_error());

    $query="SELECT * FROM `data` ";

    $result=mysqli_query($conn, $query) or die(mysqli_error($conn));

    while($row=mysqli_fetch_assoc($result)){

        ?>

        else if (id == "<?php echo $row['identity'] ?>") {
            document.getElementById("idError").innerHTML = "*Id already taken";
            document.getElementById("idError").style.display = "inline-block";
            document.getElementById("idError").style.color = "red";
            flag = 1;
        }

        <?php
            }
        ?>

        else if (id[0] != "#") {
            document.getElementById("idError").innerHTML = "*Should start with #";
            document.getElementById("idError").style.display = "inline-block";
            flag = 1;
        }
    }

```

```

    else {
        document.getElementById("idError").innerHTML = "*This ID can be used";
        document.getElementById("idError").style.display = "inline-block";
document.getElementById("idError").style.color = "green";
    }

if(photo == "") {
    document.getElementById("photoError").innerHTML = "*Please select the photo";
    document.getElementById("photoError").style.display = "inline-block";
    flag = 1;
}
else
    document.getElementById("photoError").style.display = "none";

if(flag == 1)
    return false;
}
</script>

</html>

```

## 6.2.2 Saving Data in A Database

The given code connects the database using php and then store data accordingly.

```

<?php

$name=$_POST["name"];
$identity=$_POST["identity"];
$age=$_POST["age"];
$gender=$_POST["gender"];

```

```

// $photo = "../images/prisoners/" . $_POST["photo"];
$crime=$_POST["crime"];
$date=$_POST["date"];
$duty=$_POST["duty"];
$inout=$_POST["inouts"];
// uploading the photo
$target_dir="../images/prisoners/";
$target_file=$target_dir.basename($_FILES["photo"]["name"]);
move_uploaded_file($_FILES["photo"]["tmp_name"], $target_file);

$conn=mysqli_connect("localhost", "root", "", "prison");
if(!$conn)
die("Connection failed: ".mysqli_connect_error());

$sql="INSERT INTO `data`(`name`,`identity`,`age`,`gender`,`photo`,`crime`,`date`,`duty`,`inouts`)
VALUES
('$name','$identity','$age','$gender','$target_file','$crime','$date','$duty','$inout');";
if(mysqli_query($conn,$sql))
{
    ?>
<div class="admin-incorrect">
    <div class="container jumbotron text-center">
        <p>Data Successfully Updated</p><br>
        <p><span>Add More</span>
        <span><button type="submit" class="btn btn-
default"onclick="window.location.href='admin.php'">Go Back!</button>
        </span></p>
    </div>
</div>

```

## 6.3 Destroying Session

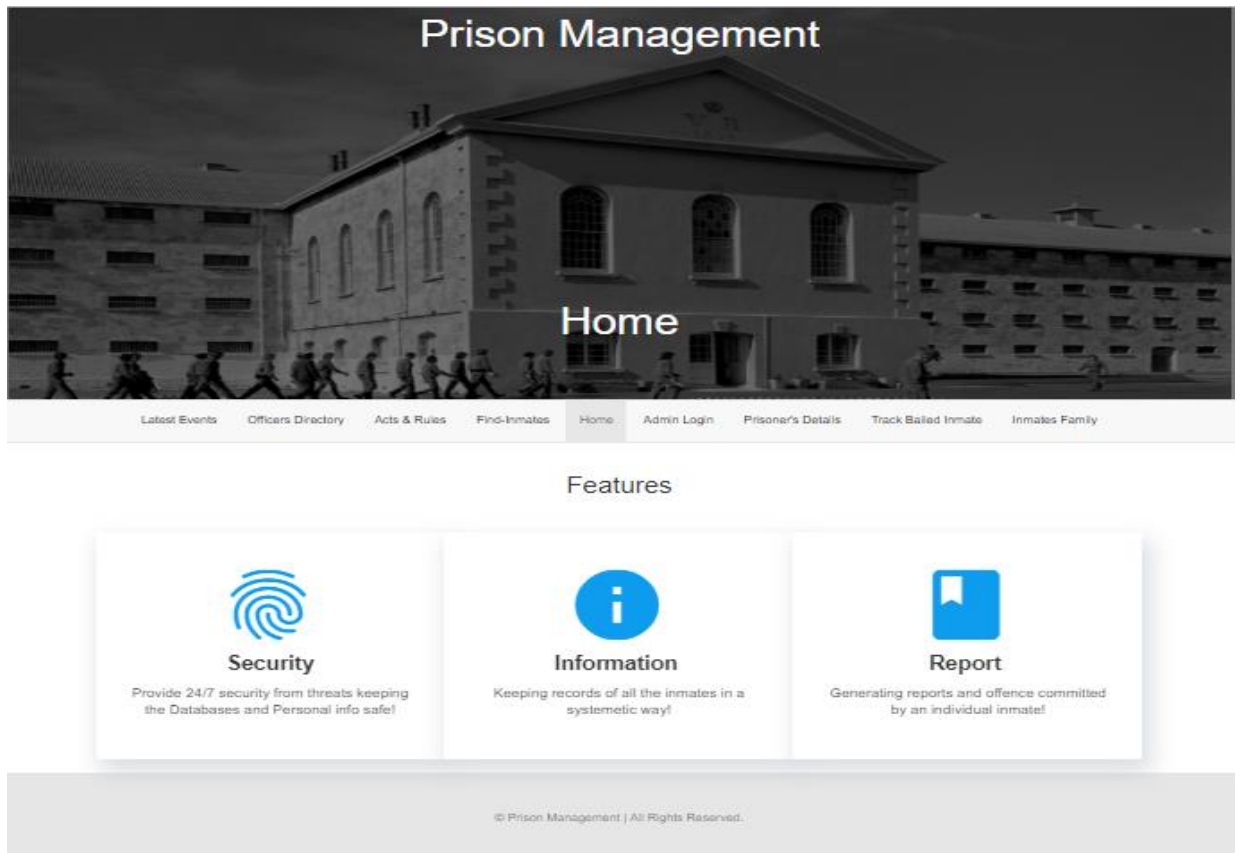
This code destroys the session variables used to store the admin credentials.

```
<?php
session_start();
if(session_destroy())
{
header("Location: ../html/admin.html");
}
?>
```

# Chapter 7

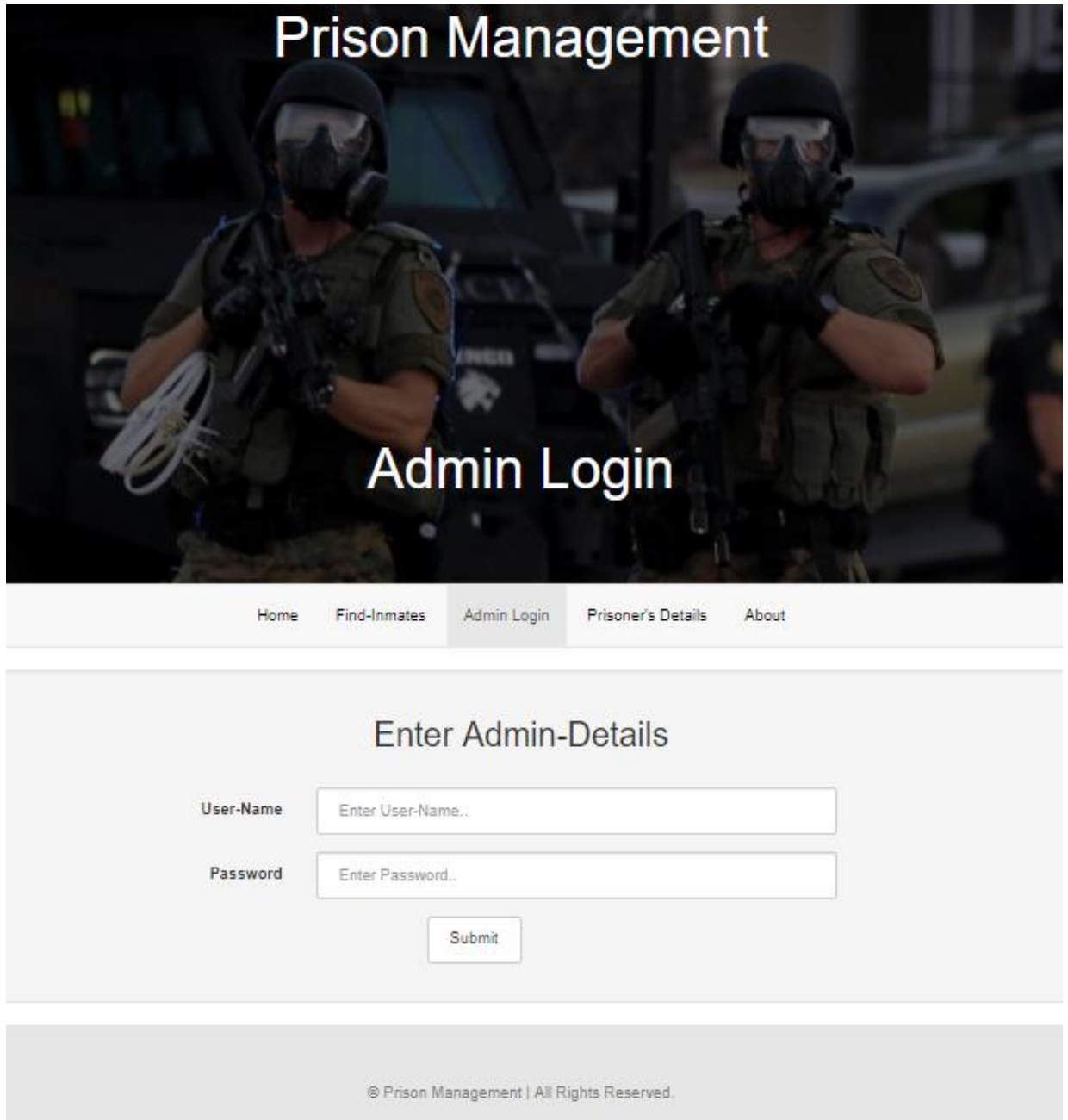
## Results

Figure 7.1 shows the home page of the Prison Management System with all the details provided about the project.



**FIGURE-7.1**

Figure 7.2 depicts the admin login page where an admin can login and update the information regarding the prisoners about their information.



# Prison Management

Admin Login

- Home
- Find-Inmates
- Admin Login
- Prisoner's Details
- About

## Enter Admin-Details

User-Name

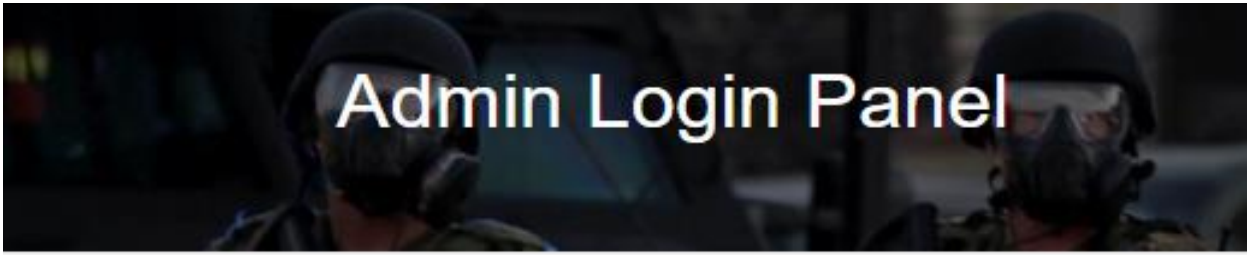
Password

Submit

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**FIGURE-7.2**

Figure 7.3 shows the admin login panel where the admin can add information about a prison mate or can delete the information respectively.



# Admin Login Panel

---

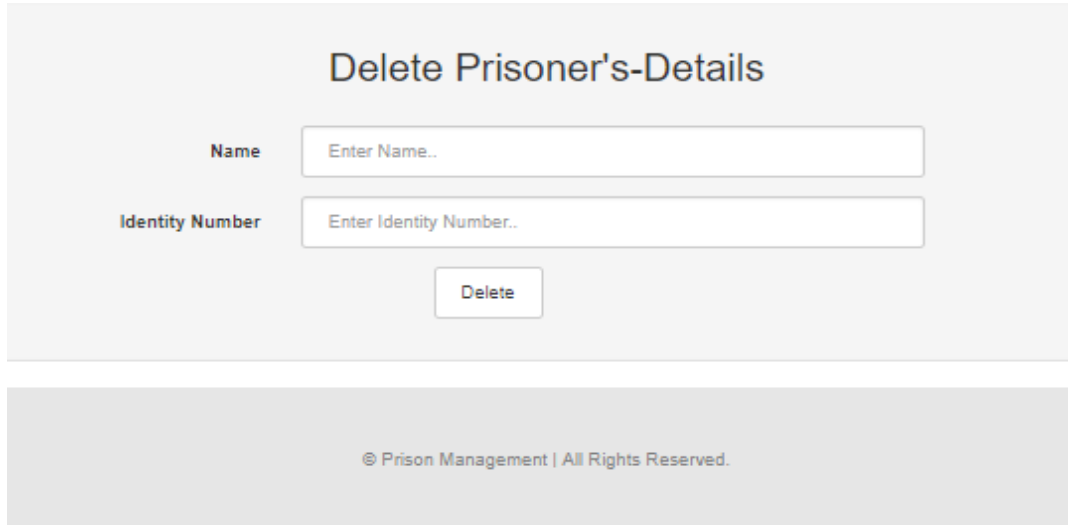
## Update Prisoner's-Details

First-Name	<input type="text" value="Enter Name.."/>
Identity Number	<input type="text" value="Enter Identity Number.."/>
Age	<input type="text" value="Enter Age.."/>
Gender	<input type="text" value="Male"/>
Crime	<input type="text" value="Enter Crime.."/>
Release Date	<input type="text" value="dd-mm-yyyy"/>
Duty	<input type="text" value="Enter Duty.."/>
In/Out	<input type="text" value="Enter Location.."/>

Inmate's Photo  No file chosen

**FIGURE-7.3**

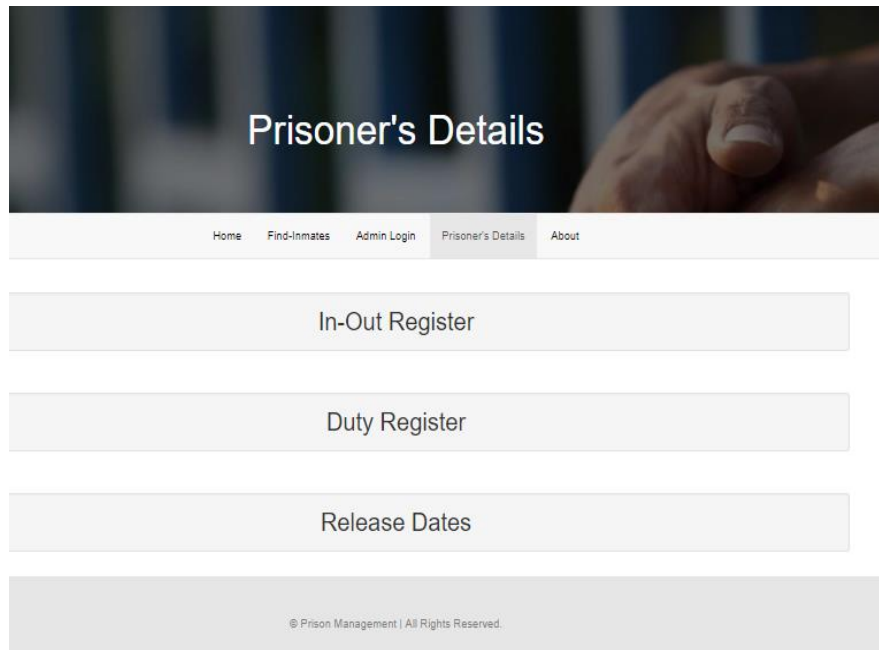
Here the admin can delete the details of the prisoner.



The screenshot shows a web form titled "Delete Prisoner's-Details". It features two input fields: "Name" with the placeholder text "Enter Name.." and "Identity Number" with the placeholder text "Enter Identity Number..". Below these fields is a "Delete" button. At the bottom of the page, there is a footer that reads "© Prison Management | All Rights Reserved."

**FIGURE-7.4**

This figure shows the whereabouts of the inmates and duties assigned to them.

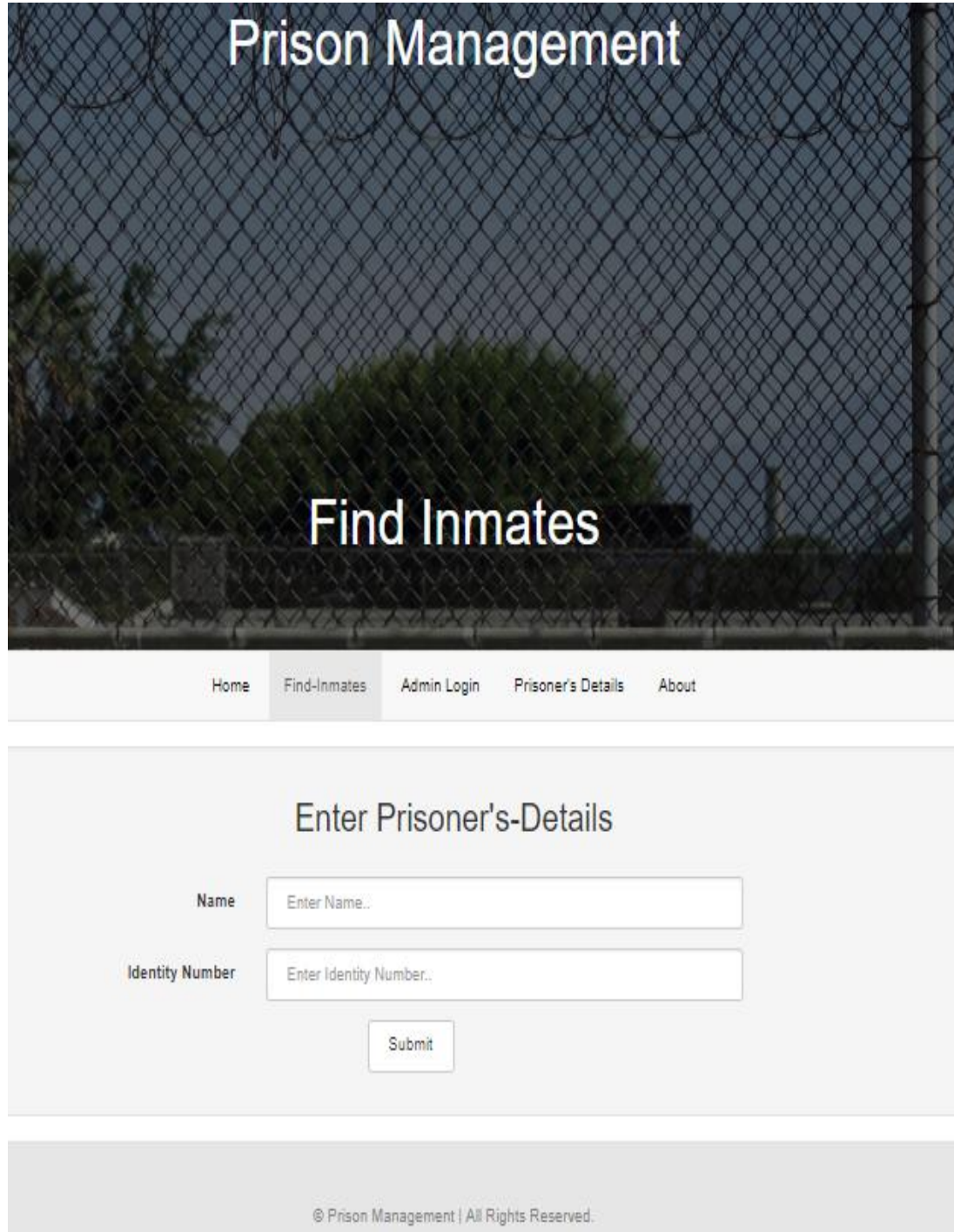


The screenshot displays the "Prisoner's Details" page. The header area includes the title "Prisoner's Details" and a navigation menu with links for "Home", "Find-Inmates", "Admin Login", "Prisoner's Details", and "About". The main content area contains three large, light-colored buttons: "In-Out Register", "Duty Register", and "Release Dates". The footer at the bottom of the page reads "© Prison Management | All Rights Reserved."

**FIGURE-7.5**



Here the user can find the details of the prisoners by logging with the prison mates id and respective password.



The image shows a web application interface for 'Prison Management'. The header features the title 'Prison Management' and a navigation menu with links for 'Home', 'Find-Inmates', 'Admin Login', 'Prisoner's Details', and 'About'. The 'Find-Inmates' link is highlighted. Below the navigation is a form titled 'Enter Prisoner's-Details' with two input fields: 'Name' (containing 'Enter Name..') and 'Identity Number' (containing 'Enter Identity Number..'). A 'Submit' button is positioned below the fields. The footer contains the text '© Prison Management | All Rights Reserved.'

**FIGURE-7.6**

## **CHAPTER 8**

### **Scalability**

Prison management system is very diverse kind of project which could be used in various other prison systems across the country to ease the process of managing prisoners within the prison premises. It is quite simple to handle and can be modified at any time of time or whenever Supreme court releases any new law in context to prisoners and thus could be used for a very long time without being behind to the changing technology. This project could be scaled to an extent where all the activities of the prisoners could be controlled via computers. This vision goes in hand to hand with the vision of our Prime Minister Shri Narendra Modi, i.e. “Digital India”.

## **CHAPTER 9**

### **CONCLUSION**

So, till now we have done a great work in the field of Prison Management System and still left with some work or some new invention in this field that we will going to do the next semester and that is tracking the bailed prisoners so that jailers have the proper records regarding the location of the prisoners and it would a nice move to track or to check the real time location of the prisoners and it will increase the security of that state or region. So, before starting a new work in this field, we have developed a great website in which we have created a kind of portal in which it require a login of a jailor or the head of the department so that jailer can put the entry of all the prisoner regarding their crime, release date etc. and even jailer will put the duty time of the police men regarding their timings and duty area and even police men will be assigning to control the group of prisoners to guide them and to assign them a work and will collect the report regarding their work behaviour and will submit it to the jailer and jailer will upgrade that it to the prisoners profile so that prisoners family member will able to get in touch with all the data with the help of the particular login id generated by the jailer.

So at last we would like to notify you that with the help of Prison management system, life of police men will be eased in terms of maintaining a large documents file and with our website, work will be faster and there would be less paper work.

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