

Project Report

Abstract:

This project is aimed at developing a prison management system that is a collection of data for the effective management of prisons. This system contain data for prisoners, employees, doctors, and duty officers Administrators will be able to store, search and delete data of the Prison which includes the basics of a prisoner , doctors , employees , duty officer .And duty officer will be able to view the prisoner and employees Data.

This project includes info about prisoners,their crime and lodging pattern.it also records, tracks and monitors the movement of prisoners.There is no provision to keep feedback regarding the performance of the prisoners.The prototype was developed using MySql , PHP , CSS,JavaScript and HTML.

Acknowledgement:

First thanks to Almighty for giving us strength enough to complete this project with a minimum satisfactory. We would like to gratitude to Almighty creator for giving our strength enough to complete this project work entitled Prison Management System with a minimum satisfactory.

We gratefully acknowledge for the assistance, cooperation, guidance and clarifications provided by our honorable teacher Mr. Abhijit Chakraborty during the development of the Prison Management System. Our extreme gratitude to him who guided us throughout the project.

Without his willing disposition, spirit of accommodation, frankness, timely clarification and above all faith in us, this project could not have been completed in due time. His readiness to discuss all important matters at work deserves special attention .Also thanks to all of our classmates and everyone who has provided feedback and supported us during this project work.

Preface:

This document has been written to apply a new version of Prison Management System Software which is actually implemented with PHP. This is the first version for Prisom Management System. This document is the basic intended for any individual user, developer, tester, project manager or

documentation writer that needs to understand the basic system architecture and its specifications. In our project, we worked on Prison Management System. We created a website where we can add, retrieve, delete data of the prisoners, duty officers ,doctors ,and visitors. There is a admins who will manage this system by adding and manipulating data of the prisoners, duty officers, doctors. We inserted some data already to show that the overall system works. Admins can view the data of the all prisoners ,duty officers ,doctors .Duty officers will only can view the data of prisoners and employees. We can manage list of all doctors, nurses, employees with their full details.

List of figures:

- ❖ Process Model
- ❖ E-R Diagram
- ❖ UML diagram/Schema diagram
- ❖ Data flow Diagram
- ❖ Sequence Diagram
- ❖ Normalization
- ❖ Screenshots

Keywords:

Prisoner , parole , Automation , Records , Staff , Visitor , Member Login , Cell , Crime , Remand , Convict

Introduction:

A prison also known as gaol is a place in which people are physically confined and usually deprived of a range of personal freedoms. Imprisonment or incarceration is a legal penalty that may be imposed by the state for the commission of a crime.

Other terms used are penitentiary, correctional facility, remand center, detention center, and gaol or jail. As well as convicted or suspected

criminals, prisons may be used for internment of those not charged with a crime.

Prisons may also be used as a tool of political repression to detain political prisoners, prisoners of conscience, and "enemies of the state", particularly by authoritarian regimes. In times of war or conflict, prisoners of war may also be detained in prisons.

A prison system is the organizational arrangement of the provision and operation of prisons. There is no centralized management information system to keep track of records, manage automatic generation of the prisoner's information and reports for efficient and effective management at central prison. Currently the management of Uganda Prisons Service (UPS) particularly central prison is still using papers and files system to keep track of information thereby leading to delayed work and time wastage.

This approach of generating prisoner's information is totally manual hence requiring additional manpower, time and produces a lot of errors and this may lead to inappropriate planning and financial loss in future.

More so, with the ever increasing number of prisoners, a lot of documentation and recording has increased and this kind of paper work and manual handling of data is not a user friendly way of collecting and managing information.

This approach creates delay in creating reports more over it's a hectic and costly exercise.

It is against this background that a web based information system for tracking records in prisons that allows automatic generation of prisoner's information, centralized management and automatic generation of reports without errors is developed for central prison.

In our project, we worked on Prison Management System. We created a website where we can add, retrieve, delete data of the prisoners ,duty officers ,doctors ,and visitors. There is a admins who will manage this system by adding and manipulating data of the prisoners, duty officers, doctors. We inserted some data already to show that the overall system works. Admins can view the data of the all prisoners ,duty officers ,doctors .Duty officers will only can view the data of prisoners and employees. We can manage list of all doctors, nurses, employees with their full details.

Full project specifications are briefly described here in the document.

- The first part of our report provides the brief introduction to our ongoing system and our proposal how to fix them in technical manner.

This part includes the digital modification system to our analog system and how it will react in future.

- Second part provides the term and methodology used by our system to meet the requirement and which is progressive to gain optimum solution.
- Third part provides the requirement engineering which includes ER diagram, ER to Relational Mapping.
- Fourth part contains designing and coding.
- Fifth part contains testing and implementation.
- And final part contains about future work and conclusion.

Methodology:

Software process is the way in which we produce the software. Apart from hiring smart, knowledgeable engineers and buying the latest development tools, effective software development process is also needed, so that engineers can systematically use the best technical and managerial practices to successfully complete their projects. A software life cycle is the series of identifiable stages that a software product undergoes during its lifetime .A software lifecycle model is a descriptive and diagrammatic representation of

Methodology (con't)

the software life cycle .A life cycle model represents all the activities required to make a software product transit through its lifecycle phases .It also captures the order in which these activities are to be taken.

Life Cycle Models:

There are various life cycle models to improve the software processes.

- WATERFALL MODEL

- PROTOTYPE MODEL
- ITERATIVE ENHANCEMENT MODEL
- EVOLUTIONARY MODEL
- SPIRAL MODEL

In order to develop the system we considered to use a development methodology and it is the **waterfall model**.

WATERFALL MODEL:

Methodology (con't)

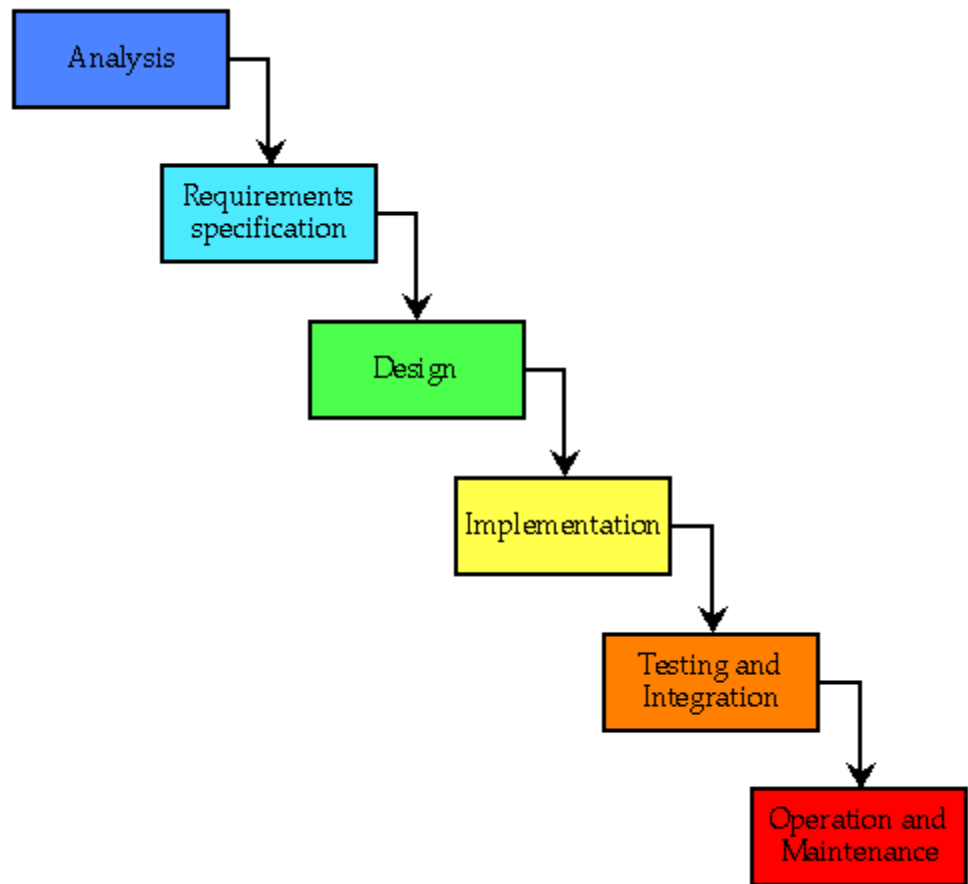


Fig: Waterfall model approach

Methodology (con't)

Advantages of waterfall model:

- ❖ It is easy to manage due to the rigidity of the model - each phase has specific deliverables and a review process.
- ❖ In this model phases are processed and completed one at a time. Phases do not overlap.

- ❖ Waterfall model works well for smaller projects where requirements are very well understood.

Disadvantages of waterfall model:

- ❖ Once an application is in the testing stage, it is very difficult to go back and change something that was not well-thought out in the concept stage.
- ❖ Not a good model for complex and object-oriented projects.
- ❖ Not suitable for the projects where requirements are at a moderate to high risk of changing.

Why we are using this model:

- ❖ My requirements are clear, well known and fixed.
- ❖ Technology is understood.
- ❖ Project is short.
- ❖ Product definition is stable.
- ❖ There is no ambiguous requirements.

Requirement Engineering:

Software Requirement Specification (SRS)

Introduction:

The following subsections of the SRS document provide an overview of the entire SRS.

Purpose: In our project, we worked on Prison Management System. We created a website where we can add, retrieve, delete data of the prisoners, duty officers, doctors, and visitors. There is an admin who will manage this system by adding and manipulating data of the prisoners, duty officers, doctors. We inserted some data already to show that the overall system

works. Admins can view the data of the all prisoners ,duty officers ,doctors .Duty officers will only can view the data of prisoners and employees. We can manage list of all doctors, nurses, employees with their full details.

Scope:

All of the functionalities have been grouped into three categories, these categories are explicitly stated below for this project.they are:

- ✓ Criminal Records Management.
- ✓ Prison Management System.
- ✓ Personnel Management System.

Benefits:

- ✓ Improvements and reforms can be taken in a swifter and efficient manner.
- ✓ Prison inmates can serve their jail period by serving the society.
- ✓ Production summary can be viewed
- ✓ The system is easy to use with very good user interfaces
- ✓ Enhance faster decision making by the management because reports and other actionable information
- ✓ The system does not allow duplicate information and therefore no redundancy

PRISON MANAGEMENT SYSTEM FEATURES

- ✓ Login system
- ✓ Prisoner Registration
- ✓ Admin Homepage
- ✓ Prisoner List
- ✓ Add Duty Officer
- ✓ Search Prisoner by ID
- ✓ Examinee Registration

- ✓ Duty Officer List
- ✓ Delete Duty Officer
- ✓ Add Employee
- ✓ Employee List
- ✓ Delete Employee
- ✓ Add Doctor
- ✓ Doctor List
- ✓ Delete Doctor
- ✓ Visitor Registration
- ✓ Visitor List

Login Page

In the login administrator will be able to log in if he has the username and password. This process will lead them forward to the admin homepage. Selection of different button will open different section while the user is logged in.

Home Contact us

About Noakhali Central Prison

Currently we are performing test transmission in Noakhali prison. We will get back with full version with all the improvements and many more. Stay with us by cooperating.

[Log In to NCP](#)

User Name

Password

Admin Homepage:

Admin members have all the access. They can update this database, they can check, they can add or delete. In this section admin will see some feature. These features are given below:

Admin Homepage

PRISONER REGISTRATION

PRISONER LIST
DELETE PRISONER
SEARCH PRISONER
ADD PRISONER EXAM

ADD DUTY OFFICER
DUTY OFFICER LIST
DELETE DUTY OFFICER

ADD EMPLOYEE
EMPLOYEE LIST
DELETE EMPLOYEE

ADD DOCTOR
DOCTOR LIST
DELETE DOCTOR

ADD VISITOR
VISITOR LIST

Prisoner Registration:

All the basic information of every prisoners will be stored there. Their prisoner id, first name, last name ,gender, age, blood group. Admin can add up a new prisoner in this database or delete anyone out from this database or can simply search a prisoner by their unique id.

Prisoner Registration

Last Name

First Name

Gender
 Male Female Others

Date of Birth

Cell

Blood Group

address

Criminal Type
 New Old

Crime Type
 Murder Attempt to Murder Rape Robbery forgery Judiciary

Arrival Date

Allocatd Cell

Case no

Add Duty Officer:

Prisoner has its duty officers. Admin can add basic data of a duty officer such as Name, id, blood group, salary, religion, joining date, work shift, contact no etc.

Duty Officer Registration

Last Name

First Name

Rank

Gender
 Male Female Other

Blood Group
A Positive

Salary

Religion
 Islam Hindu Buddha Christian

Joining Date
mm / dd / yyyy

Working Shift

Contact NO

Delete Duty Officer:

A prisoner can be deleted from this section if anyone dies or removed or transferred.

Enter The Duty Officers ID To Delete!

Delete #ID

Search Prisoner by ID:

If any prisoners specific information needed then this search option can be used for retrieving all data of a specific prisoner.

Add Employee:

Prisoner has its employees. Admin can add basic data of an employee such as Name, id, blood group, salary, religion, joining date, work shift, contact no etc.

Employee Registration

Last Name

First Name

Gender
 Male Female Others

Age

Religion
 Islam Hindu Buddha Christian

Blood Group

Department Name

Contact NO

Joining Date

Salary

Employee List:

From here the inserted list of employees can be viewed at a time.

Delete Employee:

Employee can be deleted from here by the unique id if needed.

Enter The Employee ID To Delete!

Delete #ID

Delete

Add Visitor:

If anyone comes to visit to a prisoner then his information will be added here.

Visitor Registration

Last Name

First Name

Mobile

Address

Arrival Date

Arrival Time

Visited To

Submit

Visitor List:

When all data of visitor needed this section will retrieve all the saved information of visitors.

Add Doctor:

Doctor Registration

Last Name

First Name

Speciality

Gender
 Male Female Others

Salary

Religion
 Islam Hindu Buddha Christian

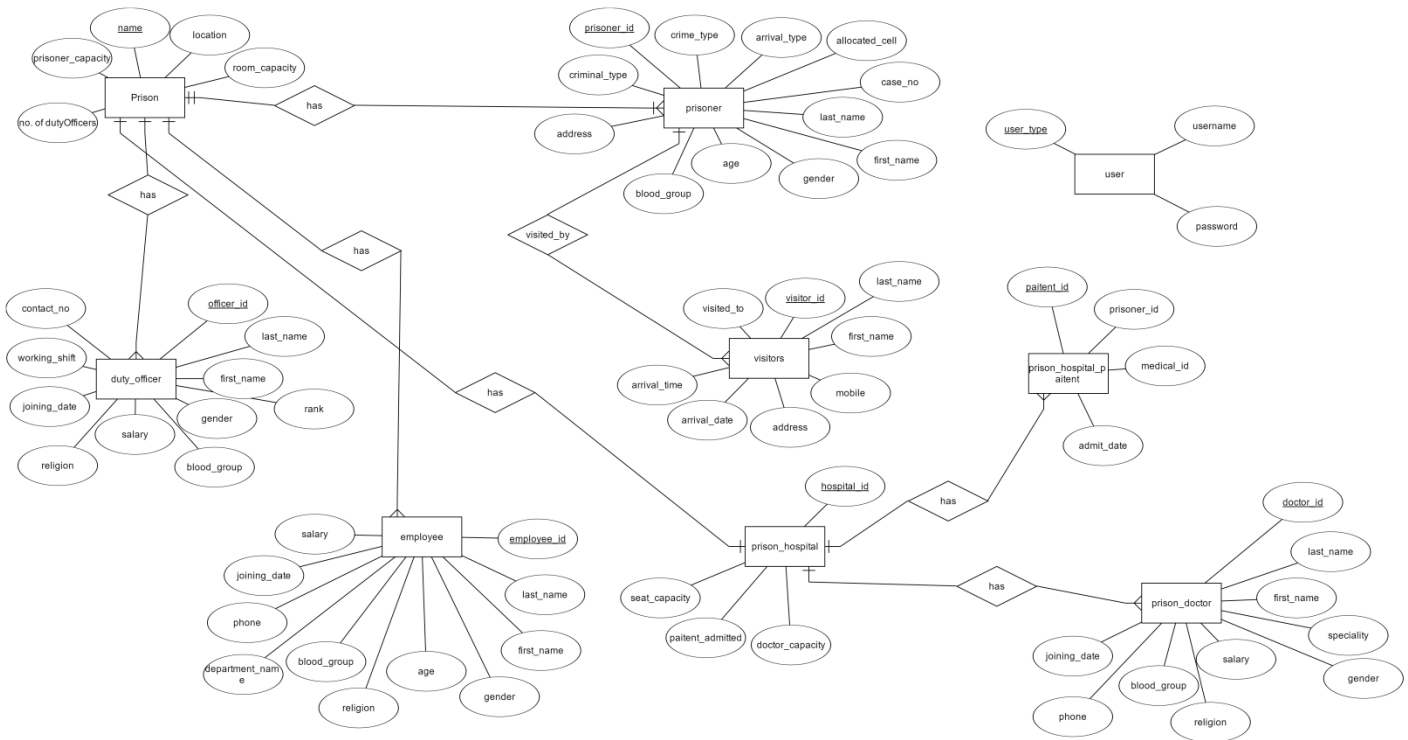
Blood Group

Contact NO

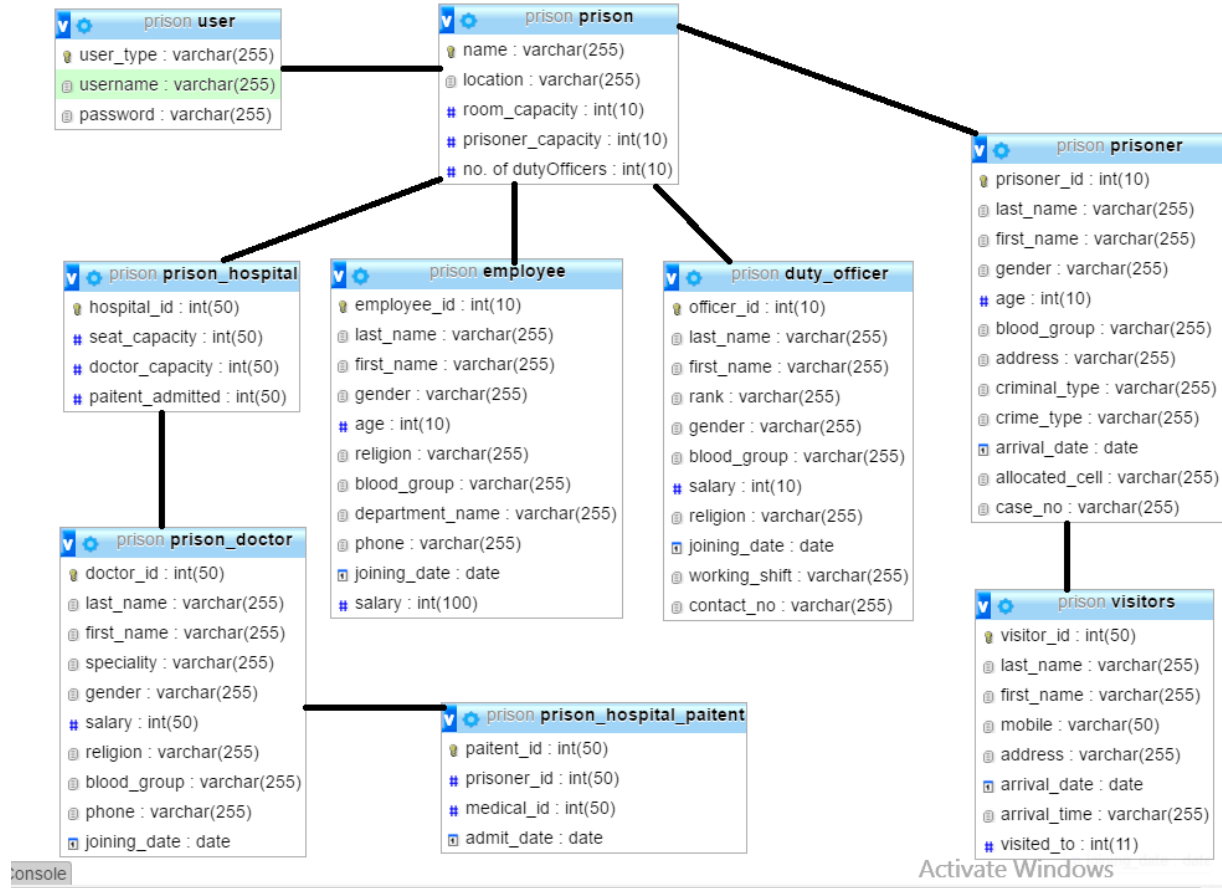
Joining Date

Submit

ER Diagram:



Schema Diagram:



Data flow diagram:

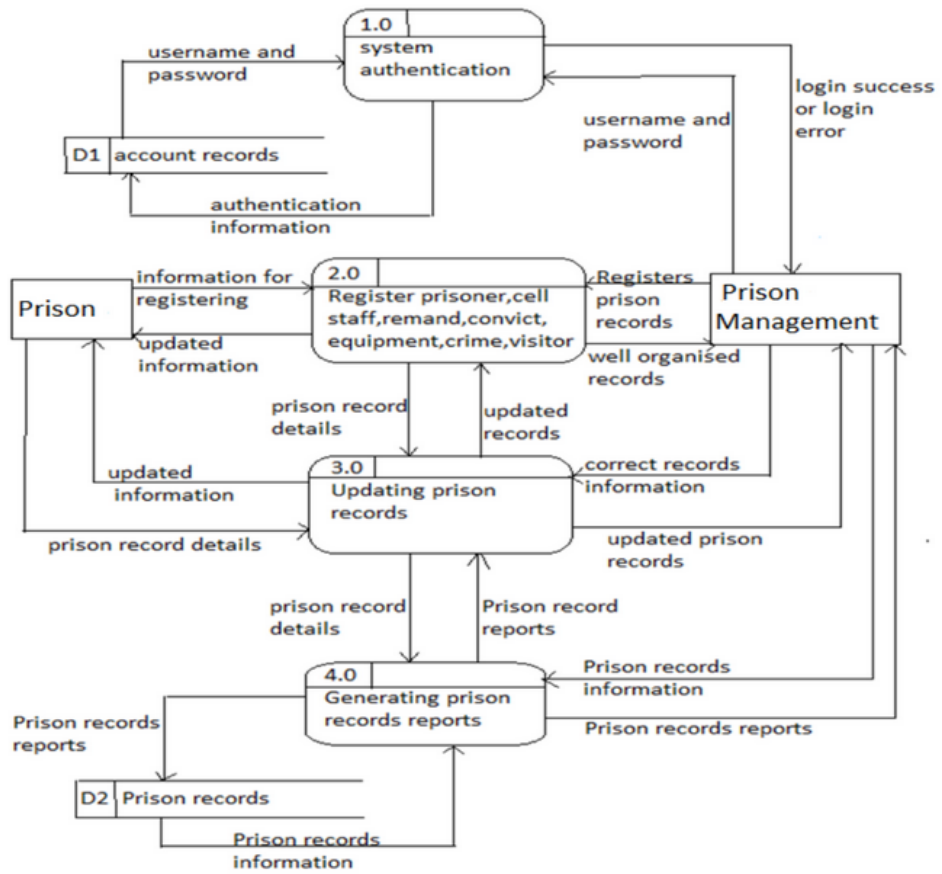


Figure 1: Data flow diagram for the proposed system

Sequence Diagram:

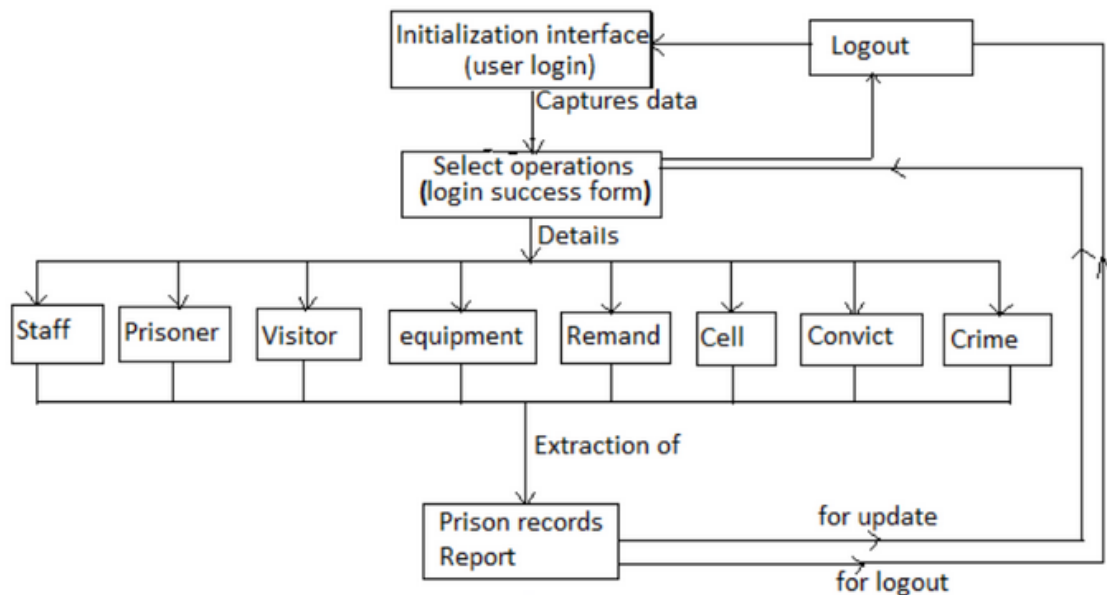


Figure 2: System Execution Sequence

Normalization:

Database normalization is the process of organizing the columns (attributes) and tables (relations) of a relational database to minimize data redundancy. Normalization involves decomposing a table into less redundant (and smaller) tables without losing information. It is a technique of separating redundant fields. One type of normalization is defining foreign keys in the old table referencing the primary keys of the new ones. The objective is to isolate data so that additions, deletions, and modifications of an attribute can be made in just one table and then propagated through the rest of the database using the defined foreign keys.

There are mainly three forms of normalization. They are:

- 1st Normal Form
- 2nd Normal Form
- 3rd Normal Form

We have designed a database that goes through the above three Normal Forms for our proposed system.

The requirements to satisfy the 1st Normal Form:

- Each table has a primary key: minimal set of attributes which can uniquely identify a record
- The values in each column of a table are atomic (No multi-value attributes allowed).
- There are no repeating groups: two columns do not store similar information in the same table.

The requirements to satisfy the 2nd Normal Form:

- Redundant data across multiple rows of a table must be moved to a separate table.
- The resulting tables must be related to each other by use of foreign key.

The requirements to satisfy the 3rd Normal Form:

- Eliminate fields that do not depend on the primary key
- That is, any field that is dependent not only on the primary key but also on another field must be moved to another table.

Normalization(Con't):

Queries:

For connection:

```
<?php
$db['hostname'] = "localhost";
$db['username'] = "root";
$db['password'] = "";
$db['database'] = "prison";

// Create connection
$con = mysqli_connect($db['hostname'],$db['username'],$db['password'],
$db['database']);

// Check connection
if (mysqli_connect_errno())
{
    echo "Failed to connect to Mysql: " . mysqli_connect_error();
}
echo "Connected successfully";
?>
```

We get Data from user input with <form> and pass the data to save_.....php by POST method.

Example:

Save_prisoner.php

```
<?php
```

```
include_once "connection.php";
```

```
$sql="INSERT INTO prisoner
```

```
(last_name,first_name,gender,age,blood_group,address,criminal_type,crime_
type,arrival_date,allocated_cell,case_no)
```

```
VALUES('".$_POST['last_name']. "','".$_POST['first_name']. "','".
$_POST['gender']. "','".$_POST['age']. "','".$_POST['blood_group']. "','
    '".$_POST['address']. "','".$_POST['criminal_type']. "','".
$_POST['crime_type']. "','".$_POST['arrival_date']. "','".
$_POST['allocated_cell']. "','".$_POST['case_no']. "')";
```

```
if(mysqli_query($con, $sql)){
```

```
?>
```

```
<h1>Member Added Successfully!</h1>
```

```
<?php
```

```
}
```

```
else
```

```
{
```

```
    echo "Error: ". $sql . "<br>" . mysqli_error($con);
```

```
}
```

```
mysqli_close($con);
```

```
?>
```

In same way we add data of duty officer ,doctors, employees and visitors.

After saving data we view all the data from database.

Example: prisoner list.php

```
<?php
```

```
include_once "connection.php";
```

```
if(!mysqli_connect_errno())
```

```
{
```

```
    $prisoners = mysqli_query($con,"SELECT * FROM prisoner ORDER BY  
prisoner_id");
```

```
        mysqli_close($con);
```

```
}
```

```
?>
```

```
<center><h1> Prisoner List </h1></center>
```

```
<center><p> This is a list for prisoners who are registered here  
</p></center>
```

```
<table>
```

```
<thead>
  <th>ID</th>
  <th>Name</th>
  <th>Gender</th>
  <th>Criminal Type</th>
  <th>Age</th>
  <th>Arrival Date</th>
  <th>Allocated cell</th>
  <th>Crime Type</th>
  <th>Blood Group</th>
  <th>Address</th>
  <th>Case No.</th>

  <th></th>
</thead>
<tbody>
  <?php
  $sl_no=1;
  foreach($prisoners as $prisoner){ ?>

    <tr>

      <td><?php echo $prisoner['prisoner_id'];?> </td>

      <td><?php echo $prisoner['first_name'].' '.
$prisoner['last_name'];?> </td>
```



```
<td><?php echo $prisoner['gender'];?></td>
```

```
<td><?php echo $prisoner['criminal_type'];?></td>
```

```
<td><?php echo $prisoner['age'];?></td>
```

```
<td><?php echo $prisoner['arrival_date'];?></td>
```

```
<td><?php echo $prisoner['allocated_cell'];?></td>
```

```
<td><?php echo $prisoner['crime_type'];?></td>
```

```
<td><?php echo $prisoner['blood_group'];?></td>
```

```
<td><?php echo $prisoner['address'];?></td>
```

```
<td><?php echo $prisoner['case_no'];?></td>
```

```
</tr>
```

```
<?php
```

```
$sl_no++;
```

```
};?>
```

```
</tbody>
```

```
</table>
```


We can also DELETE DATA(row) from database .
Example: delete prisoner.php

```
<?php
    if(isset($_POST['delete'])) {
        $dbhost = 'localhost';
        $dbuser = 'root';
        $dbpass = '';
        $conn = @mysql_connect($dbhost, $dbuser, $dbpass);

        if(! $conn ) {
            die('Could not connect: ' . mysql_error());
        }

        $prisoner_id = $_POST['prisoner_id'];

        $sql = "DELETE FROM prisoner WHERE prisoner_id = $prisoner_id" ;
        mysql_select_db('prison');
        $retval = mysql_query( $sql, $conn );

        if(! $retval ) {
            die('Could not delete data: ' . mysql_error());
        }

        echo "Deleted data successfully\n";

        mysql_close($conn);
    }else {
```

?><center>

<p>

Future Plan:

It's recommended that the following modules, be added to the developed system (web based system to keep track of information in prisons) so as to perform more tasks:

- i. The system should be integrated with the criminal justice system to form a mega system that spans over all facets of the justice system. This will enhance synchronization and transfer of information between the court of law and Uganda Prisons Service.
- ii. The developed system component can have the capability to be used in different languages. Further work is recommended so that it can have the capability of being usable in local Languages like Luganda , Rufumbira/Runyarwanda and Swahili for the East African region.

Cost Analysis:

Conclusion:

In search query we use “ `$query = mysql_real_escape_string($query);`”

To prevent SQLI (sql injection).

Because this system will contain sensitive information.

Our main goal to add and manipulate Data from database.

We have two types of user. Admin will have full access (write and read) data but officer in charge only could read the data.

Thank You.