

## **ABSTRACT**

The “Zoo Management System” project aims to streamline and enhance the administrative and operational functions of a zoo. This system integrates various aspects of zoo management, including animal care, visitor services, staff coordination, and inventory management. By leveraging modern software solutions, the project provides a user-friendly interface for tracking animal health records, managing ticket sales, scheduling staff shifts, and maintaining supply inventories. The implementation of this system ensures efficient resource utilization, improved visitor experience, and better animal welfare. Ultimately, the Zoo Management System facilitates a more organized and effective management, optimizing the overall project management experience.

# CONTENTS

<b>Chapter 1: Introduction</b>	<b>Page no.</b>
1.1 Introduction	1
1.2 Problem Definition	2
1.3 Objective of the Problem	2
<b>Chapter 2: System Analysis</b>	
2.1 Existing System	3
2.2 Proposed System	4
2.3 System Requirement Specification	5
2.3.1 Functional Requirements	5
2.3.2 Non-Functional Requirements	6
<b>Chapter 3: System Design</b>	
3.1 ER Diagram	7
3.2 Dataflow diagram	8
3.3 Schema Diagram	9
<b>Chapter 4: Implementation</b>	
4.1 Implementation	10
<b>Chapter 5: Testing</b>	
5.1 Test Cases	11
<b>Chapter 6: User Manual</b>	
6.1 Snapshots of the User Interfaces	12
<b>Chapter 7: Conclusion</b>	16
<b>Chapter 8: References</b>	17

## FIGURES

Figure 1- Entity Relationship Diagram	7
Figure 2- Dataflow Diagram	8
Figure 3- Schema Diagram	9

## SNAPSHOTS

Snapshot 1- Home Page	12
Snapshot 2- Image Gallery Page	12
Snapshot 3- Animals Page	13
Snapshot 4- Login Page	13
Snapshot 5- Visitor Registration Page	14
Snapshot 6- Ticket Booking Page	15
Snapshot 7- Dashboard Page	15

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 INTRODUCTION TO THE ZOO MANAGEMENT SYSTEM:**

The Zoo Management System project is designed to revolutionize the way zoos handle their day-to-day operations and long-term planning. Zoos are complex institutions that require meticulous coordination of various functions, from animal care and visitor services to staff management and inventory control.

Traditional methods of managing these functions can be time-consuming, error-prone, and inefficient. This project introduces a comprehensive software solution that automates and integrates these diverse aspects into a single, cohesive system.

The Zoo Management System provides a centralized platform for maintaining detailed records of animal health and behaviour, streamlining ticketing processes, scheduling staff shifts, and managing supplies. By incorporating modern technology, this system not only enhances operational efficiency but also improves the overall experience for visitors and ensures better welfare for the animals.

The introduction of such an innovative management tool is essential for modern zoos aiming to maintain high standards of care, enhance educational outreach, and ensure sustainable operations

## 1.2 PROBLEM DEFINITION:

The Zoo Management System addresses inefficiencies in managing animal care, visitor services, staff scheduling, and inventory control. Current manual or fragmented systems lead to errors, data redundancy, and time-consuming processes. This project provides an integrated, automated solution to enhance operational efficiency and overall effectiveness.

## 1.3 OBJECTIVE OF THE PROBLEM:

The objectives of the Zoo Management System project are:

- **Enhance Animal Care:** Ensure comprehensive and up-to-date records of animal health, feeding schedules, and medical history.
- **Improve Visitor Services:** Streamline ticketing processes, reduce wait times, and provide better information and personalized services.
- **Optimize Staff Coordination:** Efficiently schedule and manage staff shifts to improve productivity and prevent understaffing or overstaffing.
- **Streamline Inventory Management:** Maintain accurate tracking of supplies and resources to prevent shortages or overstocking and reduce operational costs.
- **Integrate Data:** Consolidate data across all departments for consistent, accurate, and holistic views of zoo operations.

# CHAPTER 2

## SYSTEM ANALYSIS

### 2.1 EXISTING SYSTEM AND CURRENT SITUATION [1][2]

The existing system for managing zoo operations typically relies on a combination of manual processes and fragmented digital tools. Key characteristics of the current system include:

- **Manual Record-Keeping:** Animal health and medical records are often maintained in paper files or basic digital documents, leading to difficulties in updating and retrieving information.
- **Fragmented Ticketing Systems:** Ticket sales and visitor management are handled through separate platforms, resulting in longer wait times and poor visitor experience.
- **Disjointed Staff Scheduling:** Staff shifts and schedules are managed manually or through basic scheduling software, leading to inefficiencies and potential staffing issues.
- **Inconsistent Inventory Management:** Supplies and resources are tracked using spreadsheets or standalone inventory systems, causing inaccuracies and inefficiencies in stock management.
- **Lack of Integration:** Data is siloed across various departments, making it challenging to gain a comprehensive view of zoo operations and leading to data redundancy and inconsistencies.

#### ➤ CURRENT SITUATION

Currently, many zoos rely on a combination of manual processes and fragmented digital tools to manage their operations. This results in several inefficiencies, such as maintaining paper-based records for animal care, which are prone to errors and difficult to update. Visitor management systems are often disjointed, leading to long wait times and subpar visitor experiences. Staff scheduling is handled manually or with basic software, causing coordination challenges and productivity issues. Inventory tracking is inconsistent, leading to overstocking or shortages. Overall, the lack of integration and automation hinders the zoo's ability to operate smoothly and effectively, highlighting the need for a comprehensive Zoo Management System.

These inefficiencies not only strain the resources of the zoo but also impact the quality of care provided to the animals and the overall visitor experience. The current situation underscores the urgent need for a modern, integrated solution to streamline operations and enhance the effectiveness of zoo management.

## 2.2 PROPOSED SYSTEM:[2][4][6][7]

The proposed Zoo Management System aims to modernize and integrate zoo operations through a comprehensive software solution. Key features of the proposed system include:

- **Centralized Animal Care Management:** A digital platform to maintain detailed and up-to-date records of animal health, feeding schedules, and medical history, ensuring better care and welfare.
- **Integrated Ticketing System:** An efficient and user-friendly system for managing ticket sales, reducing wait times, and enhancing the visitor experience with online booking and real-time updates.
- **Automated Staff Scheduling:** Advanced scheduling tools to optimize staff shifts, improve productivity, and always ensure adequate staffing levels.
- **Efficient Inventory Management:** A robust inventory tracking system to monitor supplies and resources accurately, preventing shortages and overstocking, and reducing operational costs.
- **Data Integration and Analytics:** A unified platform that consolidates data from all departments, providing consistent, accurate, and holistic views of zoo operations, enabling better decision-making and strategic planning.

## 2.3 SYSTEM REQUIREMENT SPECIFICATION

### 2.3.1 FUNCTIONAL REQUIREMENTS:<sub>[1][3][7]</sub>

#### 1. Animal Care Management:

- Detailed Records: Maintain comprehensive records of animal health, medical history, feeding schedules, and behavioural observations to ensure proper care and welfare.
- Alerts and Notifications: Implement alerts and notifications for veterinary check-ups, medication schedules, and other critical events to ensure timely care.

#### 2. Visitor Management:

- Integrated Ticketing System: Provide a seamless ticketing experience for visitors, including online ticket purchases, real-time availability updates, and options for different ticket types (e.g., general admission, special exhibits).
- Visitor Information Portal: Offer a user-friendly portal with detailed information on exhibits, shows, events, and amenities to enhance the visitor experience.

#### 3. Staff Scheduling:

- Automated Scheduling: Develop an automated staff scheduling system that optimizes shift assignments based on workload, skills, and availability to ensure adequate coverage and minimize labour costs.
- Communication Tools: Provide communication tools for staff to receive updates, notifications, and task assignments in real-time, improving overall staff coordination and productivity.

#### 4. Inventory Management:

- Inventory Tracking: Implement a robust inventory management system to track supplies, feed, and equipment usage accurately.
- Alerts and Reports: Set up automated alerts for low inventory levels and generate detailed reports on inventory usage, costs, and trends to facilitate efficient resource management and procurement decisions.



## 2.4 NON-FUNCTIONAL REQUIREMENTS:

- **Performance:**

Handle multiple concurrent users without performance issues.

Page load times  $\leq 3$  seconds.

- **Scalability:**

Support growing numbers of users and projects.

Scalable in terms of users and data storage.

- **Security:**

Strong encryption for data transmission and storage.

Secure login and protection against common threats.

- **Usability:**

Intuitive and user-friendly interface.

Accessible to users with disabilities.

- **Reliability:**

Uptime of at least 99.9%.

Robust error handling and data integrity.

- **Maintainability:**

Modular design for easy maintenance and updates.

Well-documented code

### 2.4.1 SOFTWARE REQUIREMENT:

- Operating System: Any modern operating system (Windows macOS, Linux)
- Web Browser: Latest versions of Google Chrome, Mozilla Firefox, Edge.
- Applications: Visual Studio Code, Notepad, XAMPP Control Panel App

### 2.4.2 HARDWARE REQUIREMENT:

- Processor: Intel Core Duo 2.0 GHz or higher.
- RAM: Minimum 512 MB or Greater.
- Hard disk: 20 GB (Free Space)

# CHAPTER 3

## SYSTEM DESIGN

### 3.1 ER DIAGRAM:

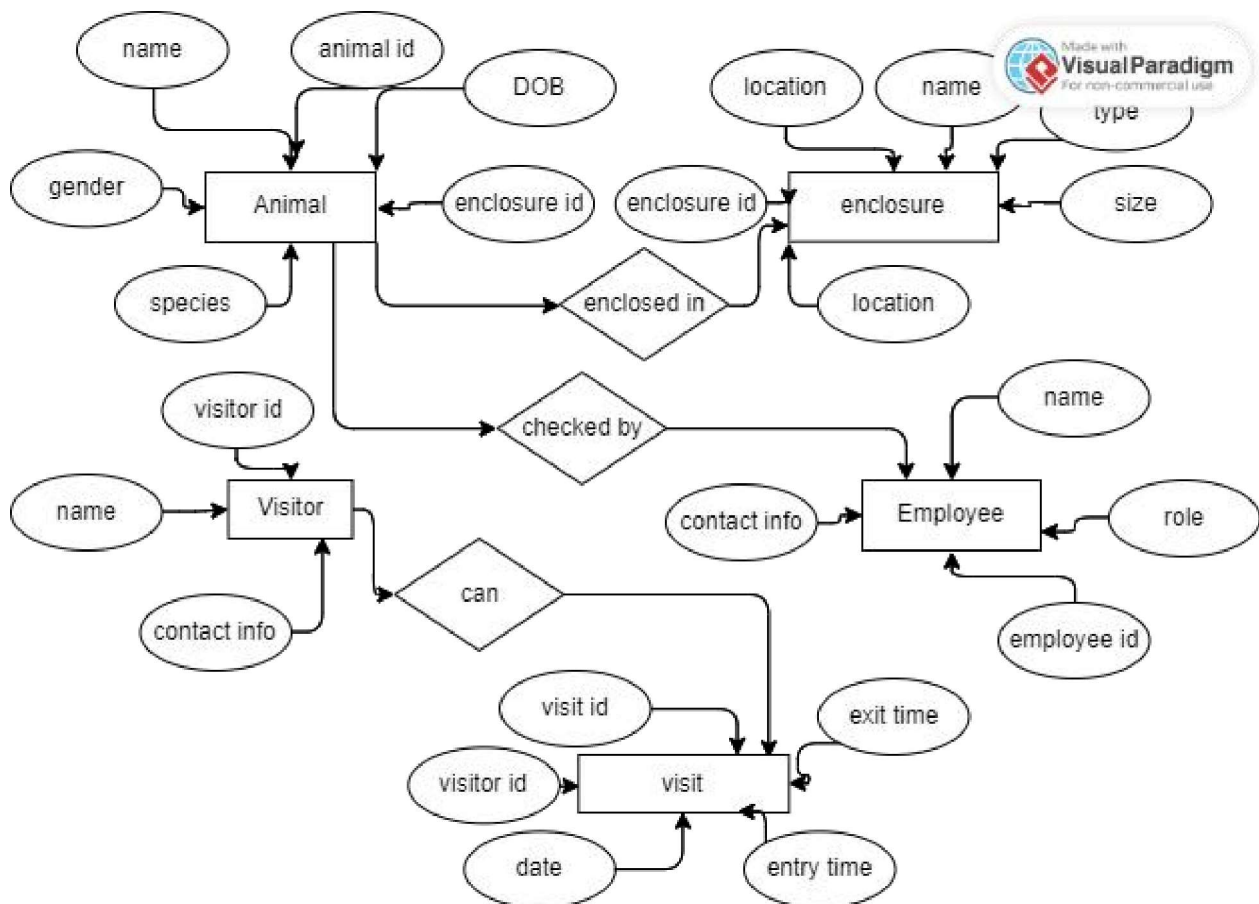


Figure: 3.1: ER Diagram

## 3.2 DATAFLOW DIAGRAM:

### Zero level DFD

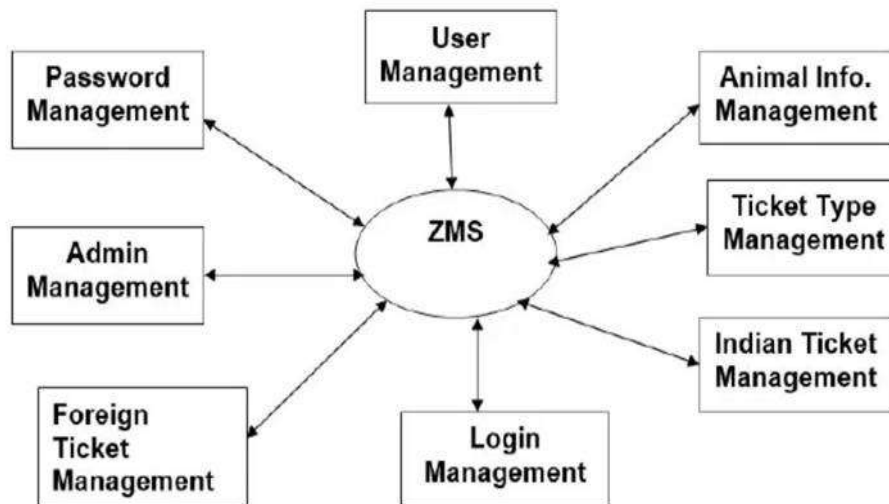


Figure: 3.2: Dataflow Diagram

### 3.3 SCHEMA DIAGRAM:

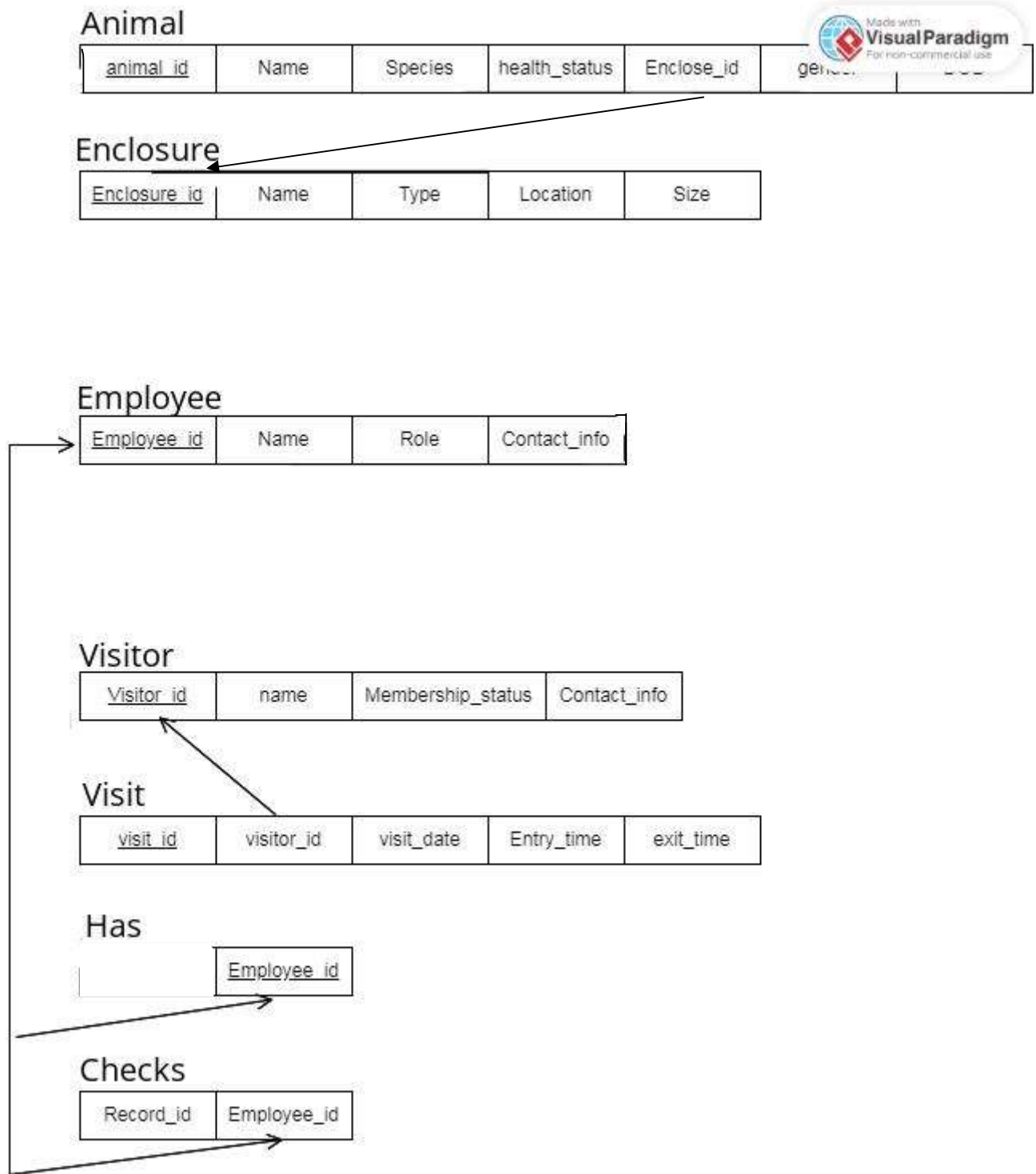


Figure: 3.3: Schema Diagram

# CHAPTER 4

## IMPLEMENTATION

- The Zoo Management System is designed to manage animals in a zoo efficiently. It consists of two primary components: the `Animal` class and the `Zoo` class. The `Animal` class initializes each animal with a name and species, encapsulating the animal's basic attributes.
- The `Zoo` class manages a collection of these animals, starting with an empty list. It includes methods to add animals to the zoo and to list all the animals present, returning their names and species.
- This system exemplifies a simple way to organize and retrieve information about zoo animals, demonstrating its functionality by creating instances of animals and adding them to a zoo instance, then printing out the list of animals.

# CHAPTER 5

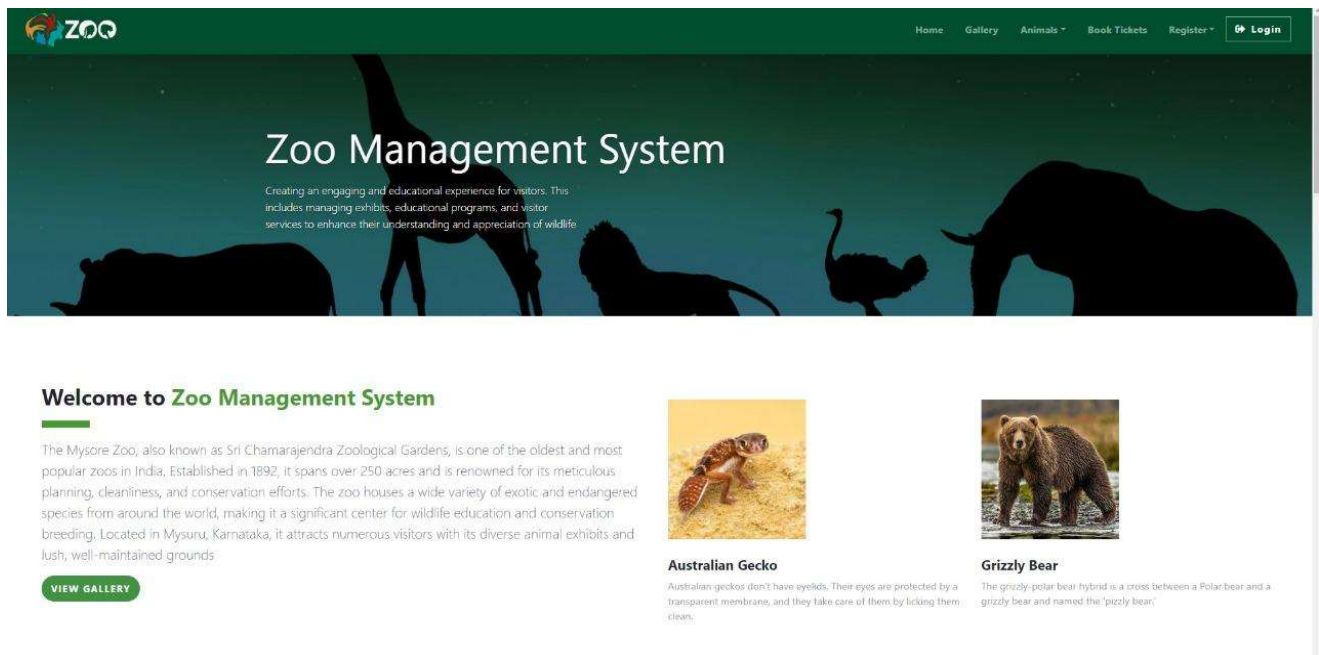
## TESTING

Test ID	Test Case	Expected Result	Result
T 01	Enter valid Details and click login	Opens dashboard	Pass
T 02	Enter invalid Details and click login	No details found	Pass
T 03	Enter valid details for ticket booking	Ticket booking successful	Pass
T 04	Enter invalid details for ticket booking	Ticket booking unsuccessful	Pass
T 05	Enter valid details in visitor registration	Resgistration successful	Pass
T 06	Enter valid details in visitor registration	Resgistration unsuccessful	Pass

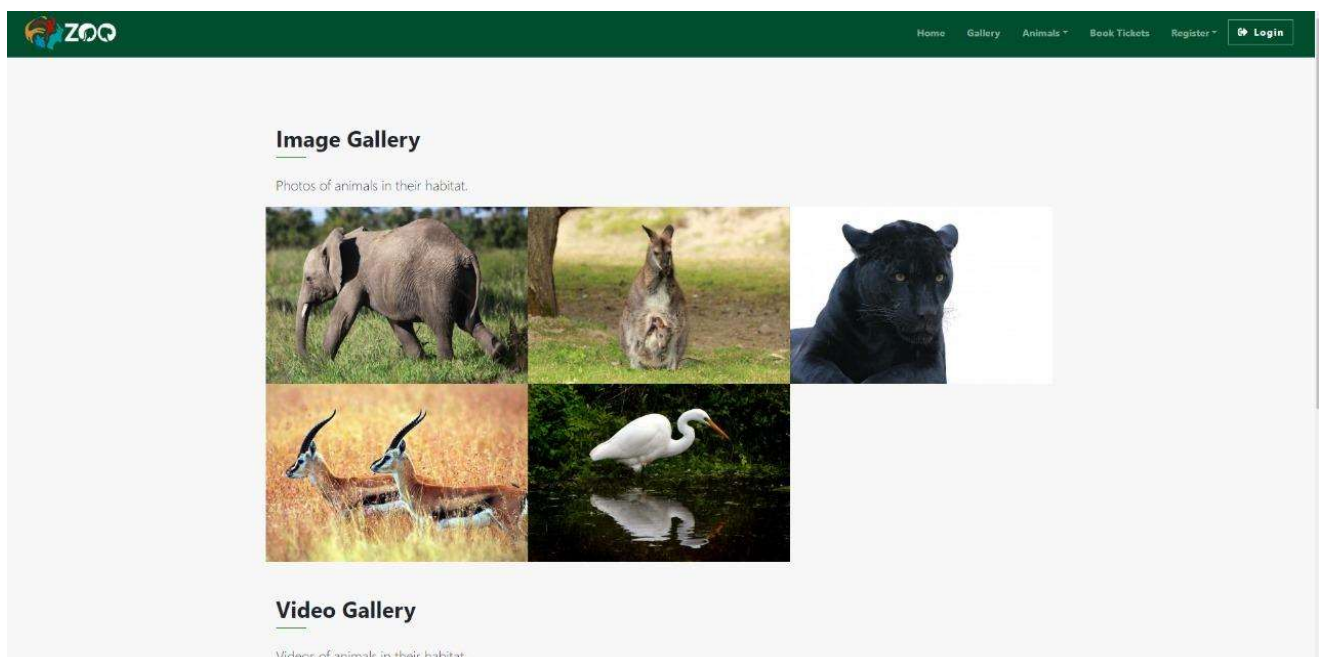
# CHAPTER 6

## USER MANUAL

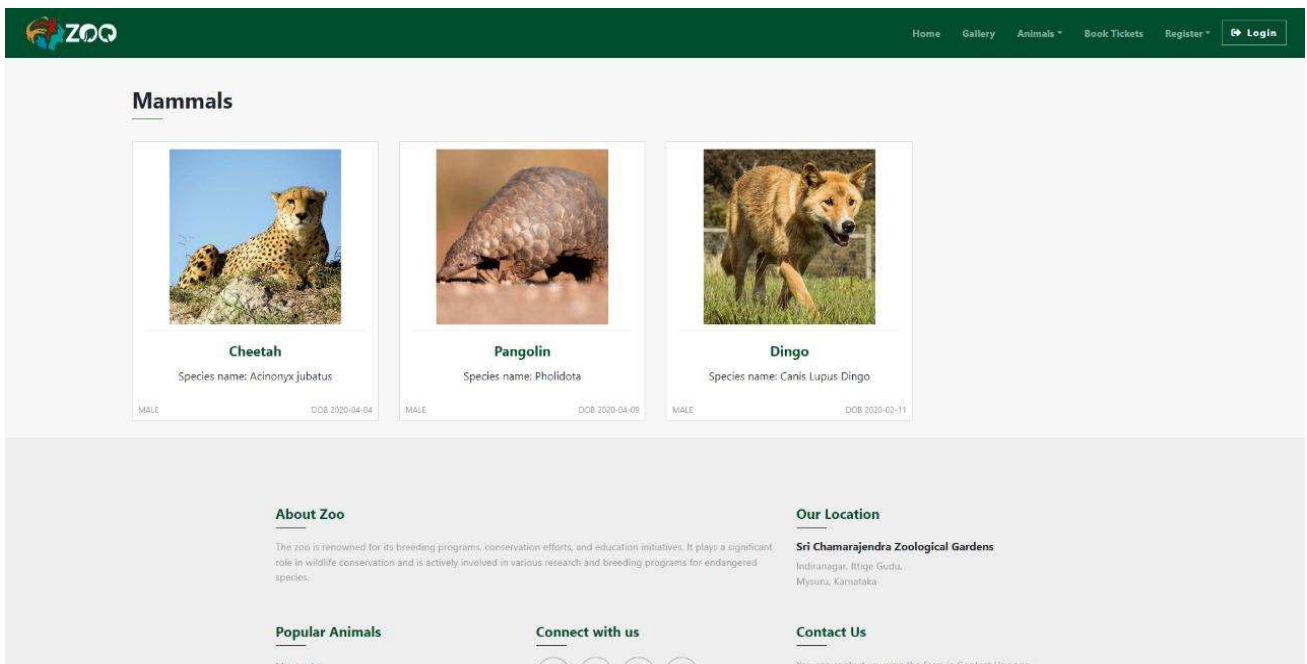
### 6.1 SNAPSHOTS OF THE USER INTERFACES:



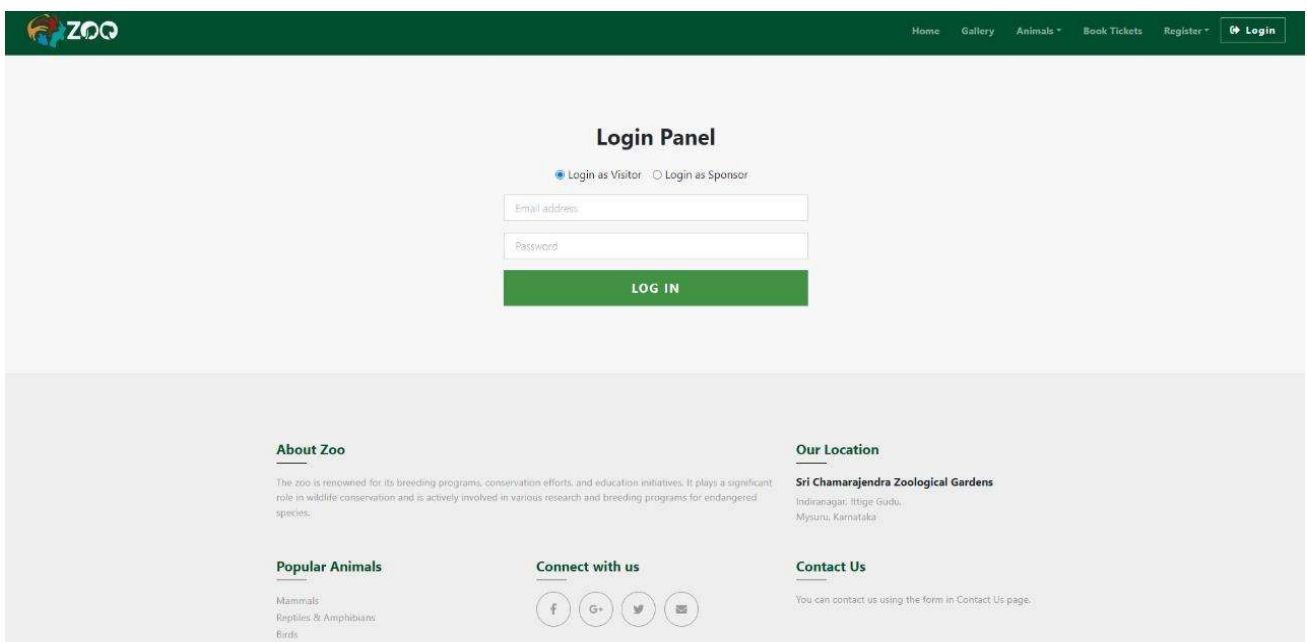
Snapshot 11 - Home page



Snapshot 12 - Image Gallery page




Snapshot 13 - Animals page



Snapshot 14 - Login page





[Home](#)
[Gallery](#)
[Animals](#)
[Book Tickets](#)
[Register](#)
[Login](#)

## Visitor Registration

First name\*

Last Name\*

Email\*

Address\*

Password\*

REGISTER PROFILE


[About Zoo](#)

The zoo is renowned for its breeding programs, conservation efforts, and education initiatives. It plays a significant

[Our Location](#)

Sri Chamarajendra Zoological Gardens

Snapshot 15 – Visitor Registration page



[Home](#)
[Gallery](#)
[Animals](#)
[Book Tickets](#)
[Register](#)
[Login](#)

## Book Tickets

Ticket Group	Price
Regular	Rs. 150
Student	Rs. 100
Child	Rs. 100

Select Number of Tickets

Name:

Regular:

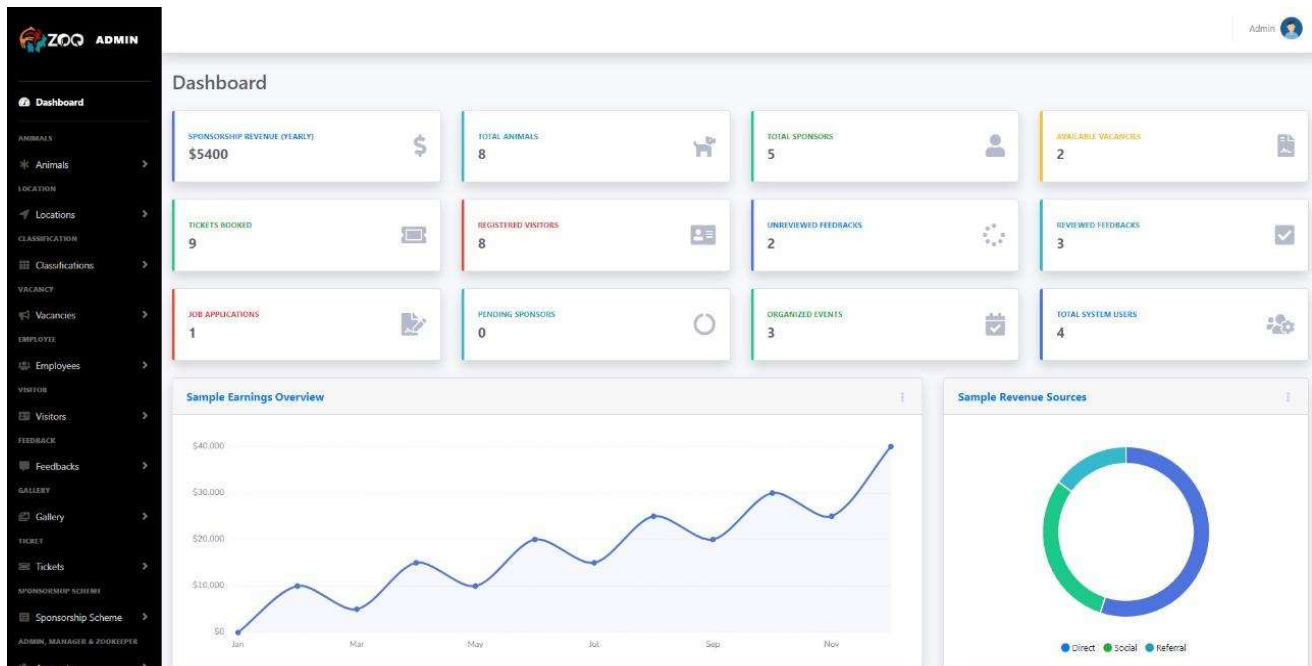
Student:

Child:

Date:

YOU HAVE TO BE LOGGED IN TO BOOK TICKETS

Snapshot 16 – Ticket Booking page



Snapshot 17 – Dashboard page

# **CHAPTER 7**

## **CONCLUSION**

In conclusion, the implementation of the Zoo Management System represents a pivotal step towards enhancing the operational efficiency and overall management of zoo facilities. By addressing key challenges such as animal care management, visitor experience enhancement, staff scheduling optimization, and inventory control, this system promises to significantly improve the quality of service provided by zoos.

Through its integrated approach and advanced functionalities, the Zoo Management System not only aims to streamline administrative tasks but also to elevate standards of animal welfare, foster a more engaging visitor experience, and empower staff with tools for better coordination and productivity. Ultimately, this system positions zoos to operate more sustainably, adapt to evolving needs, and maintain their roles as centres for education, conservation, and public enjoyment.

# CHAPTER 8

## REFERENCES

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