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1. Introduction

This is a project report of a software suite proposed for the Claybrook Zoo. This report includes the different techniques used to find out the problems of the current system of the zoo, the problems that were reported and the solution to those problems along with various steps involved to do so. By the end of the report, anyone with access to this report will be able to know problems of the current system of the zoo as well as the possible solutions to those problems in detail step-wise process.

1.1 Project Background

This project addresses the problems faced by the current management system of the Claybrook Zoo. Currently, Claybrook zoo uses clerical system to manage everything in their zoo which, in today's time, has become almost impossible to manage, difficult to keep track of and unsafe. So, this project takes consideration of all this impediments of the zoo and finds and works on ways to tackle those.

For this project to perform at its best, some detailed research of the problems is to be carried out. All the solutions that are developed must be in terms with what and how the client wants the system to be and how will it perform.

With the help of different techniques, every problem of the old system will be detailed out and on that basis, the preparation for an appropriate resolution will be prepared. Properly monitoring how the current system is doing and what different and unique features the upcoming one will have to bring so that it will not face the same problems again along with assisting the users to make the management effortless, the project will move forward.

In the end, the project will be able to counter all the problems faced by the current clerical system of the zoo. From having every data being stored in a thoroughly managed data management system to being able to keep all the information and online services in a website, this project will try to erase every problem the zoo currently faces.

1.2 Project Aims and Objectives

The major aim of this project is to develop a software suite comprising of a website, a record management system and a kiosk system. All of these software will help the zoo to tackle the necessary problems that the current system of the zoo has to comply with.

The objectives of this project is listed below.

- Use various techniques to figure out the problem domain of the current system of the zoo.
- Find out each and every problem the zoo is going through in details.
- Document all the impediments found.
- Search for the necessary solutions for those documented problems.
- Prepare effective planning and course of actions to develop the solution set.
- Thorough and meticulous development of the software set with respect to the client's demands and expectations.
- Make sure all the require functionalities are included in the software and each of them function fully.
- Evaluate and test all the aspects of the software product.
- Check and present the final and correct system to the client.

1.3 Project Development Methodology

The project development methodology used to build this software is agile software development methodology.

Agile Methodology is a practice that supports continuous iteration of development and testing throughout the software development life cycle of the project.

This agile methodology of software development is one of the most effective and one of the simplest processes to convert a business necessity into software solutions.

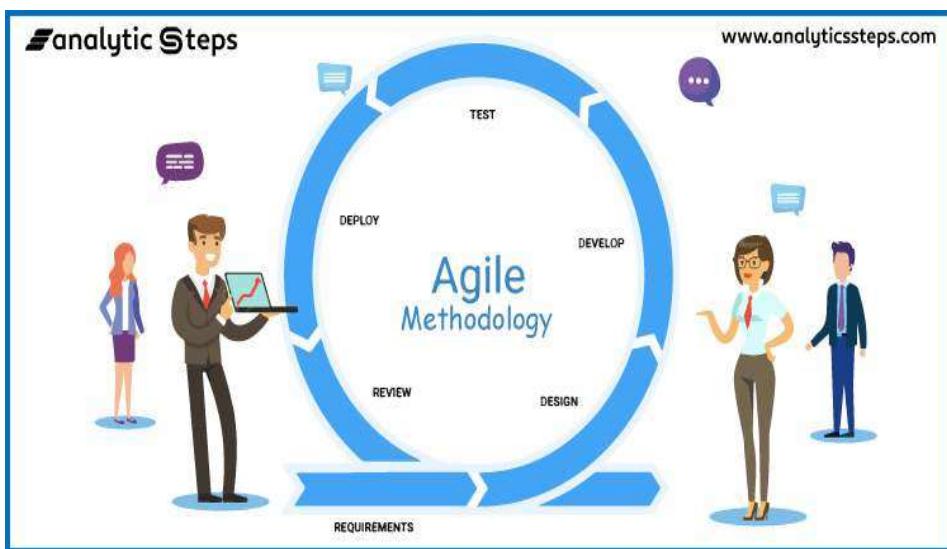
Agile, a term used to explain software development approaches that implies continual planning, improvement, learning team collaboration, evolutionary development and early delivery. It exhorts flexible responses to change.

The agile software development methodology underscores four central values.

- Individual and group / team interactions over tools and processes.
- Functioning software over comprehensive documentation
- Client / customer collaboration and co-operation over contract negotiation
- Responsive to alterations over following a definitive plan.

We used this methodology so that the development of this project would be dynamic, and we would be ready for any client changes in the software suite to give them the best product.





2. Requirement Engineering

2.1 Elicitation Activities

This part necessitate group work for carrying out interview plans of the project and collect various information regarding problem domain & requirements like review of different comparable software system, applicable rules and regulation of the project and personal inventory of visitors in the zoo.

2.1.1 Interview Plans

As one of the problem domain investigation technique, questions were prepared to be asked to the key stake holders of the Claybrook Zoo in an interview scheduled.

The questions from the plans is noted below. During the interview, in order to get further insights to the interviewees' answer, some additional questions were also asked which is well documented in the Interview Findings section.

Questions

1. Matthew Jones (Zoo Manager)

- i. What is your main goal in expanding the zoo into the Internet World?
- ii. How difficult is it in the clerical system?
- iii. Would you like to add any new features in the site, for example, virtual tour, shops, chats and others?
- iv. How would you wish to manage your site, like, in terms of theme, fonts, designs and overall looks of the site?
- v. Have you visited other zoo's website? If yes was there anything special you were fascinated by?
- vi. As we are already aware, data are highly sensitive. So who else will have the administrative access to the software and its products?
- vii. How much budget have you allocated for this project?
- viii. What would be the launch date for this software?

- ix. Can you briefly explain the record management system?
- x. Would you like to tell something about the mobile application?

2. Thomas Smith (Regular Visitor)

- i. What is your opinion on the Claybrook Zoo's upcoming modernization?
- ii. How would you like to rate the current management and services of the zoo?
- iii. As someone who has good insight into the current visiting experience, what is the most and the least attractive aspect of the zoo?
- iv. Any attribute of other zoo websites that you found useful during zoo visits?
- v. Zoo is planning to make an online ticket system so, are you comfortable with an online payment system?
- vi. What do you expect from the zoo administrations regarding changes?
- vii. Zoo is thinking to add a Kiosk system, you mentioned problems earlier there is no banner, direction in the right place, So what do you think about how the Kiosk system helps visitors like you to get a better understanding of the place?
- viii. What particular thing adding is the most needed change in this zoo?

3. Jonathan Rodgers (Zoo Administrator)

- i. What exactly is animal sponsorship scheme?
- ii. How can one apply to be a sponsor?
- iii. How do you manage the schemes in the clerical system and what are your expectations with the proposed one?
- iv. How are the sponsorship agreements accessed or monitored?
- v. Could you explain about the sponsorship agreement?
- vi. Could you briefly explain about the payment processes related to sponsorships?

- vii. Are there any facilities for sponsors on zoo visit?
- viii. Are there any category of sponsors?
- ix. How much space must be allocated for sponsors in the website?
- x. How do you suppose should we keep track of data in the website?

4. Phillip Brown (Sponsor / Local Business Owner)

- i. Why are you sponsoring Claybrook Zoo?
- ii. Do you think Claybrook and its software can benefit you in other ways not just the publicity of your business?
- iii. Any sponsorship scheme of another zoo that you like to see in the new system?
- iv. How can we influence more local businesses to sponsor zoos like Claybrook?
- v. Would you like to include something on your behalf that might be important for this software?
- vi. Do you find any extra benefits of sponsoring Claybrook Zoo above others?

2.1.2 Interview Findings

2.1.2.1 Interview Title: Initial Interview with the manager - Matthew Jones

Interview: Date: 15/11/2021

Duration: 30 minutes

Persons in attendance:

- Saurab
- Nishita
- Sadikshya

The questions and their respective answers for this interview are detailed in the table below:

Interviewer	Question Number	Question Client - Response
1		Motive and current restrictions
Saurab	01	<p><u>What is your main goal in expanding the zoo into the Internet World?</u></p> <p>Since all the works are done manually, a need to establish a computerized system where all the records of animals as well as that of staff involved in zoo are stored.</p> <p>Moreover, all the systems that are paper based and that are in chaos are to be managed in a systematic order so that, all the records can be effortlessly accessible, and all the materials can be accessed via one single system.</p>
2		Business Model
Nishita	02	<p><u>How difficult is it in the clerical system?</u></p> <p>All the records and data are to be kept in the paper which can create a lot of problems. Paper can wear out, can be damaged or when they get too old, it will be extremely difficult to keep track of the records.</p> <p>Confidential: Zoo is facing difficult situation. The visitors are declining every day, a result of the current manual system. So, the computerized system can help the visitors to book tickets in advance, see the timeframe for the zoo helping them not stand in the queue for long time just to get an entry.</p>
3		Required website functionality

Sadikshya	03	<p><u>Would you like to add any new features in the site, for example, virtual tour, shops, chats and others?</u></p> <p>Not now though would love to have that in the future. Might come as an enhancement to the website.</p>
4	Presentation style	
Sadikshya	04	<p><u>How would you wish to manage your site, like, in terms of theme, fonts, designs and overall looks of the site?</u></p> <p>A system which has simple looks but which also feels elegant. Everything in the site should look simple and easily comprehensible. This site focuses on convenient access to everyone, from children to old age people, so everyone should be able understand and access the website in a comfortable way.</p> <p>Furthermore, the appearance of the site must be able to give the visitors an idea of what they can see and expect from the zoo.</p>
Saurab	05	<p><u>Following the previous question, would you like to have a separate segment divided for people of different age group?</u></p> <p>Yes, of course. There should be a segment for children where they can have a view of the children park inside the zoo.</p> <p>As already said, the zoo emphasizes on people of all age group, so when adults visit the site, overall as a site, it should give them a sense of fresh environment and fresh air where they can view wildlife of their liking, old or new.</p>
Sadikshya	06	<p><u>Have you visited other zoo's website? If yes was there anything special you were fascinated by?</u></p> <p>Currently, Chester zoo and Blackpool Zoo are the two rivals of the zoo.</p> <p>The mentioned zoos have a children park of their own and a completely organized computerized system. These are the two competitors that have been visited so far.</p>

Saurab	07	<p><u>Would you like to include any feature of the zoos' website that you just mentioned?</u></p> <p>No. About the features, a file is attached including every additional features required, and it would be lovely if all of those were included in the website if possible.</p>
5.	RMS details	
Nishita	08	<p><u>As we are already aware, data are highly sensitive. So who else will have the administrative access to the software and its products?</u></p> <p>Obviously, the zoo manager will have the access to the system. Along with the manger, Jonathan Rodgers who is the administrator chief, will have the admin access. All the admin sites will be handled by him.</p> <p>The manager will just check if the system deployed is correct or not, and Jonathan Rodgers will take over from the administrator perspective.</p>
Sadikshya	09	<p><u>Can you briefly explain the record management system?</u></p> <p>It should contain records of every data related to the zoo. Records of all the staff working there, records of the old as well as the new animals, the incoming and outgoing of them or their transfer. Other things that it should keep record of are the sponsorship program, the current sponsors of the zoo and the data connected to other faculties as well.</p>
Sadikshya	14	<p><u>Would you like your staff to have access to all the records?</u></p> <p>No, most of the records are not meant to be share with the staff of the zoo.</p>
6.	Time and Budget	

Nishita	10	<p><u>How much budget have you allocated for this project?</u></p> <p>The budget for this project is 2.5 million pounds.</p>
Nishita	11	<p><u>What would be the launch date for this software?</u></p> <p>The software will be launched on 5th of December. So, the project is expected to be completed before December 5th.</p>
Saurab	12	<p><u>Earlier you did mention problems about people having to wait in lines or not having the Kiosk system. How do you expect this software to help you minimize those problems or even improve the things that have been here?</u></p> <p>First and foremost, this software is expected to help all the systems in the zoo to be in order and expunge randomness. For instance, the visitors will be able to purchase tickets at a certain time period of their choice as per their booking beforehand, reducing the crowd around the area and not having to wait in the queue for long.</p> <p>In case of kiosk system, it is expected to help the visitors to navigate themselves throughout the zoo. The kiosk system will assist them with directions around, help them with information about the animals. For example, if a person wants to go to a certain place in the zoo, the kiosk should be able to give him/her a clear map with proper navigation to reach to the destination.</p> <p>Overall, the software has to assist the visitors to do know what they want to know and go where they want to go throughout the zoo in an effortless way.</p>

Nishita	13	<u>Would you like to tell something about the mobile application?</u> The mobile application should be developed in such a way that it should be accessible via any device no matter if it runs on an IOS interface or an Android. The users should not be denied the use of the application because of what interface they are using.
Saurab	15	<u>Any design constraint that you would like to impose in this project?</u> There is no any specific design constraint to be imposed in this project. Any device with basic hardware and software feature should be able to access the zoo website. While, for the record management system and kiosk, the basic systems and resources needed to build these softwares is to be utilized.
Saurab	16	<u>Any more information you would like to share about the system and your expectations from it?</u> The first thing is that the software must adhere to the rules and regulations of the UK. Finally, stressing again, this software emphasizes on people of all the age groups. Therefore, everyone must have a convenient experience while using the software.

2.1.2.3 Interview Title: Initial Interview with the Administrator – Jonathan Rodgers

Interview Date: 15/11/2021

Duration: 30 minutes

Persons in attendance:

- Rohan
- Ritesh
- Pragyan

The questions and their respective answers for this interview are detailed in the table below:

Interviewer	Question Number	Question Client - Response
Rohan	01	<p><u>What exactly is animal sponsorship scheme?</u></p> <p>Basically, animal sponsorship scheme is to provide sponsorship to a particular animal. The zoo is having financial problems, and so in order to counter those the zoo is planning to attract sponsors to sponsor an animal from the zoo, helping the zoo to look after the animals as well as assist to manage the budget accordingly.</p>
Ritesh	02	<p><u>How can one apply to be a sponsor?</u></p> <p>First of all, those who are interested to be a sponsor are provided with a sponsorship agreement form by the zoo. It is provided to the interested ones via postal services, or it can be collected from the front gate of the zoo.</p> <p>The form is, then, needed to be submitted back to the zoo after filling up the required contents within one week from the date of receipt of the agreement form.</p>

Pragyan	03	<p><u>How do you manage the schemes in the clerical system and what are your expectations with the proposed one?</u></p> <p>In terms of management of sponsorship, the zoo is totally paper based. The major drawback of this paper based system is that, as it is a filing system, it is extremely difficult to find the records of last few years. Data loss rate is high because of misplacement of the files or physical damage to those files.</p> <p>Hence, the system to be developed now is expected to be highly efficient where all the records and its relevant information can be easily found and accessed in a proper organized way. Moreover, the resource most required is an advance search option.</p>
Rohan	04	<p><u>How long can one be a sponsor?</u></p> <p>The period for a sponsorship deal is one year.</p>
Ritesh	05	<p><u>How are the sponsorship agreements accessed or monitored?</u></p> <p>As already mentioned, the deal is for a year, starting from 1st of January to the 31st of December. When the sponsorship application is agreed, a review process is sent to the applicant on 1st of August, that is, the applicant will be asked if he/she wants to continue with the sponsorship. It is generally sent via a letter (postal service) and a response is expected by the end of 15th September.</p> <p>If no response or information is received by September 15th, then on 16th of the month, date and pertinent information about sponsorship in newspapers and National TVs for in search for another sponsor.</p>
Pragyan	06	<p><u>Could you explain about the sponsorship agreement?</u></p> <p>Normally, it is a documented form. All the instructions regarding the agreement is provided in that particular form, and all the proceedings will be carried out in accordance to it.</p>

Ritesh	07	<p><u>Could you briefly explain about the payment processes related to sponsorships?</u></p> <p>Regarding the payment procedures, all the payments are conducted through banking transactions. Bank check is received from the sponsor and then it is collected from the bank.</p> <p>However, in the upcoming system only online payments are to be accepted so that payments can directly be credited to the organization, making it easier for the zoo financially as well as with its management.</p>
Rohan	08	<p><u>Are there any facilities for sponsors on zoo visit?</u></p> <p>The administrator is not the right person to answer this question.</p>
Pragyan	09	<p><u>Could you give any information about the sponsors?</u></p> <p>Name of the sponsors are confidential. It cannot exposed to anyone as it is against the policy of the zoo.</p> <p>But there are 800 animals sponsored in the zoo till date.</p>
Rohan	10	<p><u>Are there any category of sponsors?</u></p> <p>There are 5 different categories of sponsors classified with grades. The high profile animals has the highest sponsorship that is 2500 euro per year while the lowest sponsorship bills at 500 euro per year.</p>

Pragyan	11	<p><u>Which animal is most sponsored?</u></p> <p>It depends on the category of sponsorship.</p>
Ritesh	12	<p><u>In terms of agreement rate, is there any fluctuation?</u></p> <p>No, the rate remains consistent throughout the year.</p>
Rohan	13	<p><u>How much space must be allocated for sponsors in the website?</u></p> <p>(1/8)th portion of the website must be provided and must be accessible to the sponsors so that they can upload information about themselves in the site. The zoo will have no control over that specific portion of the site.</p> <p>Certainly, sponsors will have partial access to the zoo's site, however, no credentials or information of the website can be accessed by the sponsors except for only the part they are provided access with.</p>
Ritesh	14	<p><u>Could you tell us about the data collection of sponsors?</u></p> <p>The collection of data is paper based. All the information about the sponsors are stored clerically and the information are kept secret.</p>

Pragyan	15	<p><u>How do you suppose should we keep track of data in the website?</u></p> <p>When developing the website, if any information about an animal is provided, then all those information should be in the site. For example, an animal's scientific name, species, order, class and so on. Other wrong and non-valid information should be avoided at all cost such as skin cost of an animal.</p> <p>The other thing, all the information regarding the sponsors must be kept confidential.</p>
Rohan	16	<p><u>In order to attract the sponsors, what advantages could be included in the site?</u></p> <p>Rather than the administrator who is not so user friendly to the website, the software developing team is expected have a better idea of how things must be done, or what other functions can be added to have more sponsors for the zoo.</p> <p>Since, the developing team is more familiar to websites, it is expected of the team to add functionalities to attract more sponsors in an efficient way.</p>
Ritesh	17	<p><u>Any form of discount options available for sponsors as well as other people?</u></p> <p>On holidays, sponsors are given 40% discount on the visit of the zoo and other days, they can enjoy a discount of 25%.</p> <p>For age group between 1 – 4 years, there is a free entry.</p> <p>Students who have valid identity cards will have a discount of 10%.</p> <p>Finally, the elderly ones will get a discount of 20% on their visit to the zoo.</p>

Pragyan	18	<p><u>Is there anything else you would want us to know about this scheme that might be important for the software?</u></p> <p>Everything must be digitalised. For instance, the agreement forms which should be available online so that the sponsors can fill it up online, and the zoo can proceed accordingly.</p> <p>The details of the sponsorship as well as the history of sponsors is to be maintained properly. All the payments of the sponsors, for example the statements of those payments, also must be recorded in an organized manner.</p> <p>All the records must be kept confidential because the zoo does not want to share its records and other pertinent information to the public as it is against data protection act.</p>
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2.1.2.2 Interview Title: Initial interview with the Regular visitor – Thomas Smith

Interview Date: 15/11/2021

Duration: 30 minutes

Person in attendance

- Dipak
- Sungava
- Saurab

The questions and the respective answers of this interview are given in the table below:

Interviewer	Question number	Question Client - response
Dipak	01	<p><u>What is your opinion on the Claybrook Zoo's upcoming modernization?</u></p> <p>Well, it would be a good idea to step up towards modernization that will benefit all the visitors. Modernizing in terms of the proposed system is a great idea. As all can access the features provided by the zoo in the new system. Taking from the visitors' point of view every visitor will be able to know about different events and activities happening in the zoo through the website. Everyone could get the information of closing and opening schedule of the zoo due to which none have to waste time on the holidays. Moreover, it will also improve the experience of visitors which will surely attract more visitors.</p>
Sungava	02	<p><u>How would you like to rate the current management and services of the zoo?</u></p> <p>Answer: The current paper-based management system is poor. As there is no proper information about the animals and their position in the zoo. Regarding the ticket system, it is not managed properly. Similarly, in terms of events and other programs, there is no proper information and had poor services.</p>
Dipak	03	<p><u>You pointed the talk about being in a poor position, is there anything you would like to have in the new system?</u></p> <p>Yeah, the position of the animals is poor. But since the zoo is planning to move towards a digital system it would be better to provide proper information about animals through their systems.</p>

Dipak	04	<p><u>As someone who has good insight into the current visiting experience, what is the most and the least attractive aspect of the zoo?</u></p> <p>The visiting experience is not much satisfactory. As, animals are attractive but information about the animals outside the cage, language, etc. is declining the experience of the zoo. Similarly, there are several rooms for improvement including information. The improper positioning of banners and navigation boards may result in the decline of visitors. These are the least attractive aspect of the zoo.</p>
Sungava	05	<p><u>Any attribute of other zoo websites that you found useful during zoo visits?</u></p> <p>Well, apart from visiting the zoo frequently, another zoo provides proper information about animals. Some other zoos provide well-managed services and information about the events as well.</p>
Dipak	06	<p><u>Zoo is planning to make an online ticket system so, are you comfortable with an online payment system?</u></p> <p>Modernizing the zoo in terms of a ticketing system is a great idea. It will not only make the zoo systematic but also increase the visitors' number. The digital ticketing system helps visitors to get tickets before going to the zoo so that none will need to stand in a queue for long hours to get a ticket which will help to improve the visiting experience of the zoo. This idea helps in attracting of more number of visitors.</p>
Sungava	07	<p><u>What do you expect from the zoo administrations regarding changes?</u></p> <p>As the clerical system is used till now for the management of every portion of the zoo. But now the zoo is planning to maintain its record in a modern/online management system which could be more helpful for every visitor. If the administration could manage the system properly that would be the most effective for all and this could improve the overall quality of the services.</p>
Sungava	08	<p><u>Zoo is thinking to add a Kiosk system, you mentioned problems earlier there is no banner, direction in the right place. So what do you think about how the Kiosk system helps visitors like you to get a better understanding of the place?</u></p>

		Yeah, the kiosk system could be very beneficial in improving the overall visiting experience. As mentioned before there are no proper directions and no proper information about different sections of the zoo. So, including the proper information about different sections of the zoo would be very useful.
Saurab	09	<p><u>Except for the maps anything you would like to see on the Kiosk?</u></p> <p>Answer: So not only the kiosk but including the key wall system would be a better experience. Visitors can scan the key bar and know about the opening and closing time and date of the zoo. Similarly, they would know about the events happening at the zoo.</p>
Saurab	10	<p><u>Following the previous questions, You talked a lot about events and services, have you been to any events?</u></p> <p>Taking about events, occasions, and programs, lots of events would happen in the zoo. As an example, on the occasion of World Animal Day, the modern system should provide detailed information to the visitors due to which interested visitors could join in such events. So, informing about different events to the visitors plays an important role.</p>
Saurab	11	<p><u>What particular thing adding is the most needed change in this zoo?</u></p> <p>Well, as mentioned in the earlier topics there are lots of problems with the current system. So, modernization/digitalization of the system solves most of the issues of the zoo. So the information about all the animals their species, specific features other details should be provided through the system that would be useful.</p>

2.1.2.4 Interview Title: Initial interview with the Sponsor – Phillip Brown

Interview Date: 15/11/2021

Duration: 30 minutes

Person in attendance

- i) Aayush
- ii) Sujan
- iii) Saurab

The questions and the respective answers of this interview are given in the table below:

Interviewer	Question number	Question Client - response
Aayush	01	<p><u>Why are you sponsoring Claybrook Zoo?</u></p> <p>Have been working as an animal activist. The zoo helps to protect endangered species which is the main reason for sponsoring Claybrook Zoo.</p>
Sujan	02	<p><u>Do you think Claybrook and its software can benefit you in other ways not just the publicity of your business?</u></p> <p>Yes, they are providing some hoarding boards to place advertisements around the zoo corners which helps to promote the business.</p>
Aayush	03	<p><u>Any sponsorship scheme of another zoo that you like to see in the new system?</u></p> <p>Yes, it would be appreciated to see some changes in the new system. The mobile application is necessary, as different programs related to business can be uploaded through the application. But, some major problems need to be improved in this sponsorship scheme which is given below:-</p> <ul style="list-style-type: none"> a) The sponsorship scheme is the same throughout the year. b) There has not been any advertisement for the special offers. c) There is no way of changing information.
Sujan	04	<p><u>How can we influence more local businesses to sponsor zoos like Claybrook?</u></p> <p>As there are many ways to promote more local businesses like Claybrook Zoo. Some of the procedures like advertising about the business around the local area should be done. Volunteering works about the business should be done.</p>

Sujan	05	<p><u>Would you like to include something on your behalf that might be important for this software?</u></p> <p>As already mentioned in the previous question, the mobile application is one of the important aspects that shouldn't be missed where the advertisements can be directly uploaded. Also, those advertisements can be shown in the corners of the zoo.</p>
Saurab	06	<p><u>Do you find any extra benefits of sponsoring Claybrook Zoo above others?</u></p> <p>Yes, it is glad to invest some money for a good cause of protecting the animals. Apart from the business, investing in protecting endangered species is a good cause of investing in the program.</p>

2.1.3 Other Problem Domain Research

This portion in this project comprises analysis on various already existed software systems and relevant legislation which will provide extra help to understand other problem domain.

2.1.3.1 Comparable System Software Review

Here in this section, different software systems that are available in various sources are researched & compared and their advantages and disadvantages are listed out.

2.1.3.1.1 Record Management System

Record management is one of important task of any organization to survive in future. Record management plays an important role to manage events of that institution. Likewise, animal record management system is one of major challenge of the zoo system. In previous days, Total record management system was based on paper-based system. The creation, search and update on that system was too hard job. So, the online system for data/record management was brought. Dealing with modern society every tasks are being performed efficiently and zoos have trust in online database system. So, many zoos are recording their animals, staff's, and organization system through online system. In context of online record management system of zoos Species 360 (ZIMS) are playing important role for record keeping of many zoos, aquarium, etc. "ZIMS zoo aquarium animal management software: One, global, accurate, comprehensive and reliable source of information on animals and their environments for zoos, aquariums and related organizations to serve animal management and conservation goals." Many zoos in UK are also using this software as record keeping system for their zoos. The main role of modern animal record management system is to provide one interactive website that allows zoo administration to add, insert, update and delete animals present in that zoo and that data are totally secured by software provider or developer.

Here are some comparable record management system:

System	Description
 https://www.chesterzoo.org/our-zoo/animals/	<p>Chester zoo is one of the most popular zoos in the UK. As the world is moving towards the Internet, this zoo has been facilitating visitors through its website. This zoo's website is very eco-friendly with an efficient design, colors which are very eye-catching for all people (especially adults and children).</p> 

SEARCH ANIMAL GROUP

[Clear all](#)

69 Animals SORT BY



Aardvark



African painted dog



Andean Bear

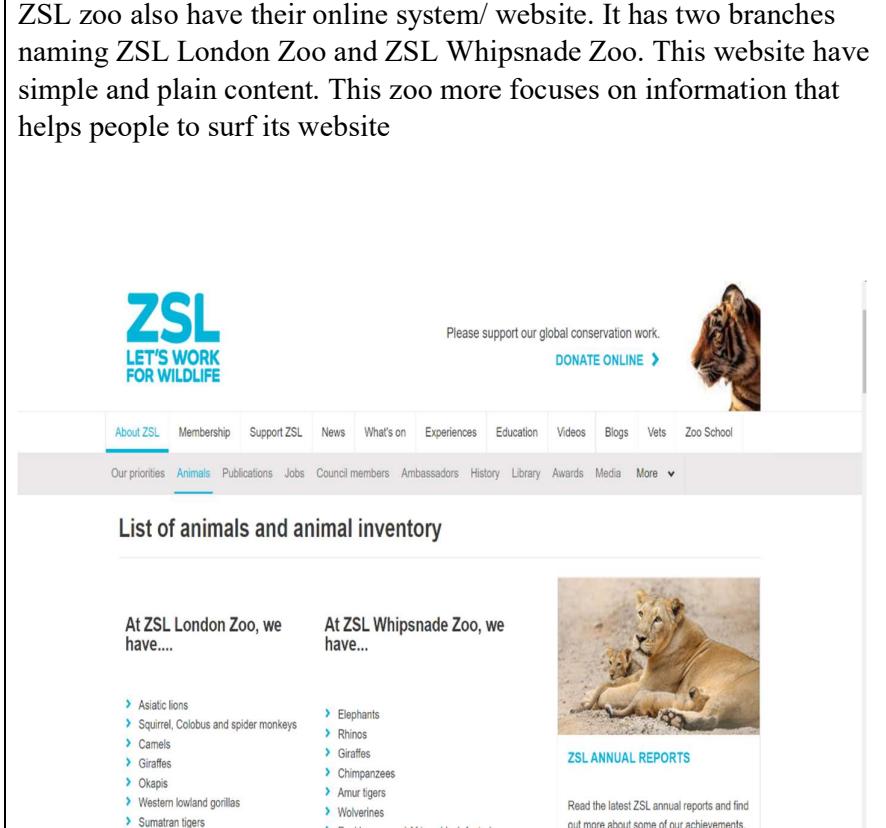


Anoa

Some advantages and disadvantages:

Advantages	Disadvantages
Eco-friendly website, eye-catching	
Presence of search bar and animals can be categorized according to groups like (Invertebrates, Birds, Mammals, etc.)	When animals are searched (like by typing only tiger) different species animals (Bornean orangutan, Jaguar) are shown.
Animal list displays with their Images and their names. Total no of animals are also given.	
Displays proper information of animal after clicking specific animal	

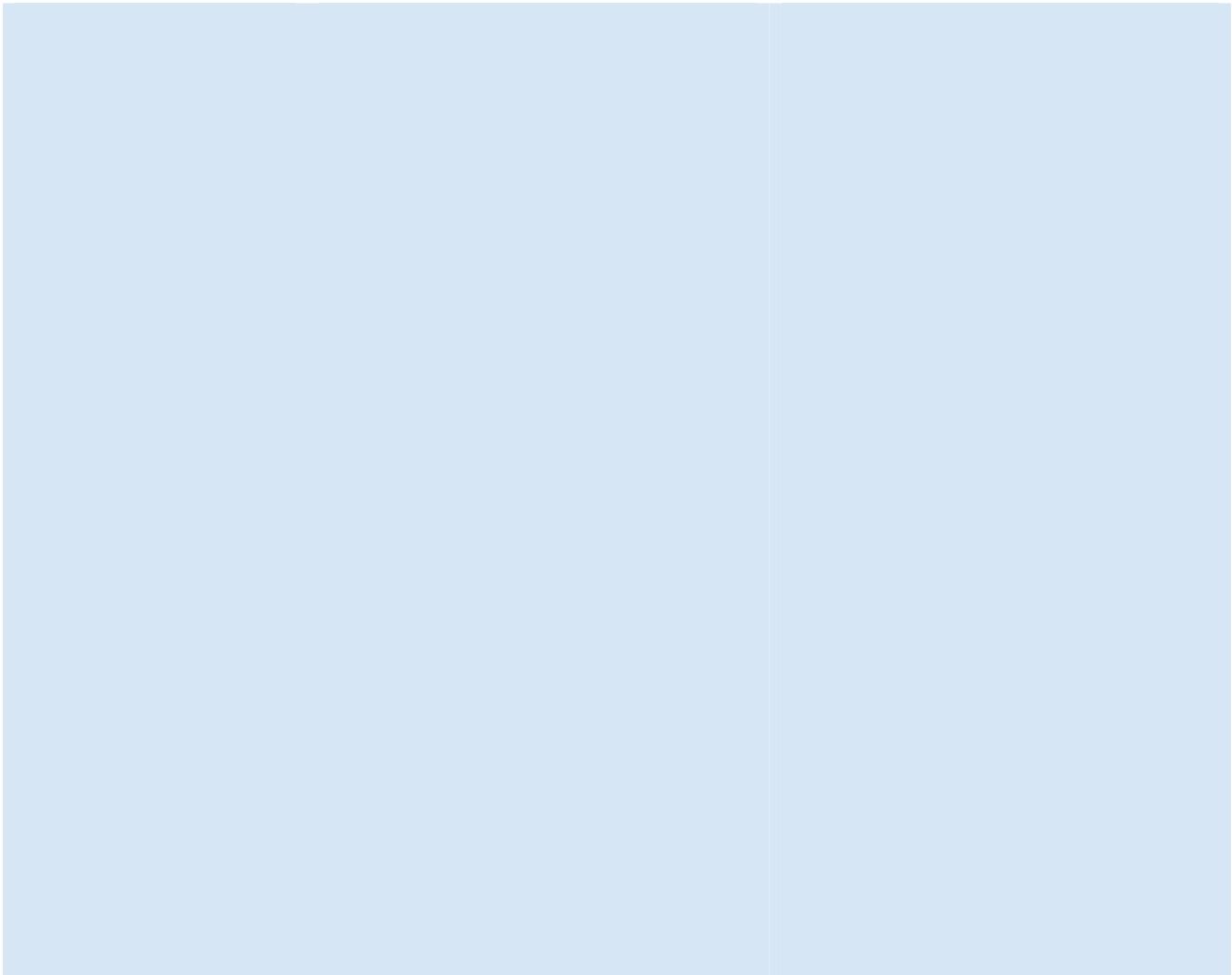
	<p>Animals list can be sorted according to alphabetical, most popular or new arrivals order.</p>	
--	--	--

<p>ZSL LET'S WORK FOR WILDLIFE</p> <p>https://www.zsl.org/about-us/list-of-animals-and-animal-inventory</p>	<p>ZSL zoo also have their online system/ website. It has two branches naming ZSL London Zoo and ZSL Whipsnade Zoo. This website have simple and plain content. This zoo more focuses on information that helps people to surf its website</p>  <p>List of animals and animal inventory</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>At ZSL London Zoo, we have....</p> <ul style="list-style-type: none"> ➤ Asiatic lions ➤ Squirrel, Colobus and spider monkeys ➤ Camels ➤ Giraffes ➤ Okapis ➤ Western lowland gorillas ➤ Sumatran tigers </td> <td style="width: 50%; vertical-align: top;"> <p>At ZSL Whipsnade Zoo, we have...</p> <ul style="list-style-type: none"> ➤ Elephants ➤ Rhinos ➤ Giraffes ➤ Chimpanzees ➤ Amur tigers ➤ Wolverines ➤... </td> </tr> </table> <div style="text-align: right; margin-top: -10px;">  <p>ZSL ANNUAL REPORTS</p> <p>Read the latest ZSL annual reports and find out more about some of our achievements.</p> </div> <p>Some advantages and disadvantages:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Advantages</th> <th style="width: 50%;">Disadvantages</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">List showing animals present in its both zoo.</td> <td style="padding: 5px;">To view about one of listed animals, we have to go through different page. No navigation link provided in the list.</td> </tr> <tr> <td style="padding: 5px;">Each animal information present in each of zoo can be known from different pages provided for these two branches</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Different pdfs that contain stock list of animal in specific date can be viewed or downloaded through this system</td> <td style="padding: 5px;"></td> </tr> </tbody> </table>	<p>At ZSL London Zoo, we have....</p> <ul style="list-style-type: none"> ➤ Asiatic lions ➤ Squirrel, Colobus and spider monkeys ➤ Camels ➤ Giraffes ➤ Okapis ➤ Western lowland gorillas ➤ Sumatran tigers 	<p>At ZSL Whipsnade Zoo, we have...</p> <ul style="list-style-type: none"> ➤ Elephants ➤ Rhinos ➤ Giraffes ➤ Chimpanzees ➤ Amur tigers ➤ Wolverines ➤... 	Advantages	Disadvantages	List showing animals present in its both zoo.	To view about one of listed animals, we have to go through different page. No navigation link provided in the list.	Each animal information present in each of zoo can be known from different pages provided for these two branches		Different pdfs that contain stock list of animal in specific date can be viewed or downloaded through this system	
<p>At ZSL London Zoo, we have....</p> <ul style="list-style-type: none"> ➤ Asiatic lions ➤ Squirrel, Colobus and spider monkeys ➤ Camels ➤ Giraffes ➤ Okapis ➤ Western lowland gorillas ➤ Sumatran tigers 	<p>At ZSL Whipsnade Zoo, we have...</p> <ul style="list-style-type: none"> ➤ Elephants ➤ Rhinos ➤ Giraffes ➤ Chimpanzees ➤ Amur tigers ➤ Wolverines ➤... 										
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Each animal information present in each of zoo can be known from different pages provided for these two branches											
Different pdfs that contain stock list of animal in specific date can be viewed or downloaded through this system											

	<p>The column showing updated no of male, female, unknown, no of non-domestic and no of domestic species of different class of animals</p>	
--	--	--

2.1.3.1.2 Zoo Website

System	Description
 https://www.zoo-berlin.de/en (Web application)	<p>The Tier park Berlin has its underlying foundations in the segment of Germany, After the Second World War. The well-known Zoological Garden was presently arranged in the British area of Berlin. The GDR's state authority needed to set up an adversary zoo of equivalent standing. The zoo wants to raise awareness for species conservation and make a sustainable contribution to global species protection.</p> 
Advantage: <ul style="list-style-type: none"> The website looks professionally made with well thought out use of sponsor scheme. The website has all the information about the zoo and the concept has been explained well. The categories are well sorted out and easy to navigate. There's a separate site for the park and aquarium which are linked to one another. 	Disadvantage: <ul style="list-style-type: none"> Due to some high resolution images and some of the effects, it takes a while to fully load the page. The website seems to be lagging while browsing in a phone. There's no membership area available for the visitor.



System



<https://www.jardindesplantesdeparis.fr/en/>

(Web Application)

Description

The Paris Zoological Park, some time ago known as the Bois de Vincennes Zoological Park, and usually called the Vincennes Zoo, is an office of the National Museum of Natural History, situated in the twelfth arrondissement of Paris, which covers a space of 14.5 hectares in the bois de Vincennes. This zoo is dedicated to the observation of animal behavior in a more suitable environment. Since its opening in 1934, it is remarkable for its large artificial 65 m (213 ft) high rock, famous landscape of the recreation center, noticeable from a far distance and prominently called the "Big Rock".

Advantages:

- The homepage has a decent look and feel to it.
- There are 31 different pages with each having different information about the zoo and its project.
- The front page covers all the event plans and news.
- This website has a well-defined route for visitor to locate the place.

Disadvantages:

- The page takes a while to fully operate.
- The website seems to have a lot of unnecessary information.
- The navigation menu is difficult to use.
- This website does not include their official number on the site and they only reply to emails.

2.1.3.1.3 Visitor Kiosk/Information System

Sarawak zoo is located in Malaysia and it is managed by the Malaysian Zoological Society. It is a non-governmental organization established to create the first local zoo for Malaysians. It covers 110 acres of land also, the zoo has transformed itself to an open concept zoo with over 90% of its animals being kept in a spacious exhibits with landscape befitting its nature.

Kiosk Interface:



- The first page of the kiosk has different selective languages for the use of visitors.
- The main menu contains four options one is Map, second is Show time, Entrance fee and info.
- The map provides you the direction to food place, souvenir shops, animals and facilities also some written information about those places including the places rate.
- The animal page contains image, video, sound and the data of the animal.
- Inside the menu, the show time will show you the time and dates of the events.

- The last option shows the price of the entrance fees for all kind of visitors.

Disadvantage:

- There aren't many choices of languages.
- There is no animal feeding or any related activities mentioned in the kiosk.
- There is no dining option on the kiosk, the user have to visit the food places by themselves to know what availability of food option they have.
- There is just a single image and a video of animal on the animal page.
- The text fonts are very small and difficult to see.

Kiosk Interface:



- The kiosk has a welcoming page that allows user to select a language.
- The home page shows news or existing information or promotion to keep the user updated when they enter the app.
- It has a timing notification for animal shows and feeding time which will let the user attend the events and not miss it.
- The animal page has been well categorized by exhibits and zones to make things more organized.
- The options are clear so user don't have difficulty trying to understand and find what the options mean on the map.
- This kiosk includes a camera app on the header of the pages so that users can take picture at any time.

Disadvantages:

- The animal page does not include any videos or sounds of animals but only the description.
- The kiosk does not have a page for payment related activities.
- The visitors have to zoom in to read cause of small font uses.
- Minimal effort put on explaining the details and inhabitant of the animals.

2.1.3.2 Development Relevant Legislation

The offered software or the system for Clay brook Zoo will carry different kind of data and information about the employees, sponsors, visitors or in overall the information about the people who are directly or indirectly related with the zoos and its new computerized system. Those collected data's are very sensitive so it has to be handled with responsibility under certain rule and regulation.

There are different rules that should be implemented under United Kingdom's (UK's) Data Protection Act 2018 which is expressed by General Data Protection Regulation's (GDPR) requirement in law. Following are the list of rules stated about privacy and protection of usage of data and information held within the system according to GOV.UK, 2018.

- There should be lawful and transparent use of personal data.
- The collection of data should be used for specified and explicit purpose.
- The use of relevant data should be limited.
- The data should be used in a way that is appropriate and applicable.
- Unnecessary storage of data should be restricted.
- The Data should remain only inside particular organizations system.
- Only certified employee of organization should have access of the important data and information of that organization.

2.1.3.3 Visitor Questionnaire

1. How would you like to rate the current management & services of zoo? (1-10 scale)
2. How often do you visit the zoo?
3. What is your aim of visiting the zoo?
4. Are you a member of Clay brook zoo?
5. What is most attractive aspect of zoo?
6. What is least attractive aspect of zoo?
7. Would you be comfortable with online payment system?
8. Have you visited to any events organized by zoo?
9. What kind of event was that?
10. What is most needed change in zoo?
11. What new thing you would like to see on Kiosk?
12. What are some good things about this zoo?
13. Which animal you think should be center of attraction?

14. Are animals fed and cared properly?
15. Are you happy with the Zoo management system?
16. In terms of value of your money, is your zoo visit justified?
17. Would you visit this zoo again in future?
18. Would you recommend your family and friend to visit this zoo?

2.2 Requirement Specification

2.1.4 Problem Domain Description

2.1.4.1 Existing Business Operation

In the way of developing new system, there should be proper description, analysis and summary on existing business operation. By knowing past or existing system, benefits and disadvantages of current system of that organization can be identified which is important task of software engineering. Proper review of existing system in requirement specification document helps in problem domain description. Existing system of this zoo includes process for animal life cycle and sponsorship lifecycle.

2.1.4.1.1 Animal Life Cycle

Current system working on this Claybrook zoo is totally paper-based system. Many important processes like animal record management system, ticketing system, staff-record management system, sponsorship management system are also paper-based. Dealing with animal record management, it is totally dependent on animal life cycle. Animal lifecycle have many steps and according phase different records of animals are being stored.

Animal life cycle processes starts or begin at the time of animal arrival. Many new species arrives at the zoo, some are transferred or brought and some are born in that zoo. After the arrival of animal at zoo, the animal record process or management are separated on the basis of transferred or born animal type. Animal are assign unique id code so that record management for each animal will be efficient and effective. The record form of animal are stored in paper case and that paper case is stored in filing cabinet. Filing cabinet are classify on the basis of transferred, born and death. Paper case file that contain animal record form are stored on the filing cabinet on the basis of animal arrival type. Likewise, housing for animals also based on whether the animal was transfer or born.

If animal was born in that zoo then that animal let to live with its mother. If growing or adolescent animal gets some environmental or natural issues then that animal shifted to temporary holding area, the search for permanent house for that animal begins. Diet plans for animals are created, included in record system. Zoo-keeper checks animals daily. Any health issue seen in animal, cannot be tolerated so vets are there to help animal to heal. Vets create separate form of record. Animal having health issues kept to watch-list. They are place in watch list unless that animal health issue get resolved or dies. In case they need more prevention from excessive suffering they are kept to “put to sleep”

condition in record file. The animal that dies, their record file gets complete and that animal record file are stored in death section of filing cabinet or some location for some period of time.

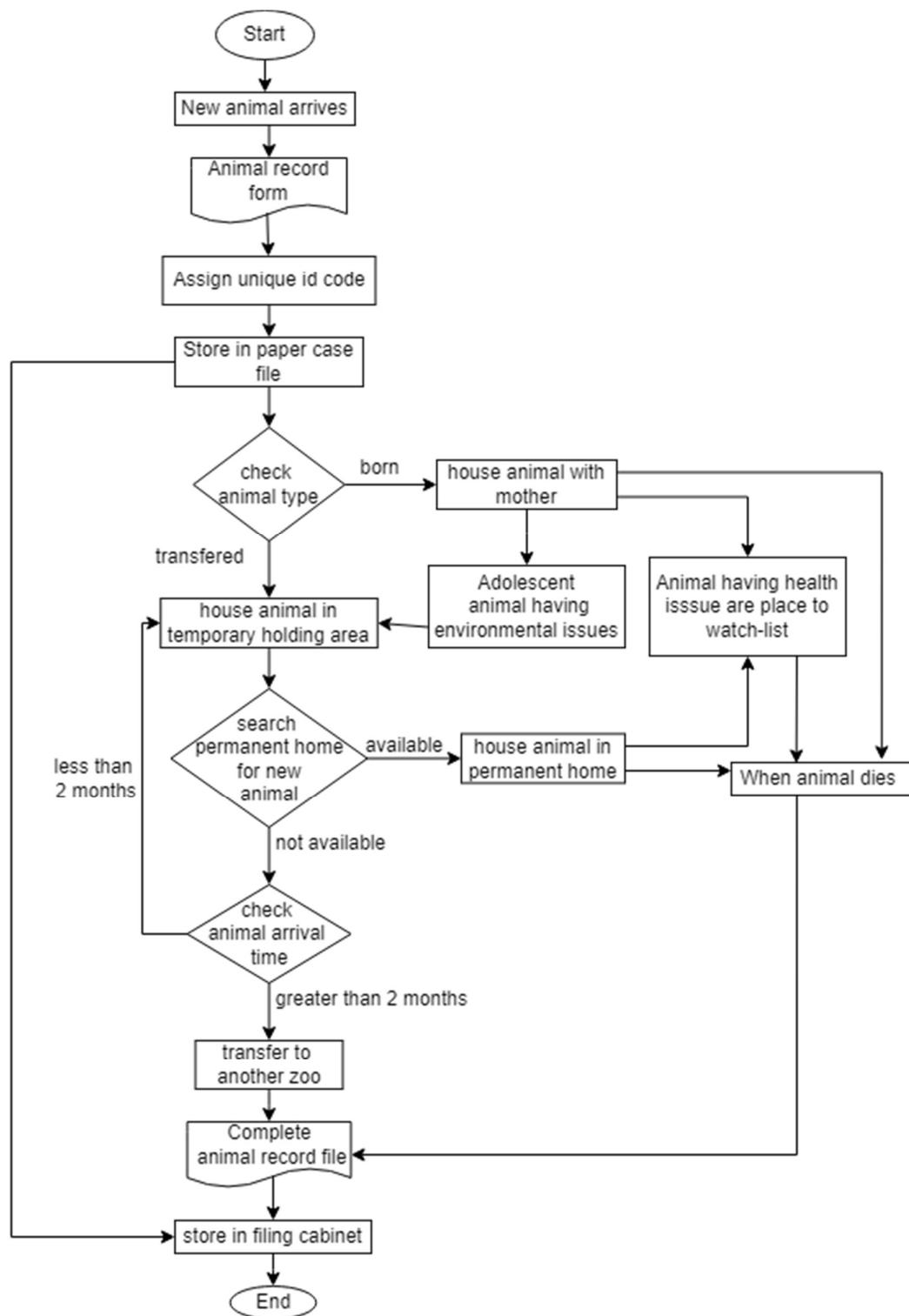


Fig: Animal life cycle data in current system

2.1.4.1.2 Sponsorship Life Cycle

Sponsorship is kind of help that promote the object behavior or quality.

In zoo like Claybrook sponsorship matters a lot in many ways. Sponsorship availability in this zoo works in zoo animal welfare and promotion. All needs like home, food, good health of animal are very essential to safeguard animal life.

Process to sponsor the animal in this zoo starts by applying the animal sponsorship form. Sponsor can apply for sponsorship only in certain events or key dates. E.g.: 1st Jan – Sponsor Event, 16th September to 15th October (New sponsors recruitment through local advertisement).

Sponsorship form should have important and valid details of sponsors. Sponsor should apply to sponsor specific animal and should define why he or she choose to sponsor that animal. Any interested individual or organization can apply for sponsorship. Sponsorship process creates communication or link between sponsor and administration. Administration of zoo is main responsible to manage or provide sponsorship scheme. As limited no of animals are available for sponsorship so it is very hard task to search for valid sponsors. After applying sponsorship form zoo administration checks the validity of the sponsorship form. First they check whether the animal is already been sponsored or not. After confirmation, all the paperwork and details of sponsorship form are sincerely checked and reviewed.

Valid forms that had been confirm by administration are green signal in way to sponsorship. The confirmation and rejection toward sponsorship are send through letter. As system is paper based, physical letters are the only medium to complete or reject sponsorship. If administration confirms and agree to accept client sponsorship then sponsorship paper agreement is send through letter. That letter includes the sponsorship rate list. In agreement letter, sponsors should agree the rule and laws of that agreement. Sponsorship rates are divided according to age category. Sponsor can choose to yearly sponsor. If accepted sponsor, agrees that agreement letter he should proceed to payment process. As online payment system is not available, he or she should make payment by visiting the zoo. After payment completes he/she becomes official sponsors. If the sponsorship form of that sponsor not accepted by administration then denial letter is send via letter. Rejected candidate can again apply for sponsorship by providing valid and brief details.

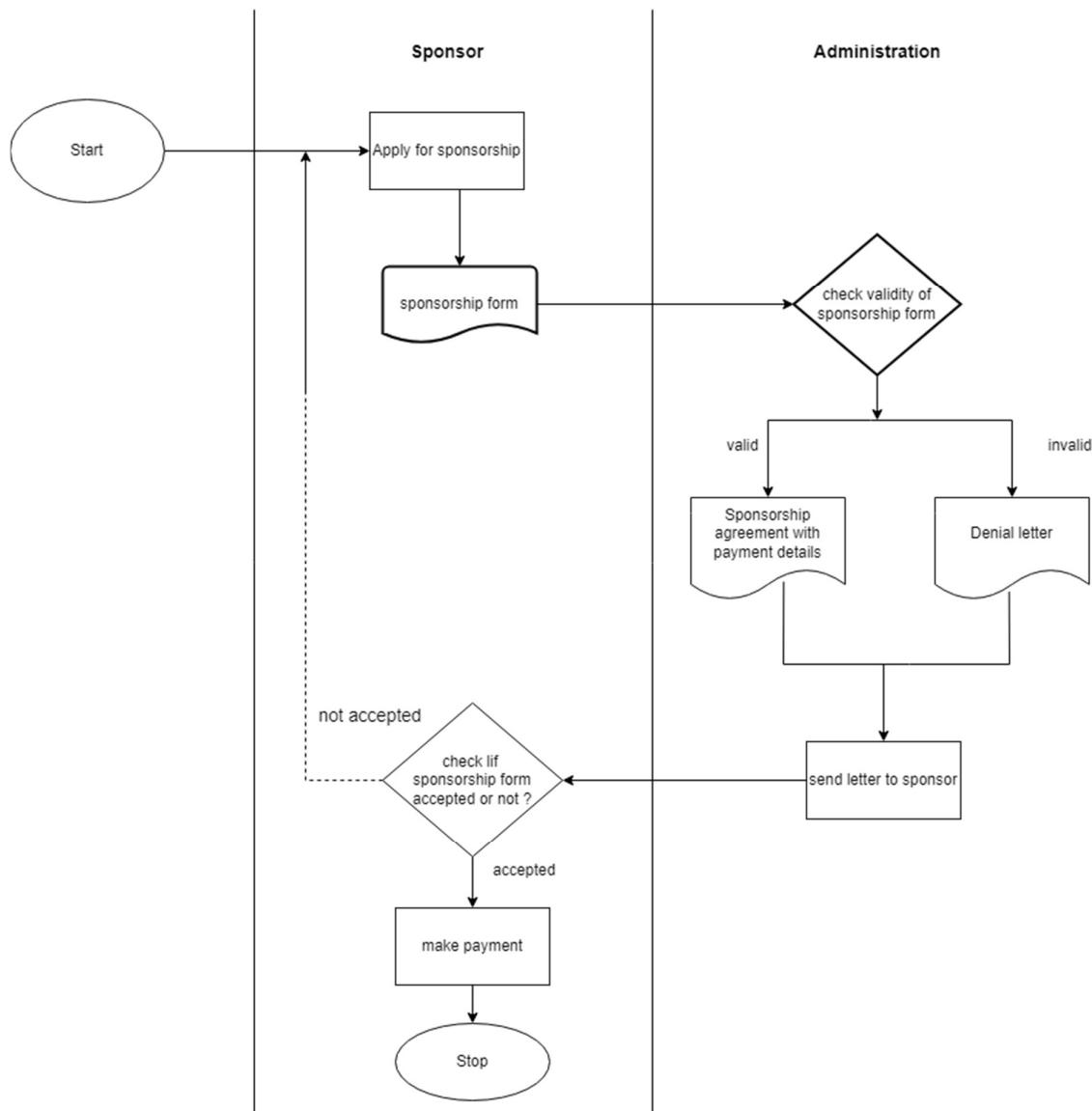


Fig: sponsorship lifecycle in current system

2.1.4.2 Summary of Existing Business Limitations

During working on this group project, we addressed a lot of limitations in the existing work system. Some of the limitations of present system are listed and discussed below:

- Lack of storage space

Saving data and information in paper based system is very difficult. It will take a lot of space to keep information in paper and we need to use many papers of data to be kept will increase day by day. In such a way that it can be accessed quickly which is quite inconvenient in paper based system as we may not have much storage space when needed.

- Security issue

As we are keeping data and information in paper we main face problem in security of those data and information. There is chance of those documents getting lost or mishandled.

- Prone to damage

As we know paper documents may easily get damaged, lost, stolen or misplaced and even natural disaster and fire can cause harm to them. If once they are damaged, we may not be able to get those information back unless got the copy of damaged document. But in online based system there is very less chance of data and information getting damaged. And even if it is damaged we got various method to get those data and information back within instant of a time.

- Transportation of documents

We need to transport the documents for different purpose. But the transportation of document is quite risky in paper based system as it need to be transferred from one place to another physically. And in case of online based system we can easily manage the transportation of document within one email which is very easy.

- Editing of document

Sometime we may have done mistake during saving of different data and information which must be immediately. It is very difficult to edit information in paper based system as we have to rewrite them from

beginning even though we have to make just a one small change. And we may have to repeat it all the time whenever we make a mistake which is not quite friendly and is very time consuming.

- Environmental damage

We tend to use a large number of papers in paper based system. This way of system may have different effects to the environment which we do not consider as environmental friendly system as more paper we use, more trees are destroyed. So in today's world we must have environmental friendly system to work on which is obviously online document management system.

- High cost

Paper based system is quite expensive an online system which is one of its main limitation. There is need of various material to manage the paper document in this system which will increase more cost time and again. But since all the documents are managed in one software in online based system it is very affordable than paper based system.

- Limited communication & collaboration

In paper based system, it is very difficult to do collaboration with other departments as exchange of files and documents is near to impossible. To do that we must need to have a lot of copies of those files and must have several other documents related to other departments for proper communication with them. This makes communication and collaboration very limited or near to zero. But in computerized system, this process is way much faster and easier.

2.1.5 Functional Requirements

Functional requirements are the details of the software which describes data manipulation, business process, user interaction and other components in that software. It helps us to identify missing requirements and clearly defines the expected system services and behavior.

2.1.5.1 Record Management System

Record management is the management of records for an organization which includes the creation, receipt, maintenance, use and disposal of records. It reduces the storage space needed and facilitates retrieving records as well as arrange the records. It is an accurate, easy and secure system that includes the functionality like addition, removal and updating records of animals and sponsors. System should display sponsor information to only authorized zoo administration.

Inside the zoo, we keep the records of animals, members, location, and sponsors.

- Animal Record Management
 - a. In this management, all information about the animals is recorded in an organized way.
 - b. Animal records plays a crucial role in record management system.
 - c. It provides vast information about animals including their characters, habits, habitats, breed, consumption etc.
 - d. It allows for evidence-based decision making and advanced data shared inside the zoo.
 - e. It informs about the situation of animals inside the zoo.
 - f. Data are saved in computerized form which also helps for future purpose and progress.
 - g. Makes a difference in evaluating the past records and planning superior breeding plans to check inbreeding.
 - h. Select predominant guardians and makes a difference in superior substitution and separating hones.

Access Rights:

The following table shows the information about the access rights of users. Users are of three type i.e. Manager, Administrator and Zookeeper.

Functioning	Manager	Administrator	Zookeeper
Create Animals	Access	Access	No Access
View Animals	Access	Access	Access
Edit Animals	Access	Access	No Access
Archive Animal	Access	Access	No Access
Delete Animals	No Access	Access	No Access

Animals:

Attributes	Data Type	Descriptions
animal_id	NUMBER(10)	Unique identifier for the animal.
location_id	NUMBER(10)	Unique identifier for the location.
Species	VARCHAR2(12)	Group of animals with same characters.
animal_name	VARCHAR2(15)	Name of animals.
Sex	CHAR	Gender of animals.
Lifespan	VARCHAR2(30)	Period of time expected to live.
Age	NUMBER(3)	Age of animals
arrival_date	DATE	Date when animals arrived
Habitat	VARCHAR2(30)	Natural habitat of animals
Diet	VARCHAR2(25)	
Height	VARCHAR2(3)	Height of animals
Weight	VARCHAR2(3)	Weight of animals
total_population	NUMBER (5)	Total population of animals.
scientific_name	VARCHAR2(10)	Scientific name of animals.
date_of_birth	DATE	Date of birth of animals.

Animal attributes depending on their type.

Aves

Attributes	Data Type	Descriptions
bird_id	NUMBER(3)	Unique identifier of bird
bird_type	NUMBER(12)	Types of bird

feather_span	VARCHAR2(10)	Average life span of feather
Beak	VARCHAR2(5)	
Wings	VARCHAR2(10)	Life span of wings
Flight	VARCHAR2(2)	Whether that bird can fly or not.
nest_style	VARCHAR2(15)	Characteristic of nest.
colour variant	VARCHAR2(15)	Colours of animals.

Reptiles

Attributes	Data type	Descriptions
reptile_id	NUMBER(3)	Unique identifier of reptiles
Procreation	VARCHAR2(15)	Way of reproduction
reptile_type	VARCHAR2(20)	Types of reptiles
Scale	VARCHAR2(20)	Types of scale
Class	VARCHAR2(10)	Groups of reptiles(Crocodilia, Squamata, Sphenodonita, and Testudine)
average_no_of offspring	NUMBER (10)	Average number of offspring
clutch_size	VARCHAR2(10)	Number of animals eggs

Amphibians

Attributes	Data Type	Descriptions
amphi_id	NUMBER(3)	Unique identifier of amphibians
Reproduction	VARCHAR2(15)	Way of reproduction
Category	VARCHAR2(10)	Groups of amphibians
clutch_size	VARCHAR2(15)	Number of animals eggs
Offspring	NUMBER(11)	Average number of offspring

Mammals

Attributes	Data Type	Descriptions
mammal_id	NUMBER(3)	Unique identifier of mammals
Offspring	VARCHAR2(12)	Number of offsprings
Classification	VARCHAR2(20)	Classes they belong
mammal_type	VARCHAR2(20)	Types of mammal
Gestation	VARCHAR2(15)	Period of time between conception and birth.
Temperature	VARCHAR2(8)	Average body temperature of mammals.

Pisces

Attributes	Data Type	Descriptions
pisces_id	NUMBER(2)	Unique identifier of pisces.
Locomotion	VARCHAR2(10)	Way of transportation
Respiration	VARCHAR2(15)	Pair of gills or gill slits
Category	VARCHAR2(10)	Types of fish
water_type	VARCHAR2(12)	Fresh water or salty water
body_temperture	VARCHAR2(15)	Body temperture of animals.
colour_variants	VARCHAR2(13)	Different types of animals colour

- Employees Management

Employee management is the management of staffs in that organization.

- a. It includes the record of staff's work which they are responsible.
- b. It makes them easier to know which member are assigned to the particular duties, working schedule etc.
- c. This framework helps to save considerable expenses by decreasing operating costs and improves the efficiency of staffs.

- d. Accurate staff records in areas such as objective following, performance management, time and participation, payment minimize any conceivable disputes between staff and administrative.
- e. Informs whether a particular area inside the zoo has sufficient or numerous workers.

Attributes	Data Type	Description
employee_id	NUMBER(3)	Id of employees in zoo
employee_name	VARCHAR2(20)	Name of employees
Address	VARCHAR2(15)	Addresses of employees
City	VARCHAR2(16)	city of employees
phone_number	NUMBER(10)	Phone number of employees
Gender	CHAR	Gender of employees
date_of_birth	NUMBER(12)	Date of birth of employees
Department	VARCHAR2(15)	In which department they work
working_hour	VARCHAR2(10)	Working hour of employees
Responsibility	VARCHAR2(10)	Responsibilities of employee
Quality	VARCHAR2(15)	Quality of employee
work_location	VARCHAR2(15)	Work location of employee

Access Rights:

This table hold the information about the member of the zoo that can have the access to the system. Users are Manager, Administration and Zookeeper.

Functioning	Manager	Administration	Zookeeper
Create member	No Access	Access	No Access
View member	Access	Access	No Access
Edit member	No Access	Access	No Access
Delete member	No Access	Access	No Access

- Location Management

It is the process of identifying physical location of particular animal inside the zoo. It provides the exact area of the location where particular animals are residing. This system also inform the conditions of particular location.

Attributes	Data Type	Description
Location_id	NUMBER(10)	Id of location
Location_name	VARCHAR2(15)	Name of location
Location_area	VARCHAR2(16)	Area of location
Status	VARCHAR2(10)	Location's condition
Animal_location	VARCHAR2(14)	Location of animals
Feed_time	NUMBER(15)	Eating time of animals
Food	VARCHAR2(10)	Food given to the animal
Location_code	VARCHAR(13)	Location's code

Access Rights:

This table grab the information about the location of zoo. Users are of three types i.e. Manager, Administrator and Zookeeper.

Functioning	Manager	Administrator	Zookeeper
Create Location	Access	Access	No Access
View Location	Access	Access	Access
Edit Location	Access	Access	No Access
Delete Location	Access	Access	No Access

- Sponsor Management

In this management, all the information of sponsors are recorded including their personal information, their company website and their interests for sponsoring the animals.

Attributes	Data Type	Description
Sponsor_id	NUMBER(10)	Id of sponsor
Sponsor_name	VARCHAR2(15)	Name of sponsor
Address	VARCHAR2(17)	Address of sponsor
Phone_number	NUMBER(10)	phoneNumber of sponoser
Company_name	VARCHAR2(15)	Company name of sponsor
Email	VARCHAR2(18)	Email of sponsorship
Company_website	VARCHAR2(20)	Company website of sponsor
Company_number	NUMBER(23)	Number of sponsor's company

Access Rights:

The below table holds the information of advertisement's banner image about the sponsor.

Functionality	Manager	Administrator	Zookeeper
Create Sponsors	No Access	No Access	No Access
View Sponsors	Access	Access	No Access
Edit Sponsors	Access	Access	No Access
Delete Sponsors	Access	Access	No Access

2.1.5.2 Zoo Website

This is the website of the zoo located in the Northwest of England. It is the small zoo which is inhabitant of hundreds of species of mammals, birds, reptiles, fish etc. This website is simple and efficient interface for user/visitor. The purpose of this website is to provide specific and useful information to visitors before visiting the zoo. Visitors can check the website to know detailed information of the zoo like ticketing system (price for ticket on the basis of age group, way of payment for ticket etc.). Users can also learn new things through this website as it is very useful for research, study and better understanding of the zoo animals.

This website consists of home page, booking, animals, attraction, membership and sponsorship. We can go through these pages using navigation bar. Homepage is the first and crucial page of the website because it is the first thing that visitor will view. It consists of logo, clear navigation at the top, brief introduction of the zoo (established date, location etc.).

Booking page virtually help the visitors to book the ticket online. The total number of people (children, adults and old aged people) visiting the zoo can be known and total price for the ticket can be fixed from the website virtually. Visitor can also pay the price for ticket online or they can also choose to pay at the time of visit.

This website also provides the information of different kind of animals. If the visitors are curious about the animals from the zoo they can search from animal section page. The characteristics of animal will display like their natural habitat, food, reproduction, lifespan, types, offspring etc.

Membership section is also there so those who wish to be member of the zoo can also apply through website.

The main attraction of this zoo can be known through this website. Contact services should be available and special section for sponsors are also there where

they can promote their business. People who wish to be sponsor can also apply for sponsorship through website.

2.1.5.3 Visitor Kiosk / Information System

It is a digitally equip device that display the information, provide services and oriented in public areas such as mall ,banks ,airports ,hospitals , hotels etc. It helps the visitor to know about the zoo, its location and other information of the zoo.

There are different services available in this such as videos, music, Brochure maps, profile and quiz games. Visitors can see the video and hear the sound of animal of the zoo in this device. It is very useful for navigation as it provides the map of the zoo and visitor can also locate the animals. People can play quiz game in this for fun.

2.1.6 Performance Requirements (Record Management System)

2.1.6.1 Speed

Some important characteristics that determine the speed of our system in the following ways:

Throughput- It is the time taken to process a batch of records. This system can process a hundred thousand records at a time.

2.1.6.2 Capacity

It shows the amount of data that can be stored in this system and the number of operations that can be performed at the same time.

- a. The possible number of records that the system will need to store. This system can store 50 TB of data.
- b. The total number of target users who can access the online system at the same time. A total of 100 users can access this system simultaneously.

2.1.6.3 Reliability

It is the probability that a system will perform designed or intended tasks at specific period of time in specific environments. In our current system potential for system availability and downtime as part of the backup strategy are available.

2.1.6.4 Usability

It is the rate how the users are able to learn this system that includes recording data, update, insert, delete and also about the backup of the system. User should be able to learn this system with training at a rate of 6 hours per week, with no more than a week of training.

2.1.7 Performance Requirements (Zoo Website)

2.1.7.1 Speed

The speed of website is determined by different conditions. Since there are different sections on the website, such as login page, ticketing page and others, depending on the number of users, processing takes time. For example: the normal time to book a ticket is only 30-40 seconds if there are only 1 or 2 users. But on holidays where the number of users more than normal days, it might take about 5 min as the server might be busy.

The same process can happen with the login page as well. If the number of connection requests does not exceed 100, it may take about 10-15 seconds because the server is probably busy, and if there are only one or two users it will only take a few seconds.

2.1.7.2 Capacity

Website capacity is the total number of visitors to the website and the website's response, i.e. the website's response speed when the number of visitors increases. The capacity of a website depends on two factors: the number of visitors and the increase in content, with the increase in the number of users, the server may lag, hang or slow down.

2.1.7.3 Reliability

The quality that works reliably or consistency well in website is the reliability of website. On our website system will be up and running for 700 hours, out of a possible 730 hours per month. For existing system and downtime, our website has backup plan and strategy. We implement the websites, backup, security, storage policies as well as their requirements and also have to implemented configuration of a physical network for the backup strategy.

2.1.7.4 Usability

This determines how easy it is to use a website with basic knowledge and training. There are several ways to check the usability of your website.

- Clear Navigation

Since our website is zoo and animal-based, we have a variety of menus to guide you to the desired page. Example: On our page, we can see a navigation bar with HOME, RESERVATIONS, ANIMALS, MEMBERS, SPONSORSHIP, etc. When the user wants to see information about another animal and clicks on this menu, he is taken to the page. You can view information about animals with animals. The same is true for menus such as reservations and ticket reservations, attracting entertainment venues, sponsoring zoo memberships and sponsoring animals. There is site navigation and visitors can easily access these pages.

- Responsiveness

Because our website is responsive and has both desktop and mobile views. Due to the increase in mobile internet usage, our visitors and users may have some website functionality on their phones as well as on desktop computers. But the navigation bar that is hidden on mobile is replaced by a hamburger icon.

- Performance:

Website performance depends on the speed of potential customers. Speed depends on the number of users and the content of the page. If the number of users is greater than 100, it takes about one minute to load a server, and if one user is greater than 100, it takes about 3035 seconds to load a server.

2.1.8 Performance Requirements (Visitor Kiosk / Information System)

2.1.8.1 Speed

The speed of the visitor guidance system is determined by service personnel, departments, etc. In fact, in our system, the speed depends on the visitor. Because the number of visitors increases on holidays and it takes time to deliver the information, on normal days the information is delivered time to time. Example: It takes 12 seconds to get information of the system on a normal day and it will take up to 20-30 seconds to get information of the system on a public holiday.

2.1.8.2 Capacity

The capacity of visitors is defined as the specific number of people that an area or place can accommodate, taking into the condition of natural resources, the experience of visiting, and programs of management. The actual capacity of our visitor information system is more than 1000 people, but we allow 800 only because the information system are limited for visitors. For example: In our system, we have a total of 10 kiosk systems. If we use 6-7 kiosk systems at one time, it works fast, good and nice. But if we use 10 kiosk systems at one time, we have higher chances to down, hang or lag server.

2.1.8.3 Reliability

For governing and managing for information system reliability is a quantitative metric. It helps to pinpoints the parts of system need to be improved as well as it gives an early warning about the information system's quality. The reliability of our system is 22 hours in a day out of 24 hours for 2 hours we have downtime as a backup strategy.

2.1.8.4 Usability

The usability of our system is based on efficiency satisfaction and effectiveness. They should give the location of different place inside the zoo as it also should be able to so the location of animals. In our current system there are videos, music, and some quiz games. In videos there are animal videos are available as well as in music animal sounds are available. Our information system encourage to provide more personalized service to the visitors.

2.1.9 Design Constraints

There is no precise layout and specific design constraint.

The computer which has minimal hardware and software features can get the right of entry to this internet site because the client has not included or imposed any design constraint. That's why we haven't imposed any specific constraint so there is the use of basic software which works on all operating systems and access all devices. The patron wasn't enforcing or which includes any design constraint which is why we've not imposed unique constraints. We use a fundamental software program that works on all working structures and gets entry to all devices as well.

Typical design constraints for the most systems include:

Target Operation System:

The system of hardware and software that you absorb to put in the target system is mentioned because of the target system. The system software libraries and sets of other data that you simply are installing are mentioned because of the target system. Microsoft Windows, Linux, Apple Mac OS, Android are the most popular, common and targeting operation systems.

Distributed or local architecture:

The components of the system can be used on separate platforms in a distributed or local architecture, and to achieve goal components can interact with each other over a network of communication. The advantages of this architecture are: resources of software sharing, flexibility of use software from multiple manufacturers, improve and parallel processing for better performance, by adding extra resources throughput can be improved even after a failure occurs a function that continues to operate.

Required hardware requirements:

CPU: Intel core I3 and above

Operating system: Windows/Linux/IOS

Memory: 1 GB RAM

Storage: 50 GB

Network Adapter: wireless adapter of 802.11ac.4/5GHz

Other: For backup external drive

Front-end graphic styles:

Front-end graphic styles are a modular synthesis of all of your product's user interface components, with sample code that builder can copy and paste as needed. It contains symbols, buttons, route menus, and structure input components among other user interface components.

Programming language:

There is use of JAVA and PHP to create this proposed software suite. Furthermore, for database Oracle is used.

2.1.10 Commercial Constraint

Assignment Information:

Total length of Project: 1 month

Hourly Cost: \$1000 per person

Number of group members: 10 members

SECTION	WEEKS	HOURS WEEK PER PERSON	TOTAL COST
Requirements Specification	1	5	\$20,00,000
Design and Analysis	1	5	\$21,50,000
System Interface Designs	Half	6	\$12,00,000
Requirement Engineering	Half	6	\$2,50,000
Problem Domain	Half	4	\$34,00,000

REASON	COST
Software	\$50,00,000
Office cost	\$21,44,000
Total build cost	\$1,00,000
Other expenses (20%)	\$40,00,000
Profit margin (30%)	\$50,00,000
Total project cost	\$2,500,000

3. System Interface Designs

1. Draft Interface Design for RMS

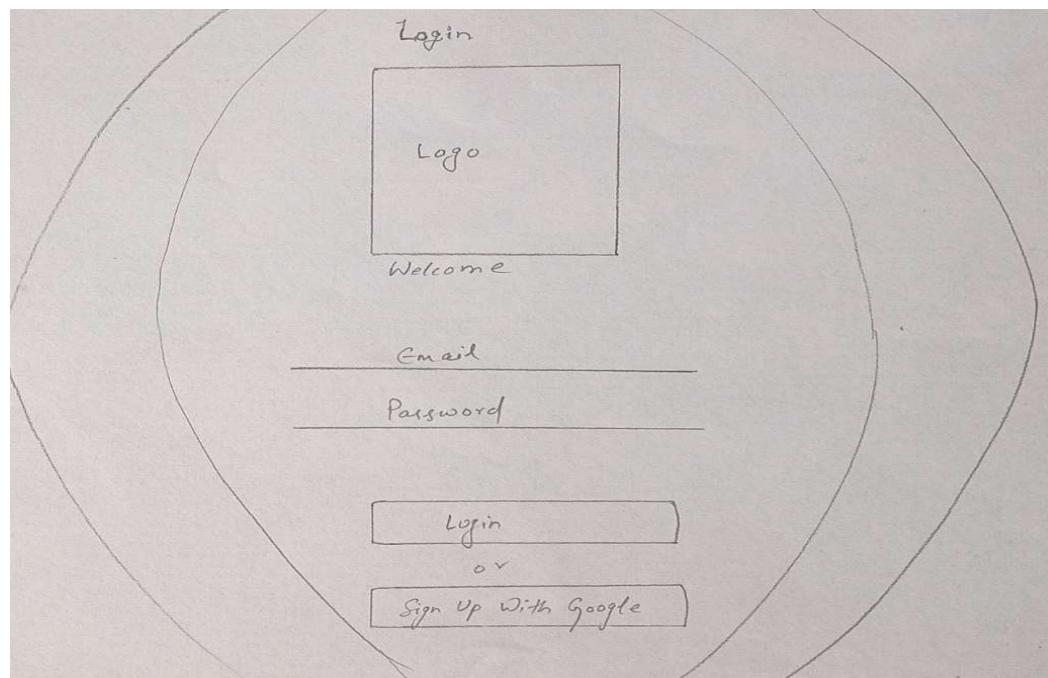
3.1.1 Wireframes

Wireframes are the simple sketch of how the first initial layout of each screen of the system will look.

Below the wireframe of all the screens of RMS is included.

Wireframe of a record management system

Home page (Login page)

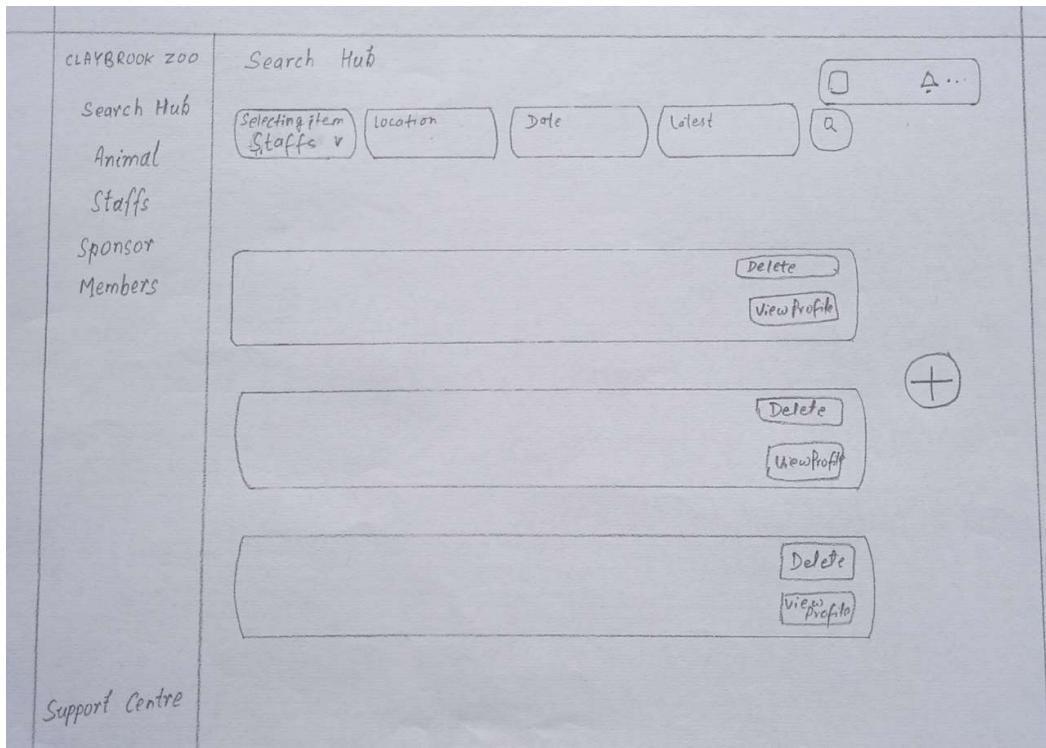


Animal

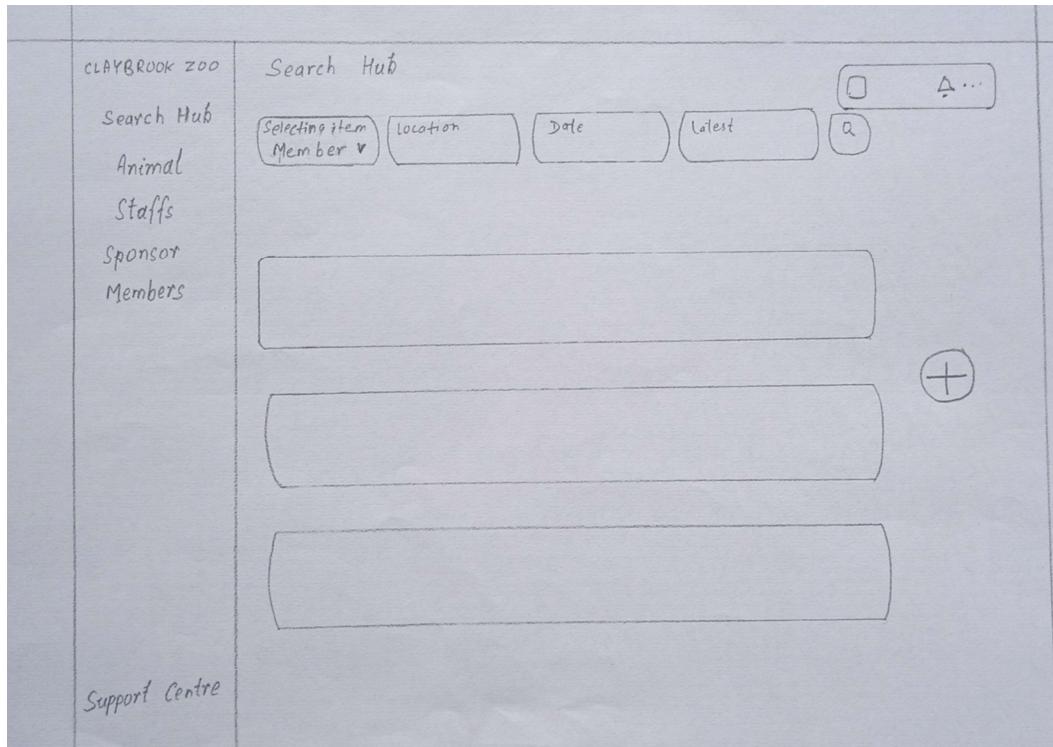
CLAYBROOK ZOO Search Hub Animal Staffs Sponsor Members Support Centre	<p>Search Hub</p> <p>Selecting item Animals v</p> <p>Location Date Latest</p> <p>Δ... Q</p> <p>+</p> <p>Delete View profile</p> <p>Delete View profile</p> <p>Delete View profile</p>
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Zoo Name Search Hub Animal Staffs Sponsor Member support center	<p>Animals - Mammals -</p> <p>General data:</p> <table border="1" style="margin-bottom: 10px;"> <tr><td>Species:</td><td>Location code</td></tr> <tr><td>NAME:</td><td>capacity</td></tr> <tr><td>PHOTOGRAPH</td><td>Date Joined</td></tr> <tr><td></td><td>Height</td></tr> <tr><td></td><td>Weight</td></tr> </table> <table border="1" style="margin-bottom: 10px;"> <tr><td>DOB</td><td>Natural habitat</td></tr> </table> <p>Classification Specific Data:</p> <table border="1" style="margin-bottom: 10px;"> <tr><td>Select Here:</td><td>Mammal selected ✓</td></tr> <tr><td>Gestational Period</td><td>Select ✓</td></tr> <tr><td>Color Variant</td><td>Select ✓</td></tr> </table> <p>Animal Record Form:</p> <p>Animal Medical Record</p> <p>Type something</p> <table border="1" style="margin-top: 10px;"> <tr><td>Date of transfer</td></tr> <tr><td>Destination</td></tr> <tr><td>Reason of animal transfer</td></tr> <tr><td>Date of Death</td></tr> <tr><td>Cause</td></tr> <tr><td>Animal remains in curation date</td></tr> <tr><td>Animal remains incineration location</td></tr> </table> <p>Buttons:</p> <p>Edit Okay</p>	Species:	Location code	NAME:	capacity	PHOTOGRAPH	Date Joined		Height		Weight	DOB	Natural habitat	Select Here:	Mammal selected ✓	Gestational Period	Select ✓	Color Variant	Select ✓	Date of transfer	Destination	Reason of animal transfer	Date of Death	Cause	Animal remains in curation date	Animal remains incineration location
Species:	Location code																									
NAME:	capacity																									
PHOTOGRAPH	Date Joined																									
	Height																									
	Weight																									
DOB	Natural habitat																									
Select Here:	Mammal selected ✓																									
Gestational Period	Select ✓																									
Color Variant	Select ✓																									
Date of transfer																										
Destination																										
Reason of animal transfer																										
Date of Death																										
Cause																										
Animal remains in curation date																										
Animal remains incineration location																										

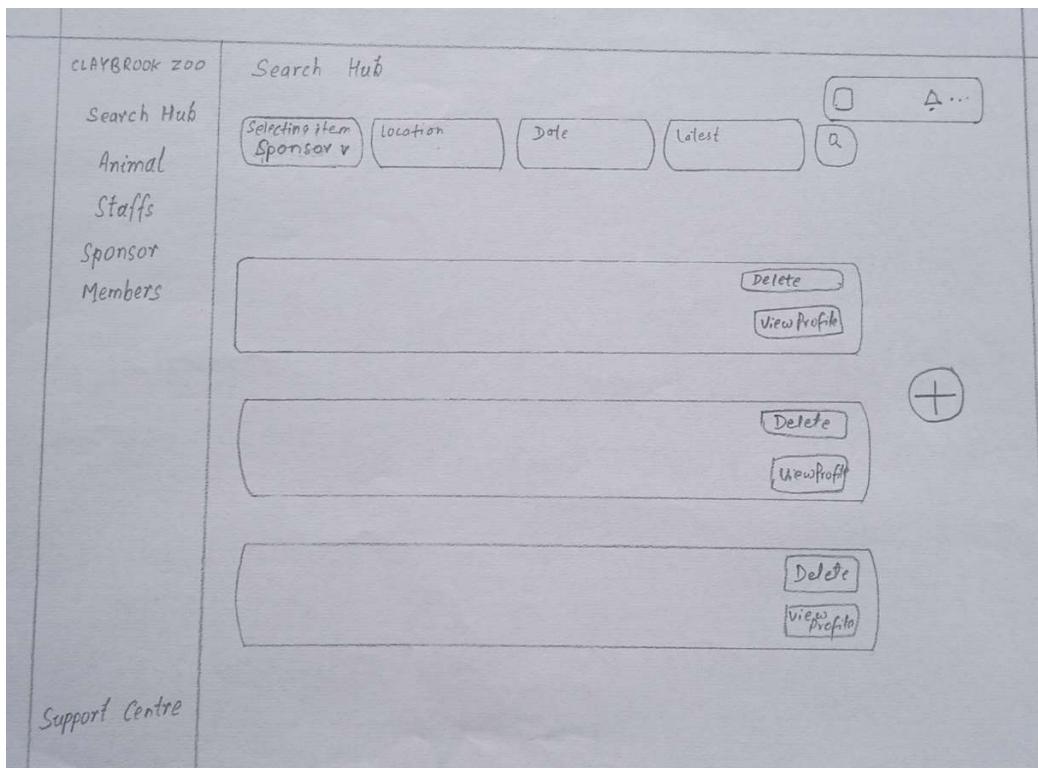
Staff



Member



Sponsor

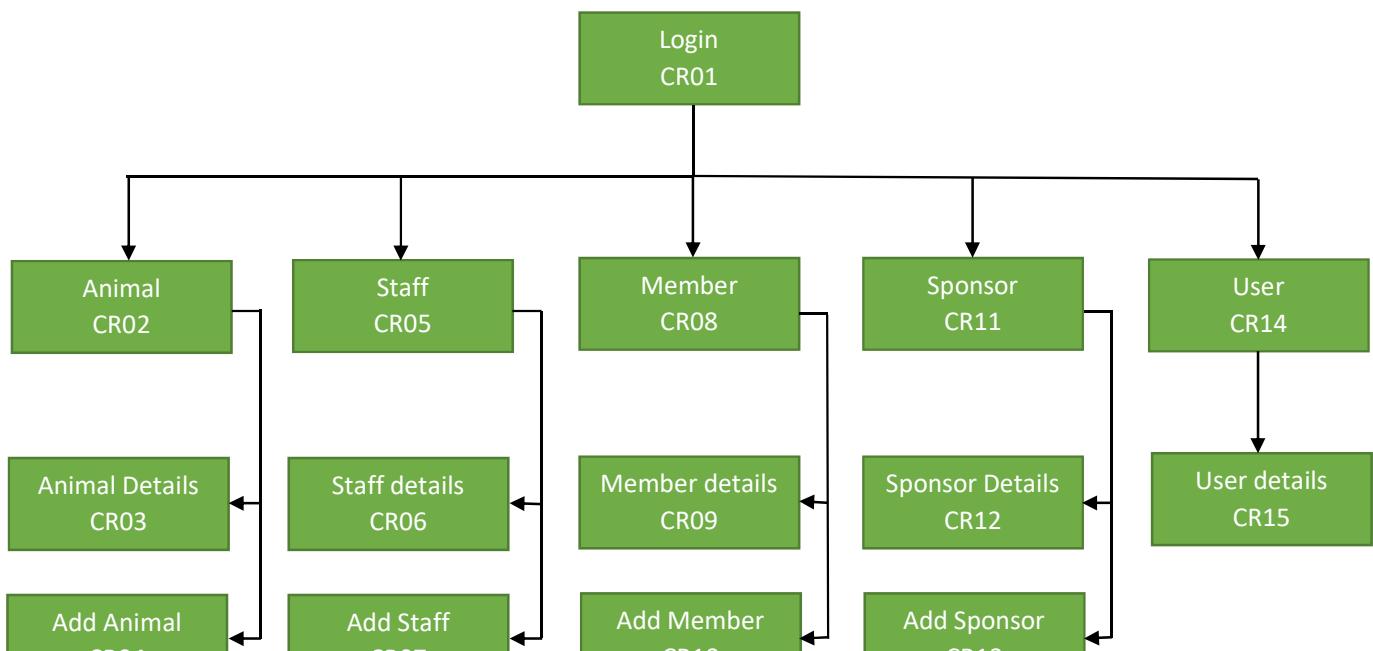


3.1.2 System Navigation Diagram

System Navigation Diagram aims to provide an overview of all the system screens. It also illustrates all the navigation pathways throughout the system.

A system navigation diagram necessarily comprises of system screen name, screen serial number and arrows to illustrate the navigation path.

Here, is the system navigation diagram of Record Management System.



3.1.3 System Screen Mockups

System Screen Mockups is the final layout of how the system will look. This product is what the client can expect when the software suite is finally ready to launch.

System Screen Mockups for the Record Management System.

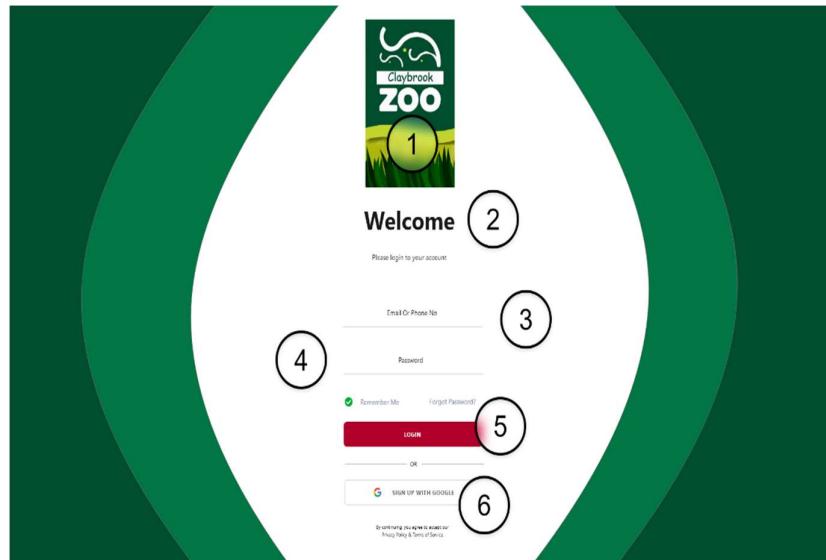
1. It displays the logo of the zoo. This also notifies that this record management system is of Claybrook zoo.

2. It welcomes the user to the system, and also asks the user to login to have further access to the system.

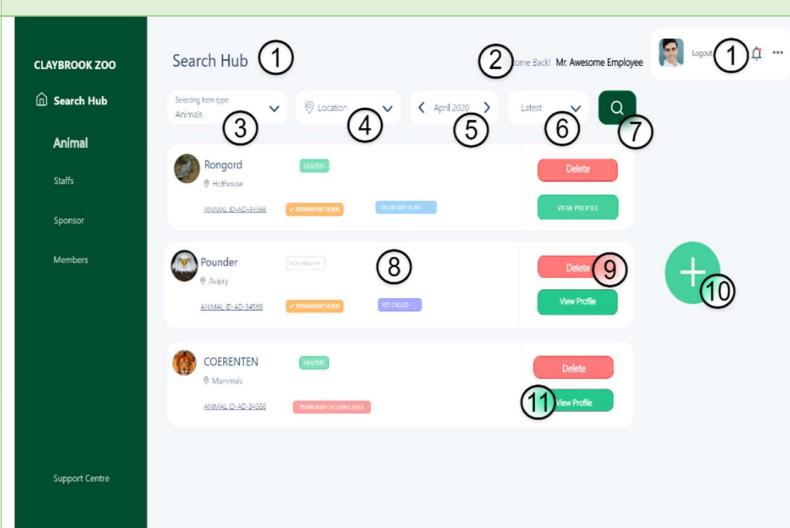
3. This section requires the users to insert their email or phone number to login to their account.

4. It gives the user an option to keep on logged in to the system. And in case they have forgotten their password, the users can click on the ‘forgot password’ section to change their password after few verification steps.

6. This gives the users an alternative way of logging into the system if that is how they had signed up to it.



5. Clicking on this box allows the user to login to the system given the credentials the user have entered is correct.

<p>1. It is the dashboard of the record management system comprising the name of the zoo, a search box where the user can search whatever they want to and the different records stored in the system. It remains constant in all the pages of the system after logging in.</p>	<p>12. This section contains the profile of the user, an option to logout from the system, a notification icon that displays notifications when clicked and a menu containing more options. It also remains constant throughout.</p>
<p>2. It welcomes the user to the system. It also remains constant.</p>	<p>3. It tells the user the purpose of the boxes below it. It is also constant in all pages of the system.</p>
<p>3. This box allows the user to choose the basis on what they are going to search the data. It maybe habitat, species in case of animal, maybe working area, gender, role in case of staff and so on.</p>	 <p>The screenshot shows the 'Search Hub' interface for 'CLAYBROOK ZOO'. On the left, a sidebar lists 'Animal', 'Staffs', 'Sponsor', and 'Members'. The main area is titled 'Search Hub' with a sub-section 'Selecting item type: Animals'. It includes a dropdown for 'Location' (set to 'Hothouse'), a date range selector ('April 2020'), and a 'Latest' dropdown. A search bar with a magnifying glass icon is at the top right. Below this, three animal records are listed: 'Rongard' (habitat: Hothouse, status: REHEATED), 'Pounder' (habitat: Avery, status: REHEATED), and 'COERENTEN' (habitat: Mammals, status: REHEATED). Each record has a 'Delete' button and a 'View Profile' button. A green circular button with a plus sign and the number '10' is located on the right side of the list.</p>
<p>5. This box allows the user to choose the date as needed to filter the search options better.</p>	<p>6. This box is also used to filter out the search options. User may choose to get the latest record or the old ones or both.</p>
<p>7. This portion containing the search icon searches the data according to the filters set by the user.</p>	<p>9. It allows the user to delete the record.</p>
<p>8. This section lists the records of the specified category, in this case animal, along with few information such as its habitat, animal-id, any specific condition and some important information. On clicking the 'view profile' button, the user will get the complete record of the corresponding item in the list.</p>	<p>10. Clicking on it will allow the user to add a new record to that database.</p>
<p>11. This section will give the user the complete information stored about that particular record.</p>	

1. It allows the user to delete the record.

2. This section will give the user the complete information stored about that particular record.

3. Clicking on it will allow the user to add a new record to that database.

4. This section lists the records of the specified category, in this case staff, along with few information such as its position, employee-id, present or not, and some important information. On clicking the 'view profile' button, the user will get the complete record of the corresponding item in the list.

1. It allows the user to delete the record.

2. This section will give the user the complete information stored about that particular record.

3. Clicking on it will allow the user to add a new record to that database.

4. This section lists the records of the specified category, in this case staff, along with few information such as its position, sponsor-id, present or not, and some important information. On clicking the 'view profile' button, the user will get the complete record of the corresponding item in the list.

1. It allows the user to delete the record.

2. This section will give the user the complete information stored about that particular record.

3. Clicking on it will allow the user to add a new record to that database.

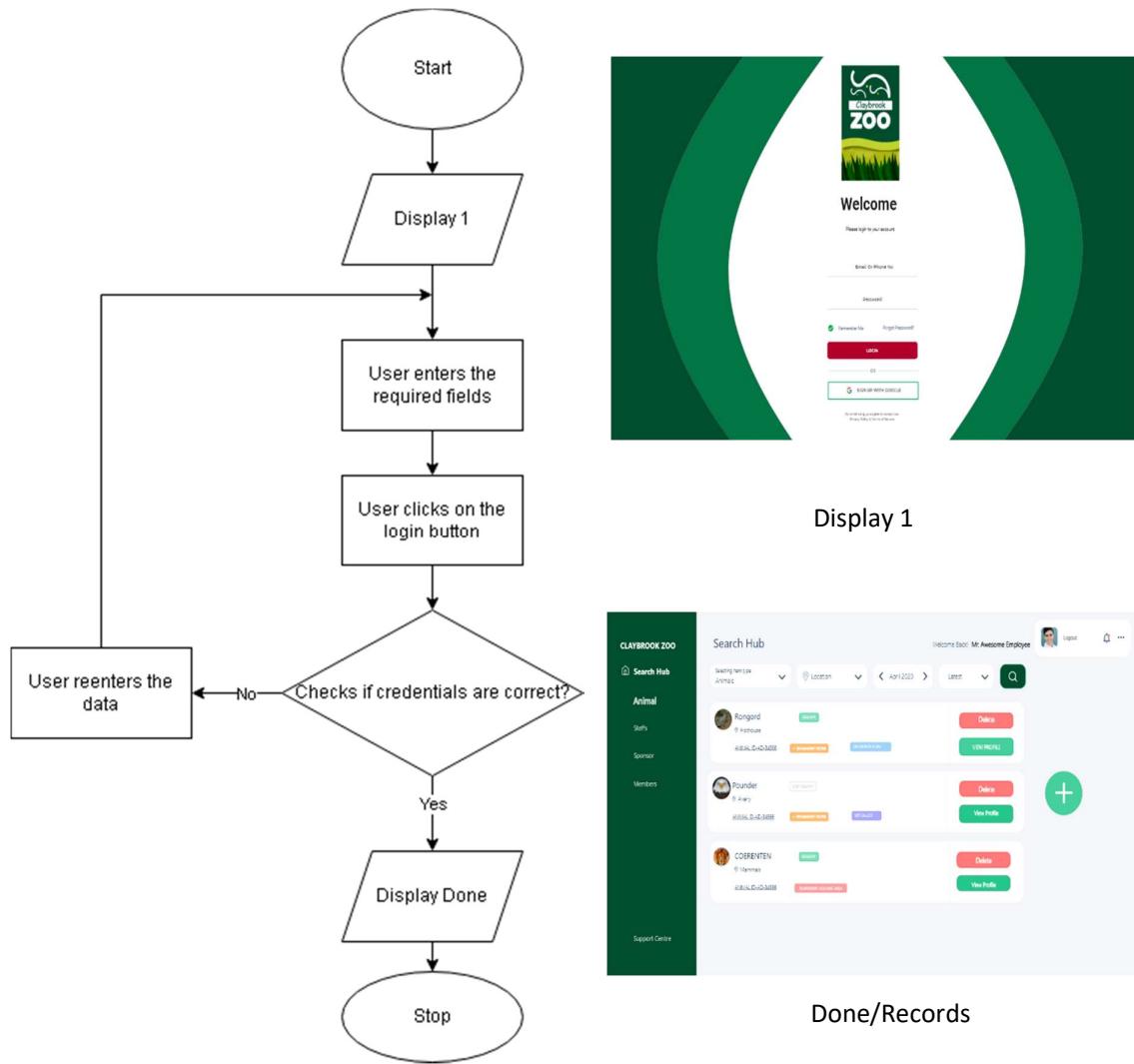
4. This section lists the records of the specified category, in this case staff, along with few information such as its position, member-id, present or not, and some important information. On clicking the ‘view profile’ button, the user will get the complete record of the corresponding item in the list.

All the boxes with green background indicates the heading for the information that is to be filled while adding a new record. The space in white is where the corresponding data is to be filled.

3.1.4 System Activity Event Diagrams

System Activity Event Diagrams demonstrates navigation pathways for key user activities. For instance, in cases of conditionals where certain conditions in the system have been met in order to navigate to another screen.

Logging into the Record Management System



3.2 Design Revisions

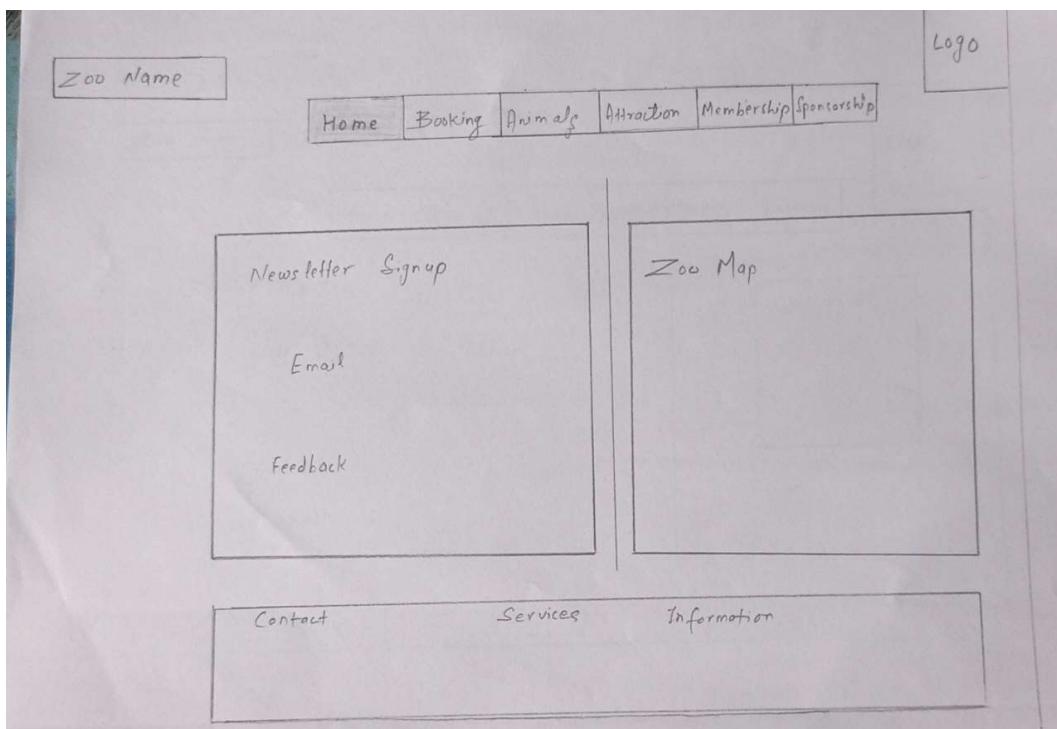
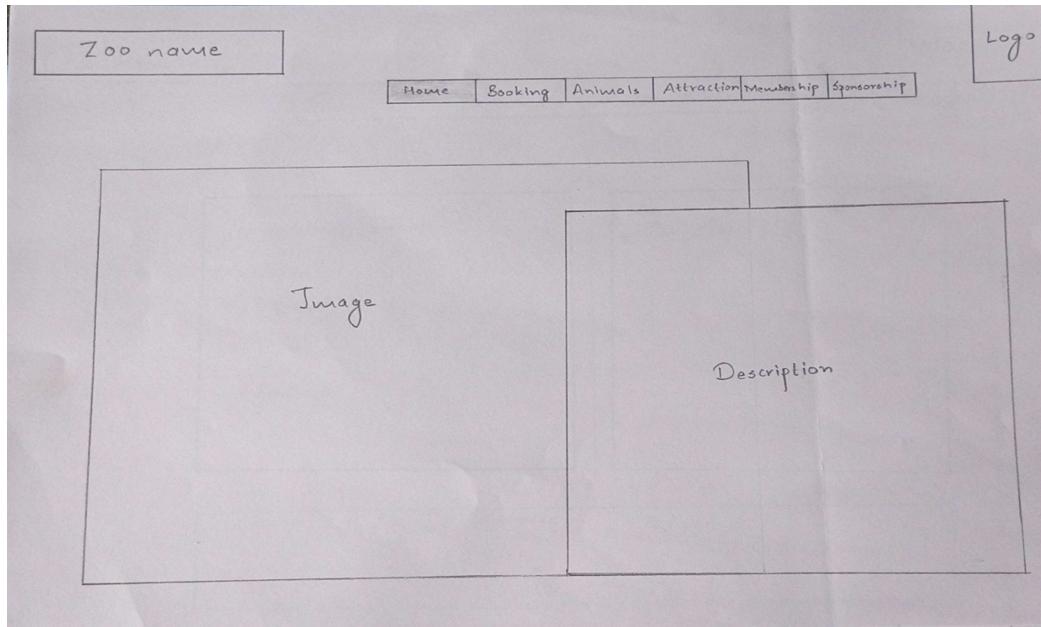
The above displayed are all the draft interface designs for Record Management System.

3.3 Draft Interface Designs for Zoo Website

3.3.1 Wireframes

Below are the wireframes of the zoo website.

Home page



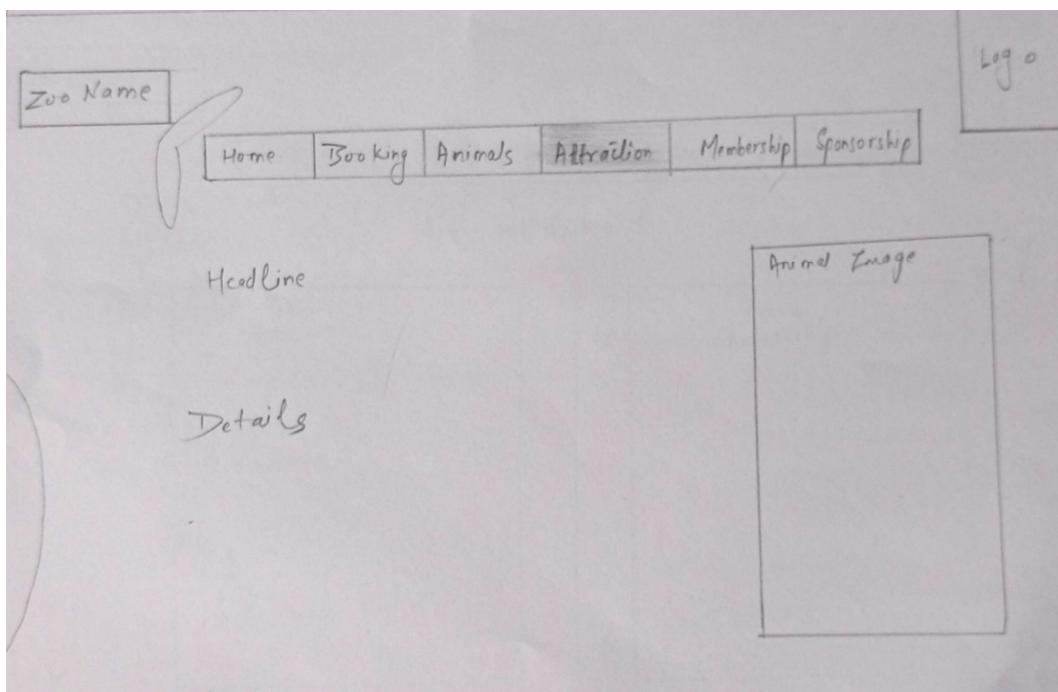
Booking

Zoo Name							Logo
<input type="button" value="Home"/> <input type="button" value="Booking"/> <input type="button" value="Animals"/> <input type="button" value="Attraction"/> <input type="button" value="Membership"/> <input type="button" value="Sponsorship"/>							
<p><i>Booking Tickets</i></p> <p>Adult: _____ Children: _____</p> <p>Total Sum: _____</p> <p>Payment Options:</p> <p><input type="checkbox"/> <input type="checkbox"/></p>							<p><i>Ticket Fares</i></p>

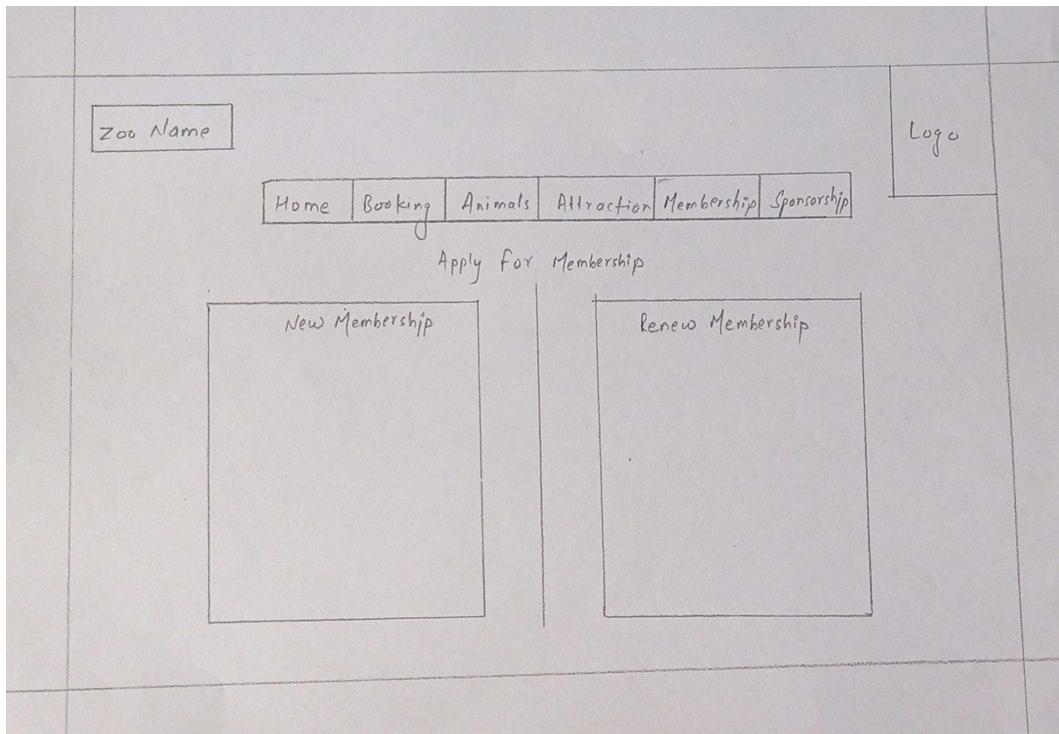
Animals

Zoo Name							Logo
<input type="button" value="Home"/> <input type="button" value="Booking"/> <input type="button" value="Animals"/> <input type="button" value="Attraction"/> <input type="button" value="Membership"/> <input type="button" value="Sponsorship"/>							
<p><i>Animal Image</i></p>				<p><i>Animal Description</i></p>			

Attraction



Membership



Zoo Name							Logo	
Home Booking Animals Attraction Membership Sponsorship								
Apply for New Membership								
Name:	<hr/>						E-mail:	
Gender:	<hr/>						Payment Option	
<input type="radio"/>	<input type="radio"/>							
Submit			Download					
							New Membership	

Zoo Name							Logo	
Home Booking Animals Attraction Membership Sponsorship								
Apply for Renew Membership								
Name	<hr/>	Email	<hr/>					
Gender	<input type="radio"/>		<input type="radio"/>					Payment Option
<input type="radio"/>	<input type="radio"/>							
Button								
							Renew Membership	

Sponsorship

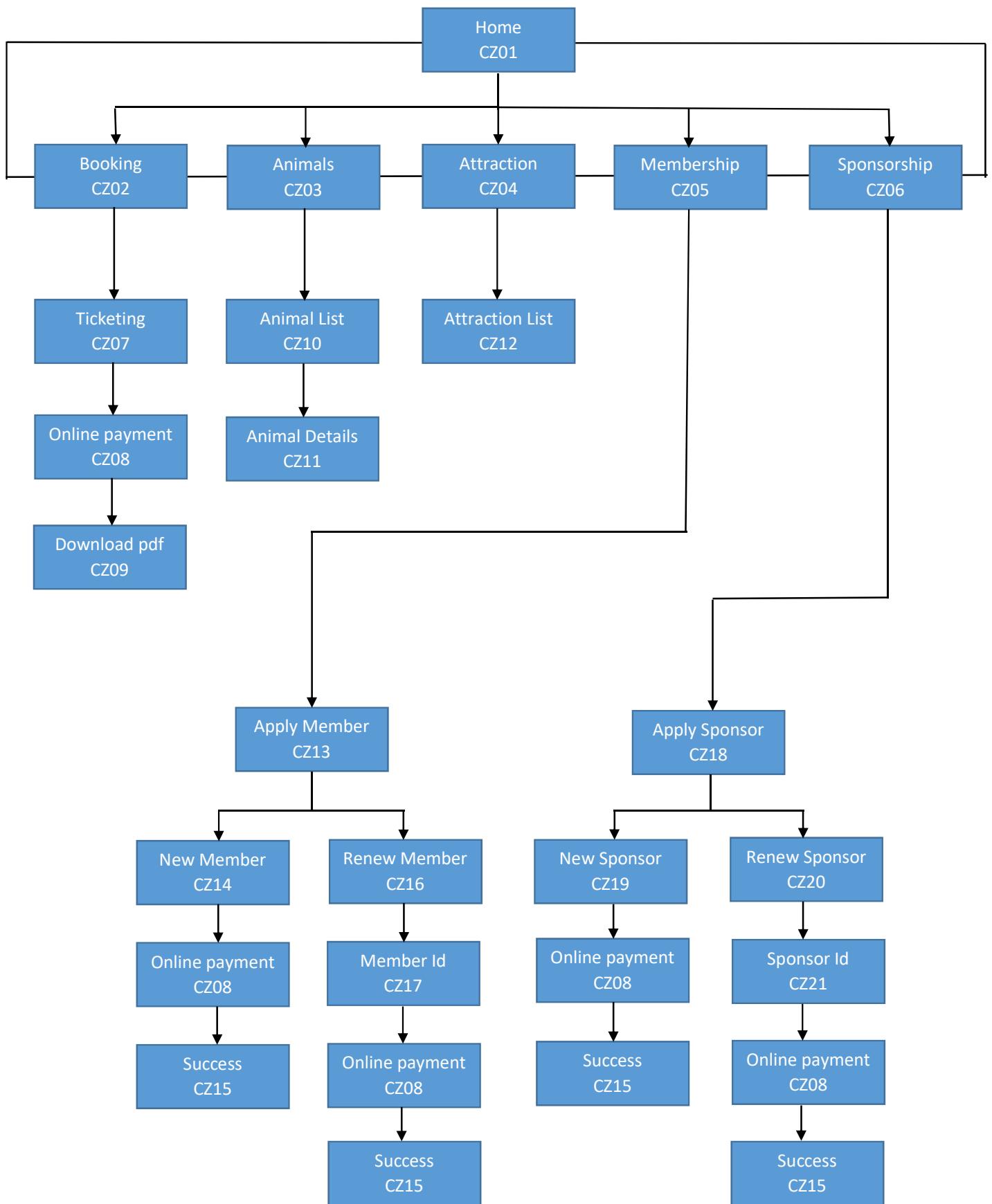
Zoo Name							Logo
Home Booking Animals Attraction Membership Sponsorship							
Apply for Sponsorship							
New Sponsorship				Renew Sponsorship			

Zoo Name							Logo
Home Booking Animals Attraction Membership Sponsorship							
Renew Your Sponsorship							
Existing Customer: Client/Company Name: Tel. No. :				Payment option: Renew sponsorship			
Client address: Animals to be Sponsored: Animals location: Sponsorship Band:							
<input type="button" value="Button"/>							

Zoo Name							Logo
Home Booking Animals Attraction Membership Sponsorship							
Apply for New Sponsorship							New Sponsorship
Client/Company Name: Tel. No.:			Payment option:				
Client address: Animals to be Sponsored: Animals location: Sponsorship Band:							
<input type="button" value="Button"/>							

3.1.2 System Navigation Diagrams

System Navigation Diagram for Zoo Website



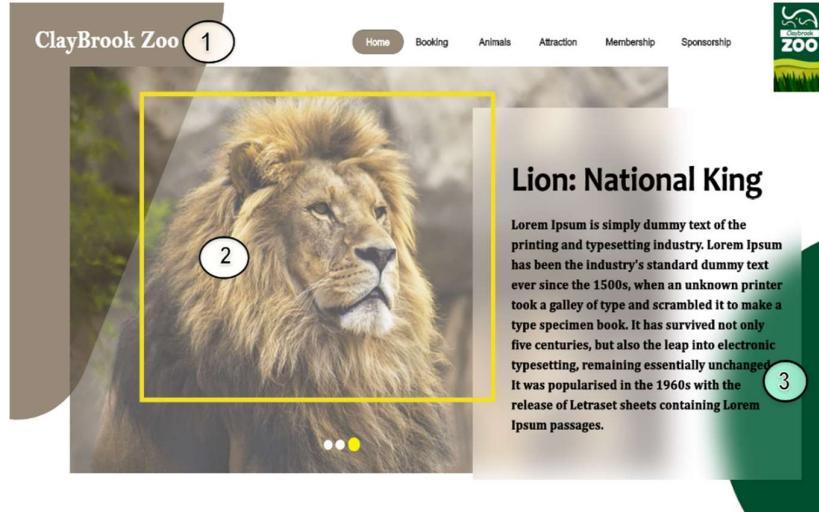
3.3.3 System Screen Mockups

Screen Mockups for the zoo website.

1. This section includes the logo of the zoo and its name as well as a navigation bar that helps the user to navigate to different pages of the website. It will remain concordant in all of the webpages.

2. This is where the image for any events or news related to the zoo is displayed. Different images will slideshow in a certain interval of time.

3. This section contains a small description of the corresponding image of the events or news displayed in the page. Clicking on it will redirect them to a new page containing detailed information about that particular news.



- It tells the user the title and purpose of this page.

- This section allows the user to select number of tickets they want to buy. Selection will be different for children and adults.

- This is where the price for the number of selected tickets will be calculated and displayed. Calculation will be done differently for the children and adult tickets.

- It shows the total price for the all the selected tickets including both children and adult.

5. This section incorporates the payment options for the tickets. If they choose online payment, they will be redirected accordingly, and if chosen alternate they will remain in the same page.

- This box displays the ticket price and other necessary criteria such as age constraints to be considered child and others.

1. Get your Tickets here!

2. No of Children: 2

3. Sum: 3

4. Total Sum: 3

5. Select the method of payment:

- online
- Pay on visit

6. Ticket Fares

Ticket Type	Price
Child	£8
Adult	£10
Concession	£8
Family Ticket(2&2)	£32
Family Ticket(2&3)	£40

1. All the sections here list the animals that are present and protected in the zoo.

On clicking the section, details of the respective animal is displayed.

2. This section gives the visitor option to list all animals or animals according to their species such as pieces, mammals, reptiles, amphibians and aves.

3. This is where one can search any animal based on their name or their habitat by using the proper keyword or any related list will be displayed.

1. It displays the image of the animal whose detailed information is given.

2. This section contains the name and the detailed information of the animal clicked from the list of animals.

1. This gives user an outline of one of the attractions of the zoo.

2. This section gives complete information on the corresponding outline of the attraction.

3. This is the image of the listed attraction in the page. This tends to give visitor a visual example of the attraction.

ClayBrook Zoo

Home Booking Animals Attraction Membership Sponsorship

Excepteur sint occaecat cupidatat 1

Culpa qui officia deserunt mollit anim id est laborum. Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritas et quasi dolorem architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptatem quia voluptas sit, aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi non sequi. Neque porro quisquam est, qui sequi dolorem ipsum quia dolor sit amet, consecetur adipisci velit, sed quia non numquam eiusmod tempora incidunt ut labore et dolore magna aliquam quaerat voluptatem.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat.

"Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. Sed ut perspiciatis unde omnis iste natus error sit voluptatem."

2

3

- | |
|--|
| 1. Gives an outline of the function of the page. |
| 2. The box here displays the cost for applying for new membership. |
| 3. Clicking on it brings out a form which is to be filled to get a new membership. |
| 4. This box displays the cost for renewing the membership. |
| 5. Clicking on it brings out a form which is to be filled to renew the membership. |

ClayBrook Zoo

Home Booking Animals Attraction Membership Sponsorship

1 Apply For Membership

New Membership 2

\$ 1000 /annual

3

Renew Membership 4

\$ 500 /annual

5

1. Gives an outline of the function of the page.

2. This section requires the name of the person applying for the new membership.

3. This section requires the email address of the person applying for the new membership.

4. It requires the person applying for the new membership to fill out his/her gender preference.

5. This section gives the applicant options to choose the method of payment. Clicking on online pay will redirect them accordingly while clicking on pay on visit lets them continue to the page.

This portion makes sure the applicant wants to continue further. It is not accessible to the applicant until other boxes above are not filled and only accessible to those who have chosen pay on visit.

6. This section allows the applicant to submit their application.

7. It only displays information about the cost for obtaining a new membership of the zoo.

The screenshot shows a membership application form for ClayBrook Zoo. At the top, there's a navigation bar with links for Home, Booking, Animals, Attraction, Membership (which is highlighted), and Sponsorship. The logo for ClayBrook Zoo is also at the top right. The main form area has a green header 'Apply For New Membership' with a large green arrow pointing right. Below it, there are several input fields and controls:

- 1.** A green circle labeled '1' is positioned above the title.
- 2.** A green circle labeled '2' is positioned above the 'Name' input field.
- 3.** A green circle labeled '3' is positioned above the 'E-mail' input field.
- 4.** A green circle labeled '4' is positioned above the 'Gender' section, which includes 'Male' and 'Female' radio buttons.
- 5.** A green circle labeled '5' is positioned above the 'Payment Option' dropdown menu, which has 'Pay on Visit' and 'Online Pay' options.
- 6.** A green circle labeled '6' is positioned above the 'Are you sure you want continue?' toggle switch and the 'Submit' button.
- 7.** A green circle labeled '7' is positioned above a green box on the right side containing membership details: 'New Membership' and '\$ 1000 /annual'.

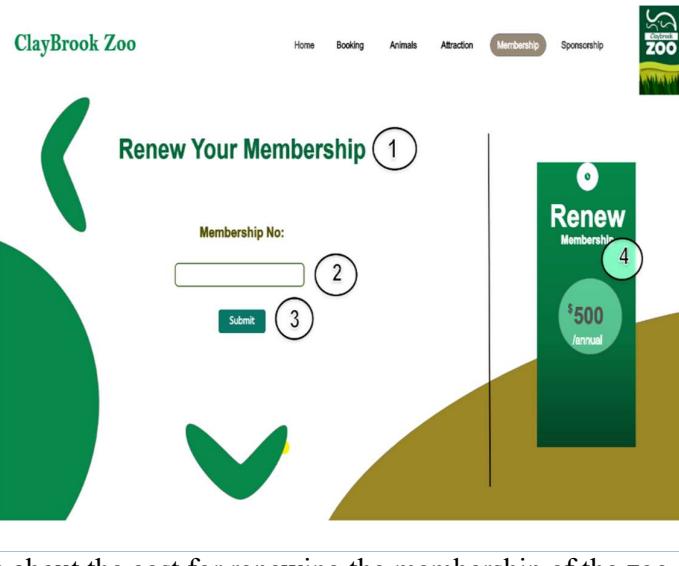
The background of the form features a green and gold abstract design.

1. Gives an outline of the function of the page.

2. This section requires the membership number of the existing member of the zoo. The data entered here should not be incorrect.

3. This section allows the user to submit their id. Provided that it is correct, the user is directed to another page where they can review their existing information and make changes if needed.

4. It only displays information about the cost for renewing the membership of the zoo.



1. Gives an outline of the function of the page.

2. This section requires the name of the person renewing his/her membership.

It is automatically filled up if the membership number entered is correct and registered in the zoo's database, and is editable as well.

8. This section allows the applicant to submit their application.

4. It requires the person applying for the new membership to fill out his/her gender preference.

6. This portion makes sure the applicant wants to continue further. It is not accessible to the applicant until other boxes above are not filled and only accessible to those who have chosen pay on visit.

5. This section gives the applicant options to choose the method of payment. Clicking on online pay will redirect them accordingly while clicking on pay on visit lets them continue to the page.

7. It only displays information about the cost of renewal of membership.

ClayBrook Zoo

Home Booking Animals Attraction **Membership** Sponsorship

Renew Your Membership

1. Name

2. Gender Male Female

3. E-mail

4. Payment Option

5. Pay on Visit
Online Pay

Are you sure you want continue?

Submit

Renew Membership
\$ 500 /annual

1. Gives an outline of the function of the page.

2. The box here displays the cost for applying for new sponsorship.

3. Clicking on it brings out a form which is to be filled to get a new sponsorship.

4. This box displays the cost for renewing the sponsorship.

5. Clicking on it brings out a form which is to be filled to renew the sponsorship.

ClayBrook Zoo

Home Booking Animals Attraction Membership **Sponsorship**



1 Apply For Sponsorship



1. Gives an outline of the function of the page.

2. This section requires the sponsorship number of the existing member of the zoo. The data entered here should not be incorrect.

3. This section allows the user to submit their id. Provided that it is correct, the user is directed to another page where they can review their existing information and make changes if needed.

ClayBrook Zoo

Home Booking Animals Attraction **Membership** **Sponsorship**



1 Renew Your Sponsorship

Sponsorship No:

 2
 3


4. It only displays information about the cost for renewing the sponsorship.

1. This section requires the existing sponsorship id of the sponsor. The information entered here must be correct and should match the data stored in the zoo's database. If the data entered is correct, all the other data is automatically filled up from the database.

2. This section gives the applicant options to choose the method of payment. Clicking on online pay will redirect them accordingly while clicking on pay on visit lets them continue to the page. This section is only accessible if the information in the field above is correct.

4. This portion makes sure the applicant wants to continue further. It is not accessible to the applicant until other boxes above are not filled and only accessible to those who have chosen pay on visit.

5. This section allows the applicant to submit their application.

ClayBrook Zoo

Home Booking Animals Attraction Membership Sponsorship

Renew Your Sponsorship

Existing Customer 1

Client/Company Name

Telephone number

Client address

Animal(s) to be sponsored

Animal location

Sponsorship Band (A-E)

Payment Option 2

Pay on Visit
Online Pay

Are you sure you want continue? 4

Submit 5

6

Renew Sponsorship
\$ 500 /annual

LEARN MORE

1. Gives an outline of the function of the page.

2. This section requires the client or company interested in sponsoring to fill up their name.

3. This section requires the applicant to fill out their telephone number.

5. It requires to be filled up with the name of the animal to be sponsored.

4. This section requires the applicant to fill out their address.

6. The location (in the zoo) of the animal which is to be sponsored must be entered in this section.

8. This section gives the applicant options to choose the method of payment. Clicking on online pay will redirect them accordingly while clicking on pay on visit lets them continue to the page.

9. This portion makes sure the applicant wants to continue further. It is not accessible to the applicant until other boxes above are not filled and only accessible to those who have chosen pay on visit.

11. This section allows the applicant to submit their application.

10. It only displays information about the cost of new sponsorship of the animal of the zoo.

7. The sponsorship band of the applied sponsorship must be filled out in this section.

1. Displays the user that their payment was successful.
2. This section allows the user to download the pdf version of their payment.
3. It asks the applicant to bring his/her identification card during payment for the verification.

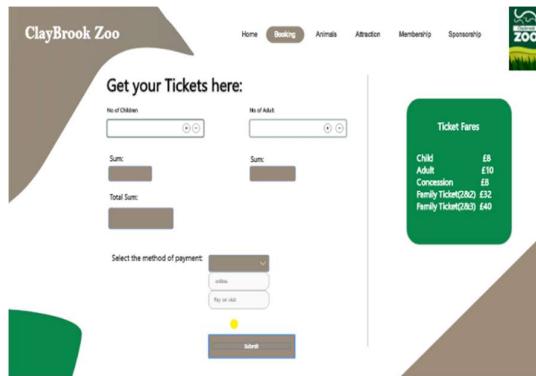
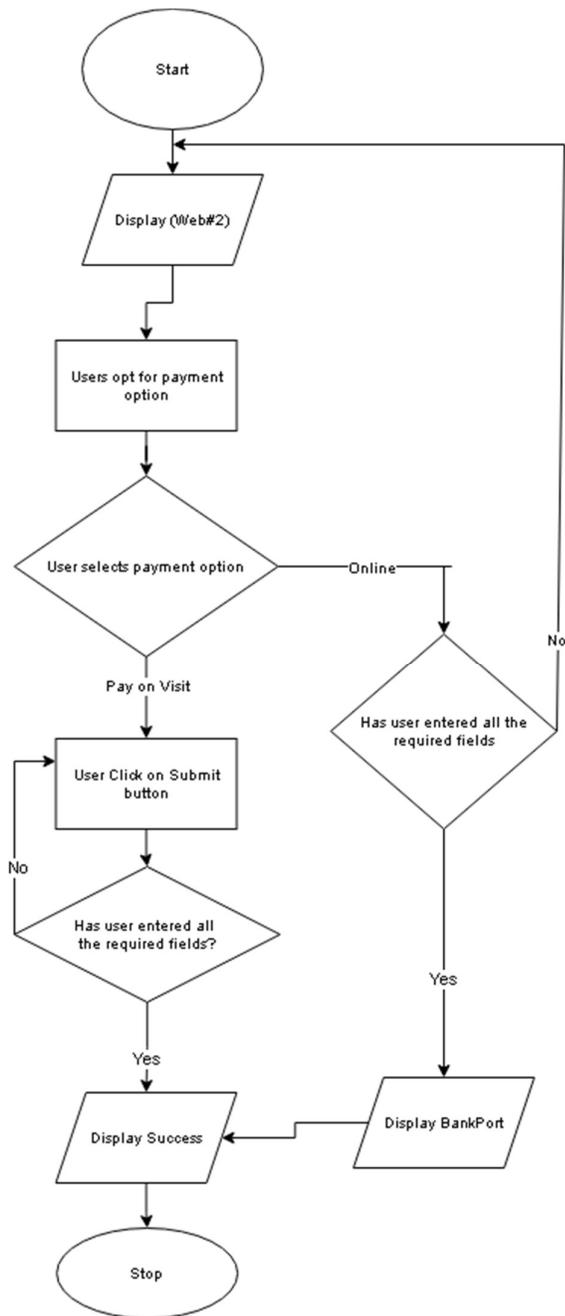
1. This section asks for the user's email address in case they opt to get daily news about the zoo. It also includes a field for the users to send their feedback to the zoo.

2. It includes the map of the zoo. The user can zoom in and out the map and get information about the particular area of the zoo by clicking on it.

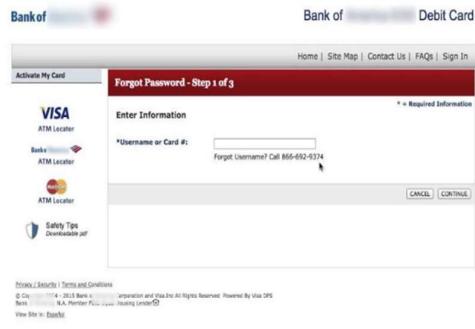
3. It is a calendar icon. On clicking it, the user will be able to see the calendar of the zoo as well as the activities and events listed in it.

3.3.4 System Activity Event Diagram

Online Ticketing



Web#2

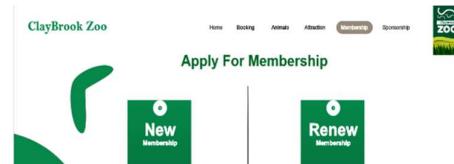
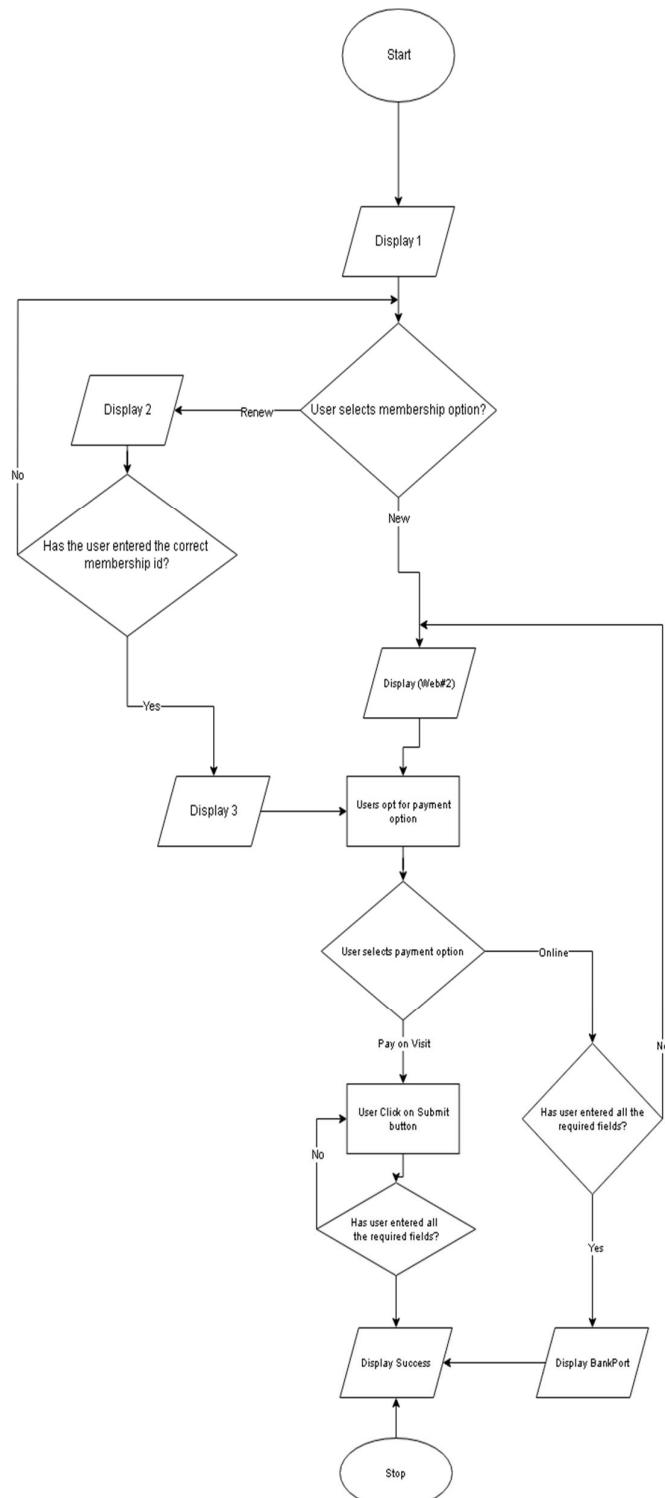


Bank Port

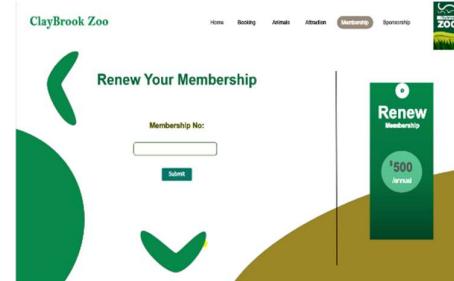


Success

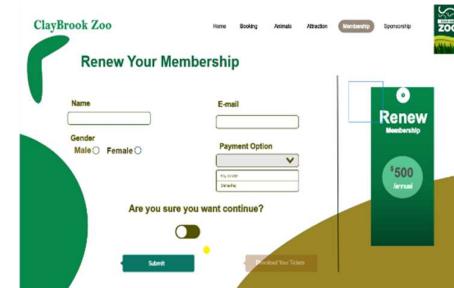
Applying for Membership



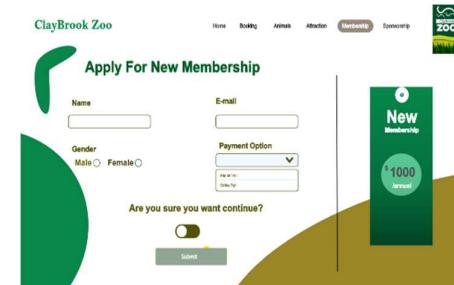
Display 1



Display 2



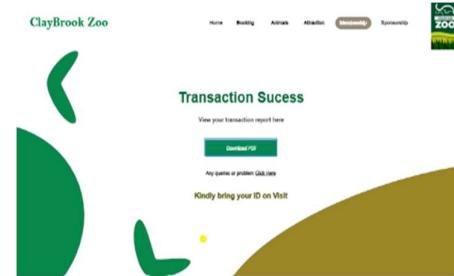
Display 3



Display Web#2

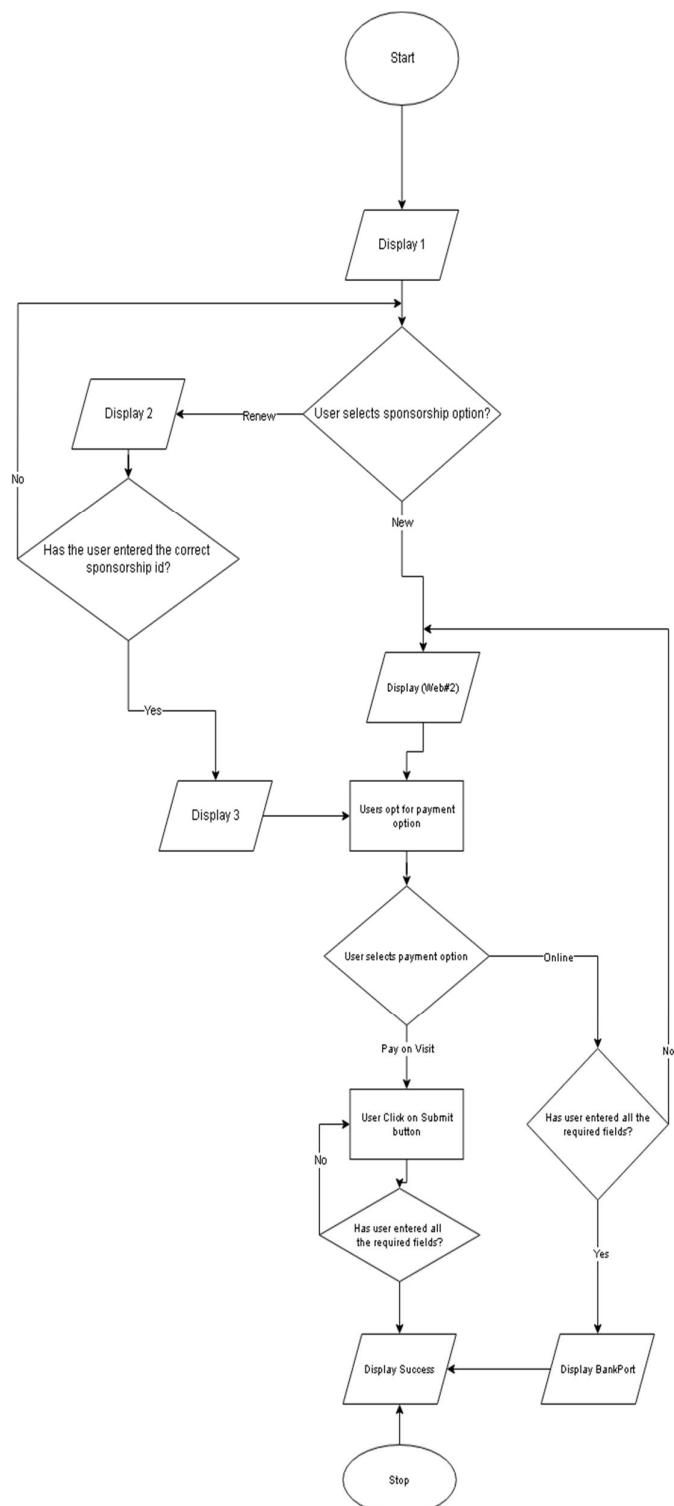
This screenshot shows a 'Forgot Password - Step 1 of 3' form from a bank port. It asks for a username or card ID and provides a forgot password link. It includes links for 'Activate My Card', 'Safety Tips', and 'Debit Card'.

Bank Port

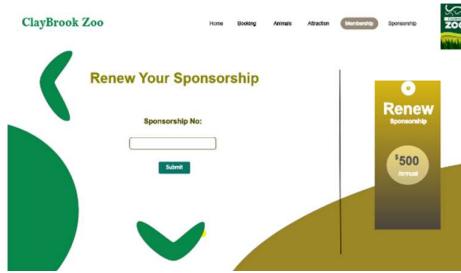


Success

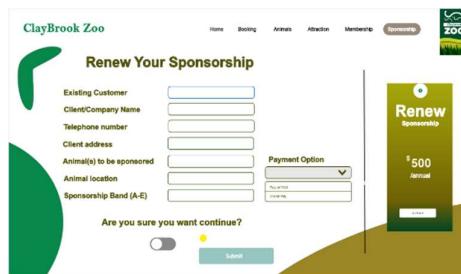
Applying for sponsorship



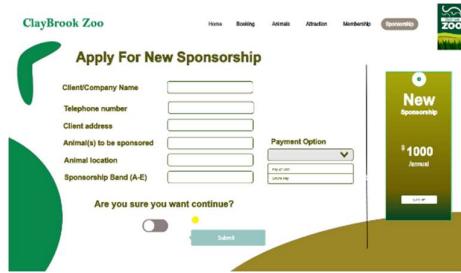
Display 1



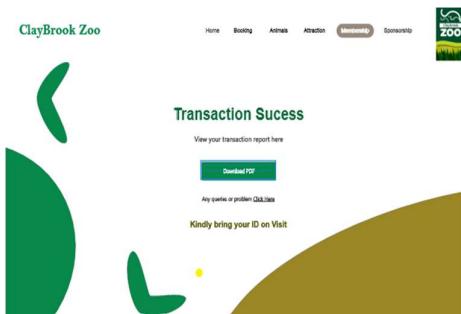
Display 2



Display 3



Display Web#2



Success

This screenshot shows a 'Forgot Password - Step 1 of 3' form from a bank's website. It includes fields for 'Enter Information' (Username or Card #) and 'Forgot Username? Call 800-852-9374'. There are also 'CANCEL' and 'CONTINUE' buttons. The form is part of a larger 'Bank of [redacted]' interface.

Bank Port

3.4 Design Revisions

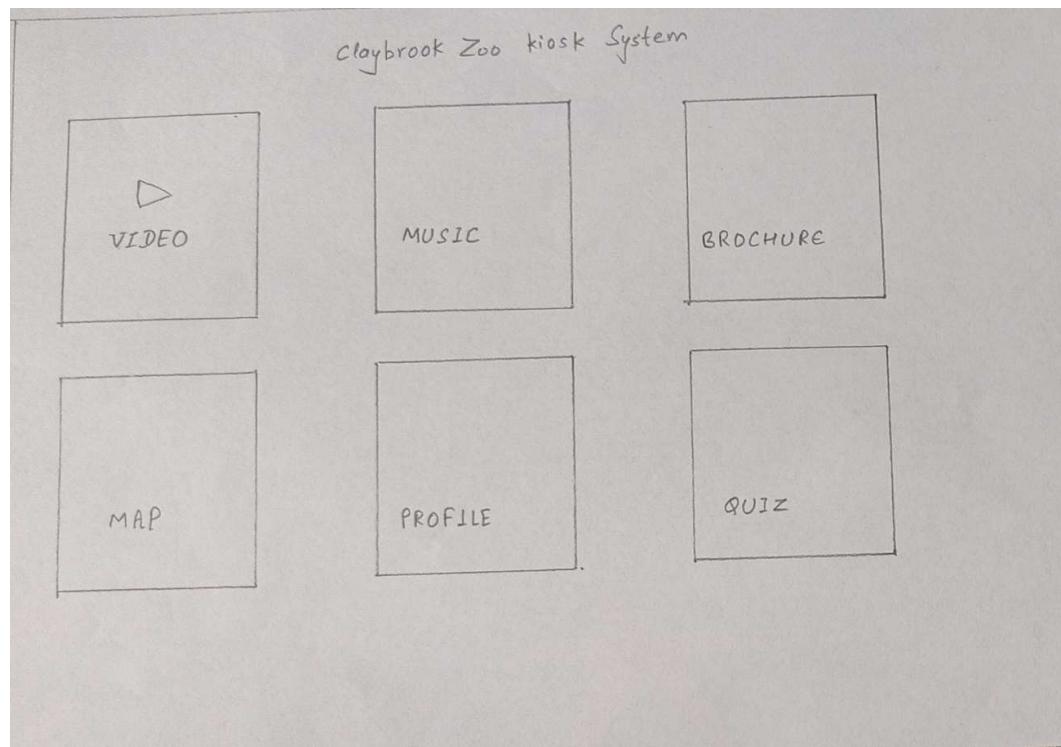
The above displayed are all the draft interface designs for Zoo Website.

3.5 Draft Interface Designs for Kiosk / Visitor Information

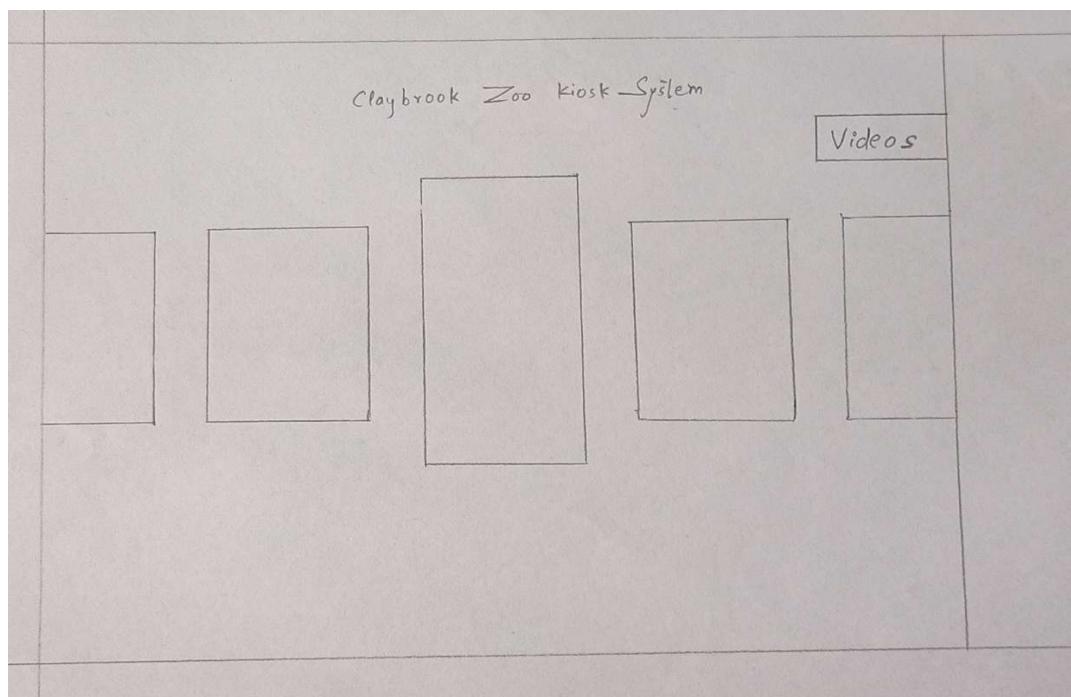
3.5.1 Wireframes

Below are the wireframes for the kiosk / visitor information system

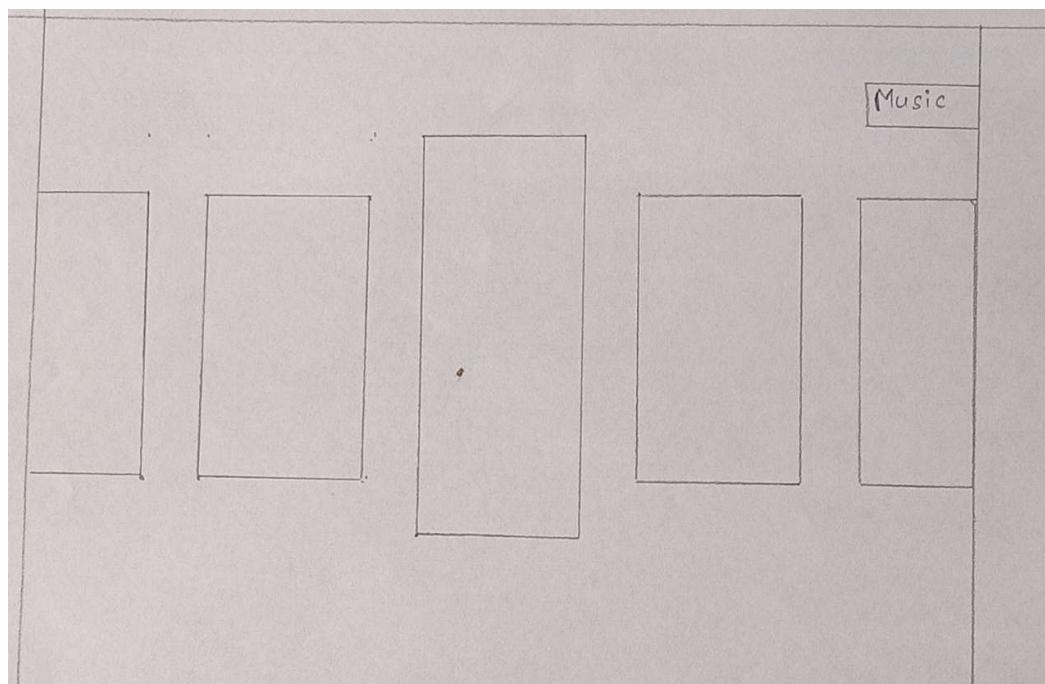
Home page



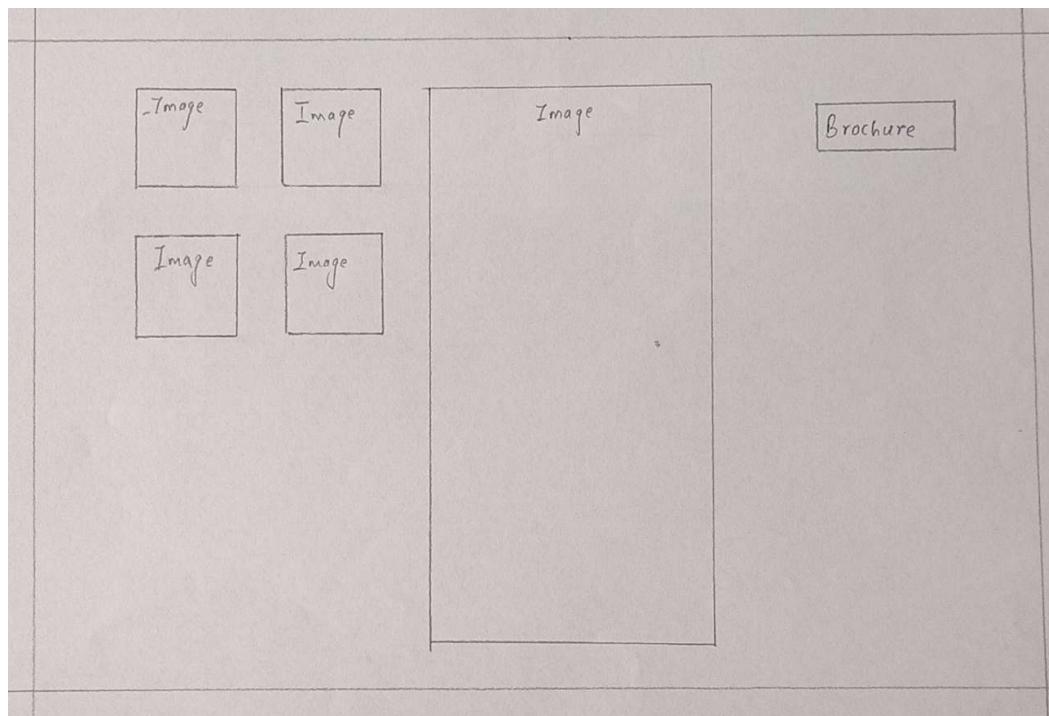
Video



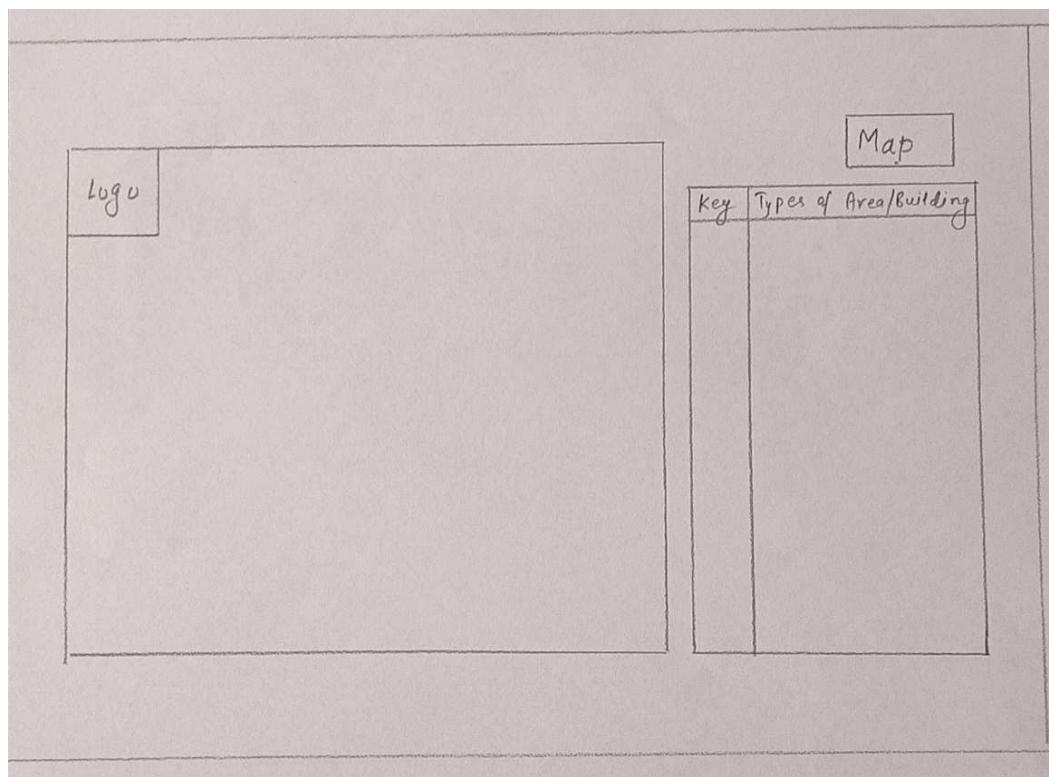
Music



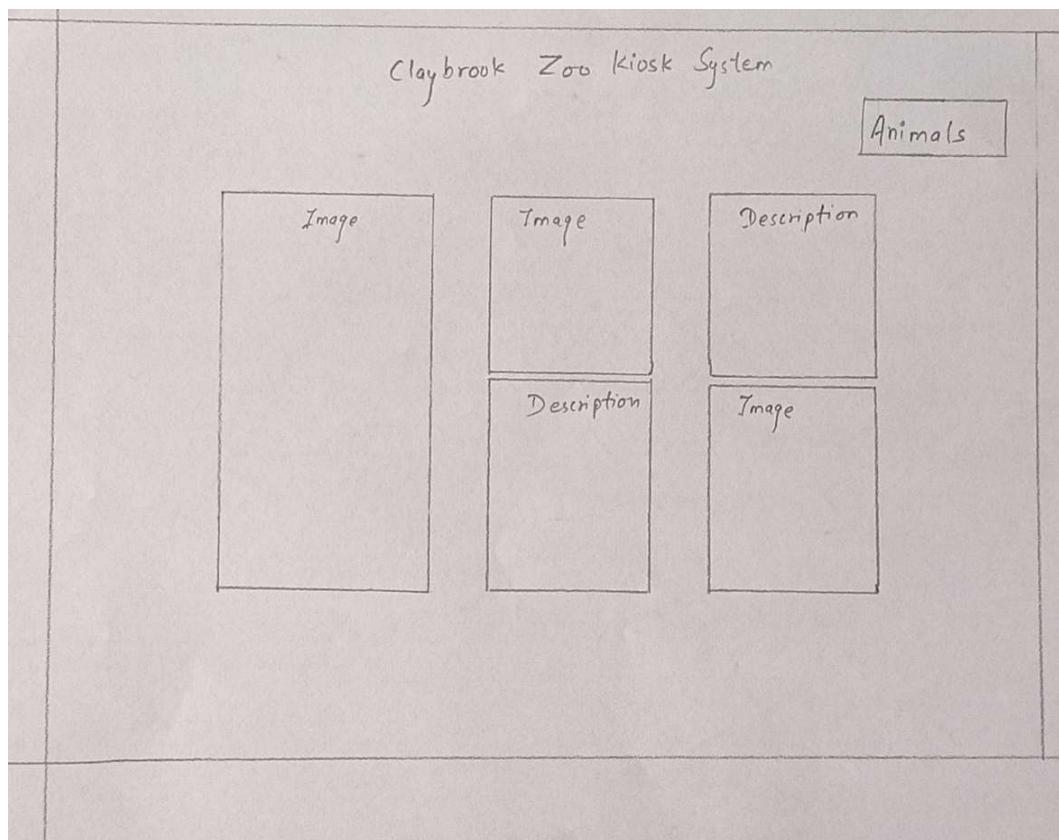
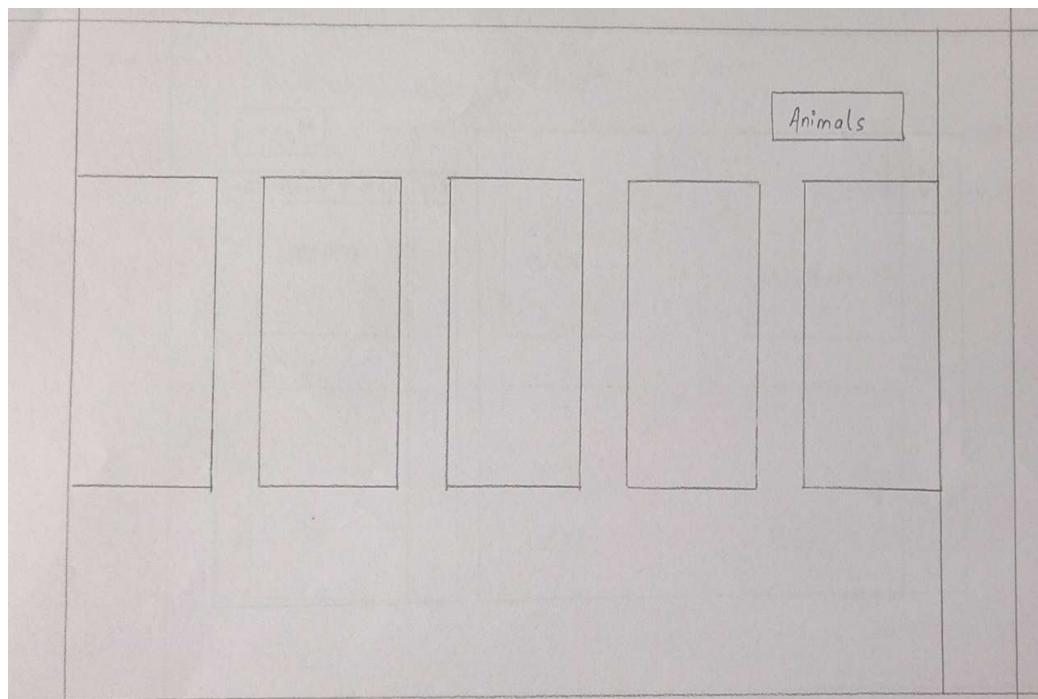
Brochure



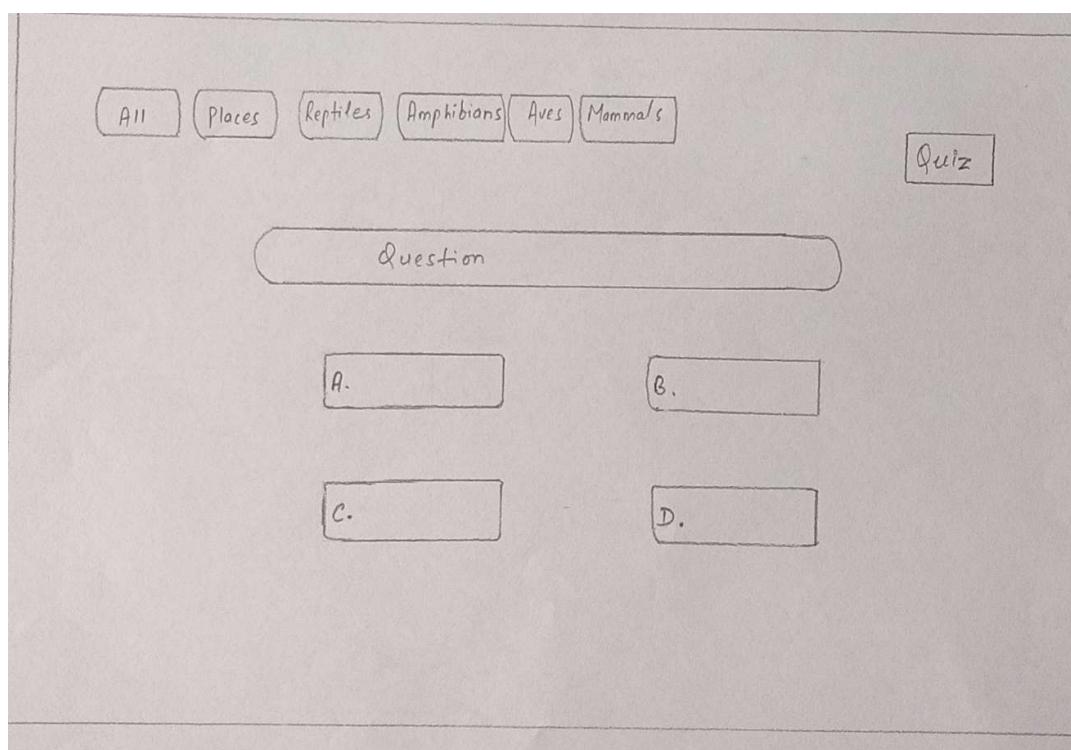
Map



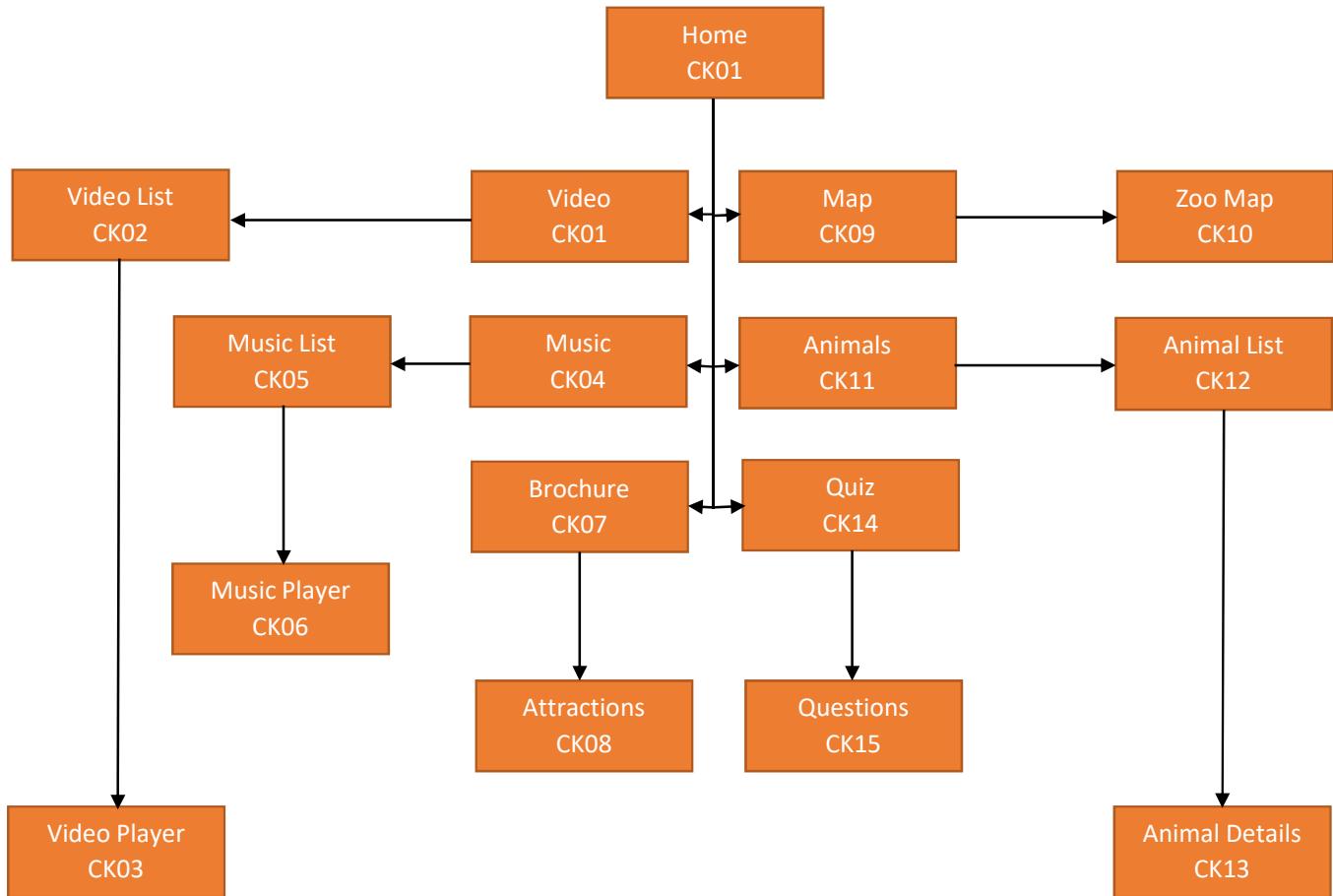
Animals



Quiz



3.5.2 System Navigation Diagram



3.5.3 System Screen Mockups

1. It is the header of the system. It is consistent in every page of the system

3. This section allows the user to access the music in the kiosk system.

4. This section allows the user to access the brochures installed in the kiosk system.

5. It allows the user an access to the map of the zoo.

2. This section allows the user to access the videos in the kiosk system in a click.

6. On clicking this, the user gets list of all the animals of the zoo.

7. The users can enjoy a quiz game related to the animals of the zoo by clicking on this section.



1. It displays the title of this page. Here, it is videos.

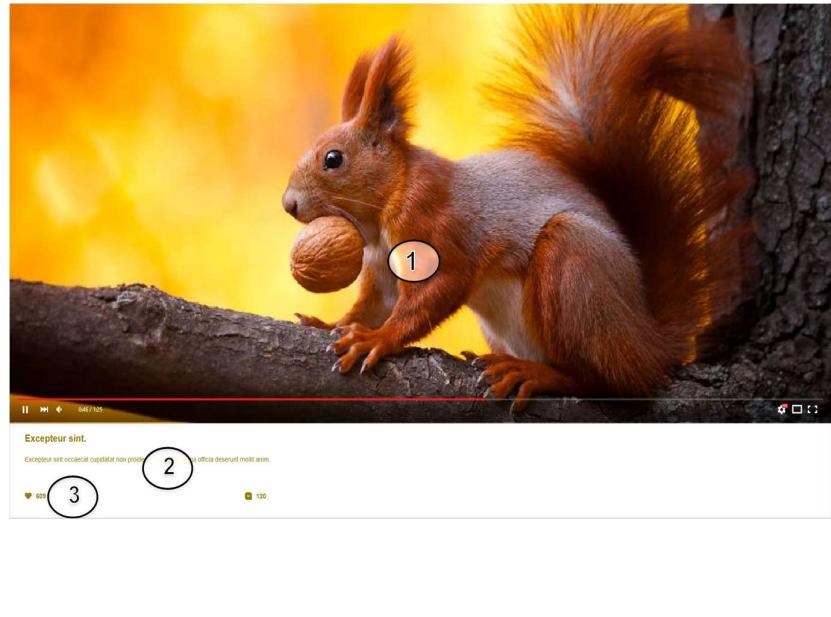
2. All the videos are listed properly with name, thumbnail, small description likes and dislikes. Video that pops up is automatically played with no options to alter any settings about the video, and on clicking on any video, a new screen appears with the selected video. The user can also like or dislike the video.



1. Here, only the selected video is displayed and played with options to play/pause, quality and other.

2. Name and a small description about the video.

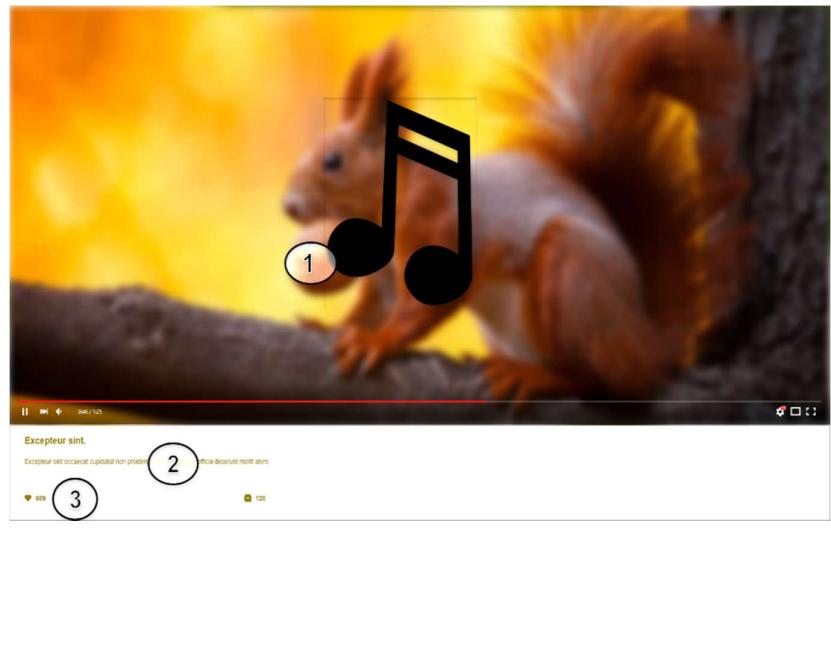
3. The user can like or dislike the video in this section.



1. Here, only the selected music is played with options to play/pause, quality and other. Unlike the video it will only have an image.

2. Name and a small description about the music.

3. The user can like or dislike the video in this section.



- It displays the title of this page. Here, it is music.

All the music is listed properly with name, thumbnail, small description likes and dislikes. Music that pops up is automatically played with no options to alter any settings about the music, and on clicking on any music, a new screen appears with the selected music. The user can also like or dislike the music.

Claybrook Zoo Kiosk System 1

Music

The screenshot shows a grid of five animal thumbnails: a deer, a lion, a squirrel, a raccoon, and a wolf. Each thumbnail has a play button, volume control, and a progress bar indicating 60% completion. Below each thumbnail is a small text box with the word 'Excepteur sint.' followed by a longer description in French. The background features a yellow-to-orange gradient wavy pattern.

- This is the title of the page. Here, it is brochure.

2. These sections displays any image related to the contents of the brochure in the kiosk.

- It displays the title of the brochure.

4. These sections contains all the detailed information of the title displayed in the brochure.

1

Brochure

The screenshot shows a collage of four animal images: a lion, a wolf, a chimpanzee, and a tiger. Below the collage is a section with the text 'Excepteur sint occaecat cupidatat.' and a long paragraph of placeholder Latin text. To the right is a large image of an elephant being sprayed with water from a hose. The background features a yellow-to-orange gradient wavy pattern. A callout bubble labeled '2' points to the collage of images. Another callout bubble labeled '3' points to the text 'Excepteur sint occaecat cupidatat.'. A third callout bubble labeled '4' points to the large image of the elephant.

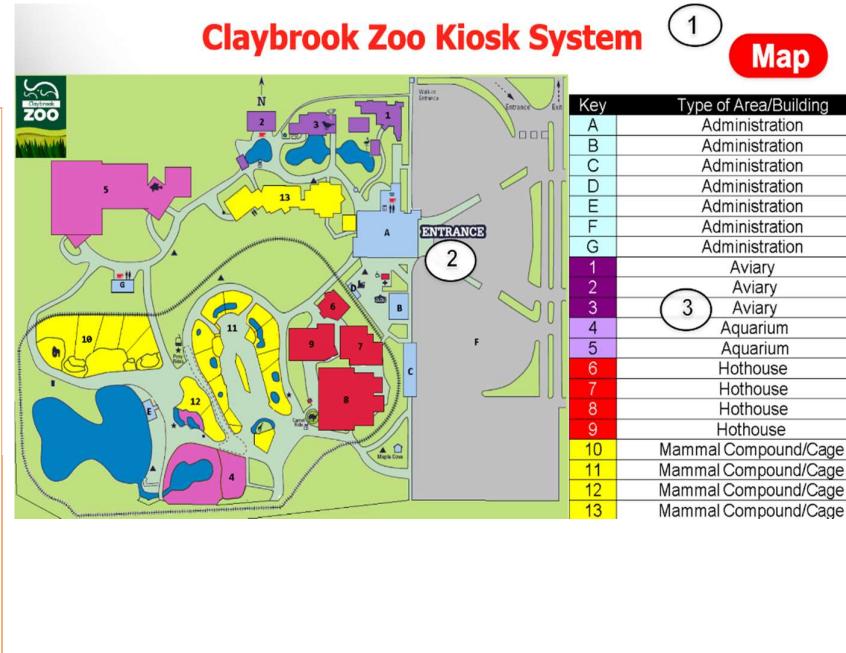
Culpa qui officia deserunt mollit anim id est laborum. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat.

1. This is the title of this page. Here, it is map.

2. This section contains the map of the zoo. The user can zoom in and out and also slide around the map to find the locations they wish. It also has keys allocated to the specific locations of the zoo.

3. It contains all the necessary keys and name of that particular location or building which the key denotes.



1. This is the title of the page. Here, it is animals.

2. This sections list the animals present in the zoo along with their name and a brief description. On clicking the section, a detailed information of the selected animal from is list is displayed.



1. These sections contain the image of the animal whose information is displayed.

2. These sections contain the detailed information of the animal selected from the list of the animals.

Claybrook Zoo Kiosk System

The screenshot shows a large gorilla image on the left. To its right is a smaller image of a gorilla with a baby. Below these are two boxes of text and images. The top box contains the text "Exceper sint occaecat cupidatat" and a small image of a gorilla. The bottom box contains the text "LOREM IPSUM DOLOR AMET CONSECTETUR" and a link "webpage". A yellow and orange decorative bar is at the bottom.

1. This is the title of the page. Here, it is quiz.

2. This section gives user the choice to take the quiz game of the animals of their choice. They can play quiz about all the animals in the zoo or of a specific criterion such as Pisces, reptiles, amphibians, aves and mammals.

3. It displays the question of the game.

4. These contains the answer options for the question displayed above. The user has to choose one among them and after then he/she will get to know if the selected answer is correct or not.

Claybrook Zoo Kiosk System

Quiz

Categories: All, Pisces, Reptiles, **2 ans**, Aves, Mammals

Question: **epsum ipsum ep sups umep³ u mepsu mep sum eps ?**

Answers:

- All (4)
- All
- All
- All

3.5.4 System Activity Event Diagrams

In kiosk system there are no such activities that requires the system activity event diagrams.

3.6 Design Revisions

The above displayed are all the draft interface designs for Visitor / Kiosk Information.

4. Analysis and Design Record Management System

It is a method of gathering and evaluating data, identifying the problem, and breaking down a system into its core element. System analysis is used to evaluate a system or its components in order to identify its aims. It is a problem-solving approach that strengthens the system and maintains that all of the system's components work together to achieve their aims. The system's behavior is defined by the analysis.

4.1 Preliminary Analysis Stages

The initial step at the outset of a project that examines if the concept is viable is known as preliminary analysis. The purposes of preliminary data analysis are to update the data in order to make it ready for future analysis, define the data's essential properties, and describe the findings. Additionally, this stage helps to identify if there are any current problems. System analysis and Design documentation are implemented in this section.

4.1.1 Textual Analysis

Textual Analysis, also known as Content Analysis, it is a research method for deriving useful information from a text. The purpose of textual analysis is to learn how people communicate their opinions, ideas, and experiences by analyzing the language, symbols, and/or pictures present in texts.

The table below contains five different classes and their identification is also mentioned along with them. Whenever something is going to be changed on zoo, the administrator can easily modify the website through this analysis process.

Category	Category Identification
Animals	Add_Animals, Modify_Animals, Remove_Animals, View_Animals, Check_Animals_Health, Upload_animal_image,
Employers	Add_Employers , Remove_Employers , Modify_Employers , Employers_id,login, logout, Change_password
Locations	Add_Location, View_Location,Modify_Location, Remove_Location
Events	Add_event, Remove_Event, modify_Event ,Add_event_sponsors
Sponsors	Add_sponsors, Remove_Sponsor, Add_banner, Check_funding, view_sponsors

4.1.2 Significant Event Analysis

This section is mostly handled by administrator or manager. Sometime zookeeper may also have excess to this feature. In this section contain the action of users which may perform while using this system.

Action	Officers	Requirements
Login	Administrator, manager	Site account(Id and Password)
logout	Administrator, manager	
Animals		
Add Animals	Zookeeper, Administrator, manager	Animal id, Species, date_of_birth, animal name, age, habitat, diet, weight, sex, total population, scientific name
Modify Animals	Zookeeper, Administrator, manager	Location id, arrival date, animal id, age, breed, color,
Remove Animals	Zookeeper, Administrator, manager	id
Employers		
Add Employers	Administrator	First name, Last name, Years_of_experience, email, employersid,password
Modify Employers	Administrator	First name, last name, idpassword
Remove Employers	Administrator	id
Location		
Add Location	Administration, manger	Code, size, capacity, Aid ,animal zone
Modify Location	Administration, manager	Code, size, capacity, Aid, animal zone
Remove Location	Administration, manager	id
Event		
Add Event	Manager, Administrator	event location, event news, event_date_time
Modify Event	Manager, Administrator	Event location, event_date_time
Remove Event	Manager, Administrator	Location,news,date and time
Sponsors		

Add Sponsors	Administrator, manager	Sponsors id, company name, contact, contract form, email, address,
Modify Sponsor	Administrator,manager	Contract form,address,email,contact
Remove Sponsors	Administrator,manager	Sponsor id
Sponsorship	Administrator,manager	Sponsor id, animals, sponsored amount, started year, ending year

Note: Only administrator has excess to this page.

4.1.3 Class Responsibility Collaborator (CRC)

A class Responsibility collaborator model is a three sectioned collection of standard index cards. CRC are used to analysis when designing object-oriented software. This will minimize the complexity of project. Three areas make up the CRC:

- Class name: On top of the table and it is a collection of similar object
- Responsibilities: On left side and what classes know or does
- Collaborators: On right side and Additional classes that are interacted with to fulfill responsibilities

The CRC for the system are shown below:

Employers

Employers	
Enroll in work Attend seminar Get payment	Zoo manager Administrator

Animals

Animal	
Source of attraction Entertainment	Employers

Sponsors

Sponsor	
Sponsoring animals Financial support Advertisement promotion	Administrator Manager
Location	
Animals location Events location	Management team Employers
Events	
Event	
Advertisement and promotion Entertainment Sponsor information Animals information	Manager Employers

4.2 Detailed Static System Designs

The process of defining the elements of a system, such as the architecture, modules, and components, as well as the many interfaces between those components and the data that flows through it, is known as system design. It's designed to meet companies or organization's specific goals and requirements by constructing a well-functioning system. The static modeling contains two parts.

The first part is documented on such way that non-technical people also can understand easily. This part is the collection of high level not typed modeling chart which is used early in analysis process to increase communication between client and developers. Second part is the main part of this process where description contains fully typed class interface and formal specification of software contracts.

The modeling method is referred known as static modeling, and the static model is represented using the business object notation (BON).

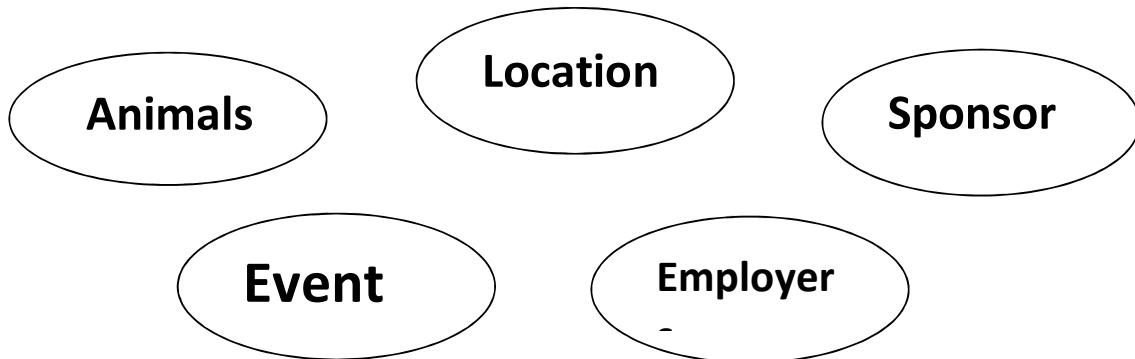
4.2.1 First Draft BON System Architecture Diagram

System architecture defines the structure, behavior and many other characteristics of a system. It includes a collection of concepts for modeling object-oriented software, a supporting notation (one graphical and one textual), and a set of rules and guidelines for creating the models. This architecture consists of Class, Root Class and Cluster.

Class:

It consists of structural feature which represents the state of an object of the class and behavioral features that define the way in which objects may interact. The classes are represented on elliptical circle.

On our System Animals, location, Event, Sponsors and Employers are the main classes and they are represented as class.



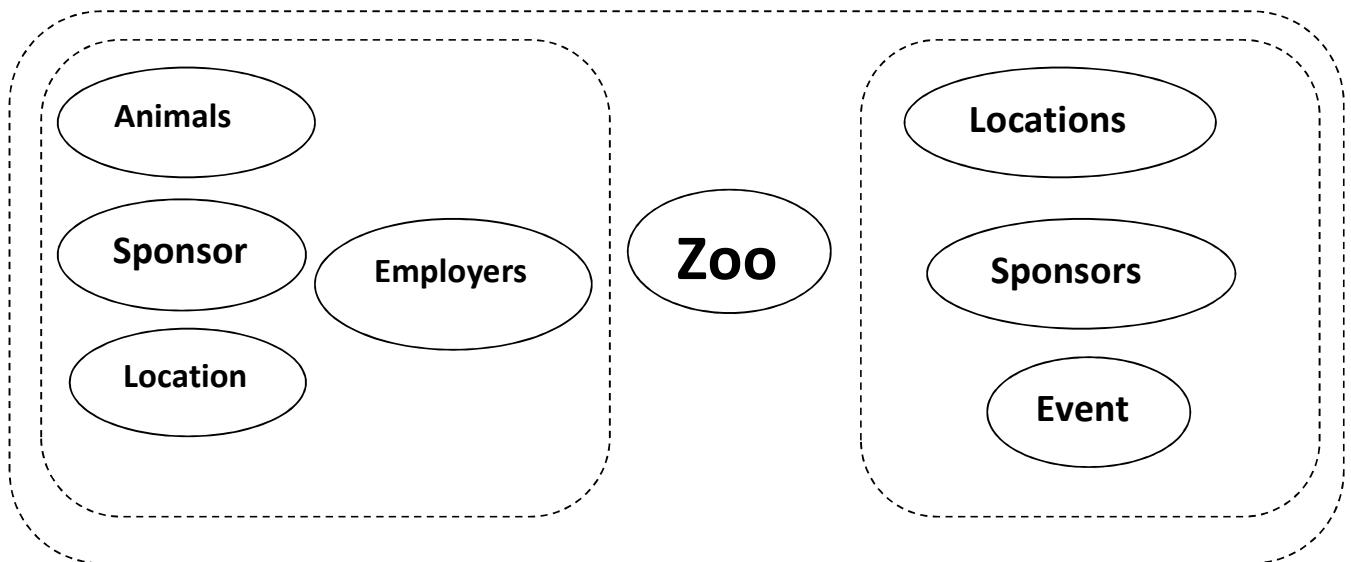
Root class:



When an object-oriented process is launched, one instance of this class is generated, and its initialization function drives the execution is known as root class.

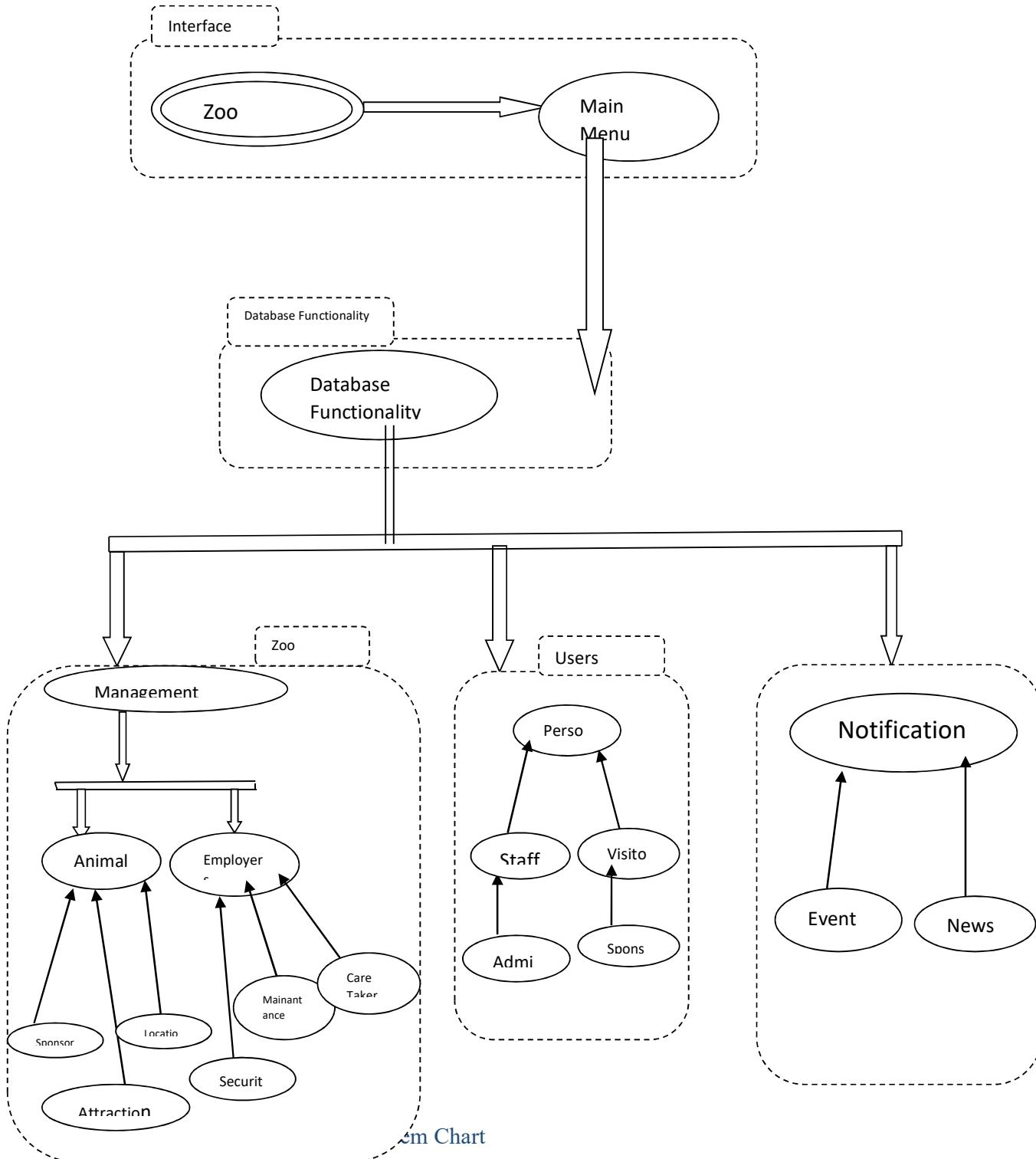
Cluster:

A cluster represents a group of related classes (and possibly other clusters) according to a selected point of view. Classes may be grouped differently depending on the particular characteristics one wants to highlight.



BON Diagram:

Set of diagrams representing possibly nested clusters, class headers, and their relationships. Bird's eye view of the system (zoom able).



An overview of each top-level cluster is included in the system chart. One or more clusters form a BON system, and each cluster has a number of classes.

SYSTEM	Record Management System	Part:1/1
Purpose:	To keep the track record of every element of the zoo	Indexing: Author: Keyword: Records
CLUSTER		DESCRIPTION
Employee		To keep the record of employee and monitor it.
Animal		To keep every record on animal.
Location		To track the location where the animal and event will be held.
Sponsor		To invest on the animal which they like.
Event		The new things that happen in the special days.

As this system chart is of Clay Brook Zoo, this keeps the detail records of everything.

4.2.3 BON Cluster Charts

Each class and sub-cluster in the cluster are described briefly in a cluster chart. To distinguish them from class names, sub-cluster names are placed in parenthesis. The suggested method is to list all classes first, followed by any sub-clusters. This is because sub-clusters frequently aggregate local services needed by a cluster's uppermost classes. For example, a sub-clusters could contain all specialized descendent classes of a particular class.

Employers

Cluster	Employee	Part:1/1
Purpose: To maintain and conserve the property of the zoo and animals.	Indexing: Author: Keyword:	
Cluster/Class		
Employee	Description	The worker who works as they are said in the zoo premises.
Onfield_employee		The worker who are physically present in the zoo to keep an eye on everything.
Security_employee		To check the security or keep surveillance on the people who comes to visit zoo.
Management_team		To keep record of the things that happens in zoo.

Animals

Cluster	Animals	Part1/1
Purpose: The most attractive thing on the zoo for the visit of people.	Indexing: Cluster: Employee Author: Keyword:	
CLUSTER/CLASS		
Animal	DESCRIPTION	The main attraction of zoo.
Animal_Species		There is various animal in zoo having different species.
Animal_gender		It is the most determinate factor of the visitors.

Sponsor:

Cluster	Sponsor	Part1/1
Purpose: The person or organization who invests their money on animals and support financially	Indexing: Cluster: Author: Keyword: Records	
Cluster	Description	
Sponsor	To support financially	
Sponsor_Contract	The formal agreement of sponsorship.	
Sponsor_element	The things that is included while signing the contract.	

Location:

Cluster	Location	Part:1/1
Purpose: To guide the visitor correctly.	Indexing: Cluster: Animal Author: Keyword: Records	
CLUSTER/CLASS	DESCRIPTION	
Location	To show where and which animal are kept.	
Location_code	Unique code for each place to represent them and have the easy access.	

Events

Cluster	Animals	Part:1/1
Purpose: Program that are conducted on special occasion.	Indexing: Author: Key word:	
CLUSTER/CLASS	DESCRIPTION	
Event	A special program on special day.	
Meeting	The discussion on how the event will be conducted.	
Location	The place where the event is going to be on.	
Timetable	The time when different type of performance and the event starts.	

4.2.4 BON Class Charts

Individual classes are represented by the class charts. Classes are viewed as black boxes, and the data in the class charts is derived from the answers to the following questions.

- What information can this class provide to other classes? This results in queries that are specific to the class.
- What services may other classes request from this class? This turns into class-specific commands.
- What are the regulations that the class and its customers must follow? This results in limitations for the class.

These are the things included in class chart:

- Inherits from – displays a list of classes that are direct descendants of this one.
- Queries – a list of relevant queries (value return; may not change system state).
- Commands - a list of commands that can be used (no value return; may change system state).

- Constraints – provides the class's and its operations' consistency requirements, as well as general business rules and other information that may affect the class's design and implementation.

Employers:

Class	Employers	Part:1/1
TYPE OF OBJECT Employers enroll on the zoo	Indexing: Cluster: Employers_detail Date: 12/28/2021	
Queries	Employers_id, First_name,last_name, ID, password	
Commands	Add, Remove, Modify, ,login, logout, Change_password	
Constraints		<ul style="list-style-type: none"> • Must have one active user • Password should contain uppercase, lowercase, symbol and numerical value • Only administrator has excess to modify pages

Animals:

Class	Animals	Part:1/1
Type of object Adding animals on the zoo	Indexing: Cluster: Animal_detial Date: 12/28/2021	
Queries	Animal_id,Species, date_of_birth, animal_name, age, habitat, diet, weight, sex, total_population, scientific_name, location_id, arrival_date, animal_id, age, breed, color	
Commands	Add_Animals, Modify_Animals, Remove_Animals, View_Animals, Check_Animals_Health, Upload_animal_image,	
Constraint	<ul style="list-style-type: none"> • Animal should be healthy. • Cover image for animal is compulsory • At least one sponsor is needed for one animal 	

Locations:

Class	Location	Part: 1/1
Type of object Location of animals	Indexing: Cluster: Location_detail Date: 12/28/2021	
Queries	Code, size, capacity, Aid, animal_zone	
Commands	Add, View, Modify, Remove	
Constraint	<ul style="list-style-type: none">Once animal is allocated with specific location, it cannot be changed or deleteSimilar location for two animals is not allowed..	

Sponsors

Class	Sponsors	Part:1/1
Type of Object: Financial support for zoo	Indexing: Cluster: Sponsor_detial Date: 12/28/2021	
Queries		id, company_name, contact, Banner, website
Commands		Add, Remove, Add_banner, Check_funding, view_sponsors
Constraints		<ul style="list-style-type: none"> • Sponsors cannot retreat until their contract is complete. • One animal is sponsored by one company at a time • They should pay exact same amount when they sign contract

5. Report Conclusion

With all the documentation in mind we started our work with main focus on the interview findings as it was only the way for us to investigate problem domains and design constraints. (Took 1 week) (Present in 2nd block). Here, the challenging part was to prepare key questions to address all the important topics. After doing the interview session, we got a crystal clear image on requirement specification (took 1 week) (present in 3rd block) for all components. We have also prepared a comparable software system review and visitor questionnaire which gave us a lot of ideas about the problem domain.

And after doing certain analysis on functional requirements and design constraints we came up with some relevant system interface design for all components. We matched those system designs with functional requirements and selected the appropriate one (took 4 week) (present in 4th block). Our work for Interface design and system analysis and design for Record Management System was going on simultaneously which nearly took us a bit more time in this project.

Ultimately there was a report presentation, which showcased our work to the key Stakeholder (Matthew Jones) which made us more practical regarding our project with more understanding of presentation skills.

In drawing to close we started with a concise objective, we performed a special workshop for researching problem domain, we produced a proper requirement specification document which led us to beautiful and full functional software component system design with engaging client presentation, so our work is ready to start a software development leading with negligible no of errors.

In the final analysis, the CSY1019 module is better at focusing on topics like interview findings, requirement specification, system interface design, architecture analysis and effective presentation. Leading with interview finding which made us extract the required information and it also gives a better understanding of the problem domain. Also we were using flowchart to understand core key business operations and non-functional requirements. Wireframes, prototype and screen mockups in modules were the best part for us. And making a client engaging presentation is also a good skill which is available here at CSY1019.

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- Barun, B.2021. BON elements [Lecture Document]. CSY1019 Software Engineering. University of Northampton

7. Appendix

World of Alphabets - Work log

ID	Name	Section and Responsibility for the report
21422015	Sadikshya Baral	<p>2 Requirements Engineering</p>
21422064	Aayush Shrestha	<p>2.1 Elicitation Activities</p> <ul style="list-style-type: none"> 2.1.1 Interview plans
21422058	Sujan Nakarmi	<ul style="list-style-type: none"> 2.1.3 Other problem domain research 2.1.3.1 Comparable Software System Review 2.1.3.1.1 Records Management Systems 2.1.3.1.2 Zoo Websites 2.1.3.1.3 Visitor Kiosk/Information Systems 2.1.3.2 Development Relevant Legislation 2.1.3.3 Visitor Questionnaire (Optional) <p>2.2 Requirements Specification</p> <ul style="list-style-type: none"> 2.2.1 Problem Domain Description 2.2.1.1 Existing Business Operation 2.2.1.1.1 Animal Life-Cycle 2.2.1.1.2 Sponsorship Life-Cycle 2.2.1.2 Summary of existing business limitations

21422027 21422021	Nishita Thapa Sungava Subedi	<p>2.1.1 Interview Plans</p> <p>2.2.2 Functional Requirements</p> <ul style="list-style-type: none"> 2.2.2.1 Records Management System 2.2.2.2 Zoo Website 2.2.2.3 Visitor Kiosk Information System <p>2.2.3 Performance Requirements (Records Management System)</p> <ul style="list-style-type: none"> 2.2.3.1 Speed 2.2.3.2 Capacity 2.2.3.3 Reliability 2.2.3.4 Usability <p>2.2.4 Performance Requirements (Zoo Website)</p> <ul style="list-style-type: none"> 2.2.4.1 Speed 2.2.4.2 Capacity 2.2.4.3 Reliability 2.2.4.4 Usability <p>2.2.5 Performance Requirements (Visitor Information System)</p> <ul style="list-style-type: none"> 2.2.5.1 Speed 2.2.5.2 Capacity 2.2.5.3 Reliability 2.2.5.4 Usability <p>2.2.6 Design Constraints (All software components)</p> <p>2.2.7 Commercial Constraints (Total Project)</p>
21422060 21422014 21422037	Saurab Khadka Rohan Niraula Pragyan Kumar Chamlagain	<p>1. Introduction</p> <ul style="list-style-type: none"> 1.1 Project Background 1.2 Project Aims and Objectives 1.3 Project Development Methodology <p>2.1.1 Interview Plans</p> <p>2.1.2 Interview Findings</p> <p>3 System Interface Designs</p> <p>3.1 Draft Interface Designs for RMS, Zoo Website, Kiosk/Visitor Inf.</p> <ul style="list-style-type: none"> 3.1.1 Wireframes 3.1.2 System Navigation Diagram 3.1.3 System Screen mock-ups 3.1.4 System Activity Event Diagrams <p>3.2 Design Revisions</p> <p>5 Report Conclusion</p> <p>6 References</p> <p>7 Appendix</p>

21421997	Dipak K C	2.1.1 Interview Plans
21422051	Ritesh Koirala	4 Analysis and Design Records Management System – 4.1 Preliminary Analysis Stages 4.1.1. Textual Analysis 4.1.2. Significant Event Analysis 4.1.3. Class- Responsibility-Collaborator (CRC) 4.2. Detailed Static System Designs 4.2.1. First Draft BON System Architecture Diagram 4.2.2. BON System Chart 4.2.3. BON Cluster Charts 4.2.4. BON Class Charts

Video of Report Presentation

The report presentation video of the group is added to the Kaltura.

The link to that video is as follows,

https://northampton.mediaspace.kaltura.com/media/CSY1019_Software_Engineering_Worlds_of_Alphabets_Report_Presentation/1_bkuivaauo

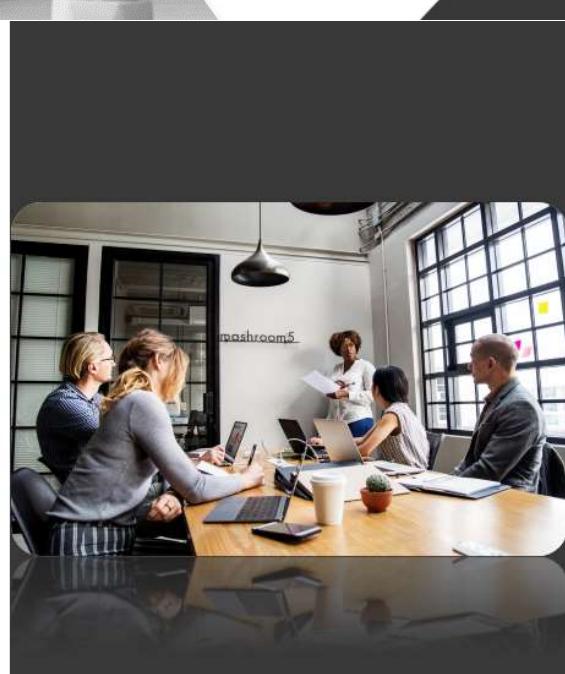
Presentation slides (Client presentation)





ELICITATION ACTIVITIES

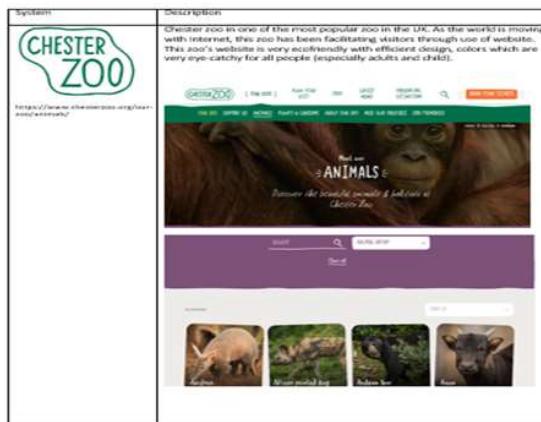
- Interview plans
 - Interview Findings
 - Other problem Domain Research
- i. Comparable Software System Review
ii. Development Relevant Legislation
iii. Visitor Questionnaire



SOFTWARE SYSTEM REVIEW

- Comparison & Review of Competitors
- Checking their system whether they can be of help
- Description of RMS, Website, Kiosk
- Advantages and Disadvantages

Record Management System



Website / Web Application

System	Description
 TIERGARTEN SCHÖNBRUNN https://www.zoovienna.at/ (Web Application)	<p>Schönbrunn Zoo is known as the most established zoo on the planet, and has now been named Europe's best zoo multiple times in succession. Part of an UNESCO World Cultural Heritage site with the majestic summer home of Schönbrunn Palace at its middle, it gives an extraordinary mix of culture and nature, while advancing protection and biodiversity. The zoo's exceptional allure comes from its supreme appeal.</p> 

Kiosk Interface:



- The first page of the kiosk has different selective languages for the use of visitors.
- The main menu contains four options one is Map, second is Show time, Entrance fee and info.
- The map provides you the direction to food place, souvenir shops, animals and facilities also some written information about those places including the places rate.
- The animal page contains image, video, sound and the data of the animal.
- Inside the menu, the show time will show you the time and dates of the events.
- The last option shows the price of the entrance fees for all kind of visitors.



DEVELOPMENT RELEVANT LEGISLATION

- Implementation of laws in new system.
- Securing privacy of data & information.
- Prevention of unlawful act.



VISITOR QUESTIONNAIRE

- Some questionnaire with visitor.
- Knowing the mindset of visitors.
- Reviewing expectations of visitor with zoo management.



REQUIREMENTS SPECIFICATION

Problem Domain Description

- Existing Business Operation
- Summary of existing business limitations

EXISTING BUSINESS OPERATION

Deals with current system of the zoo.

Animal Life Cycle

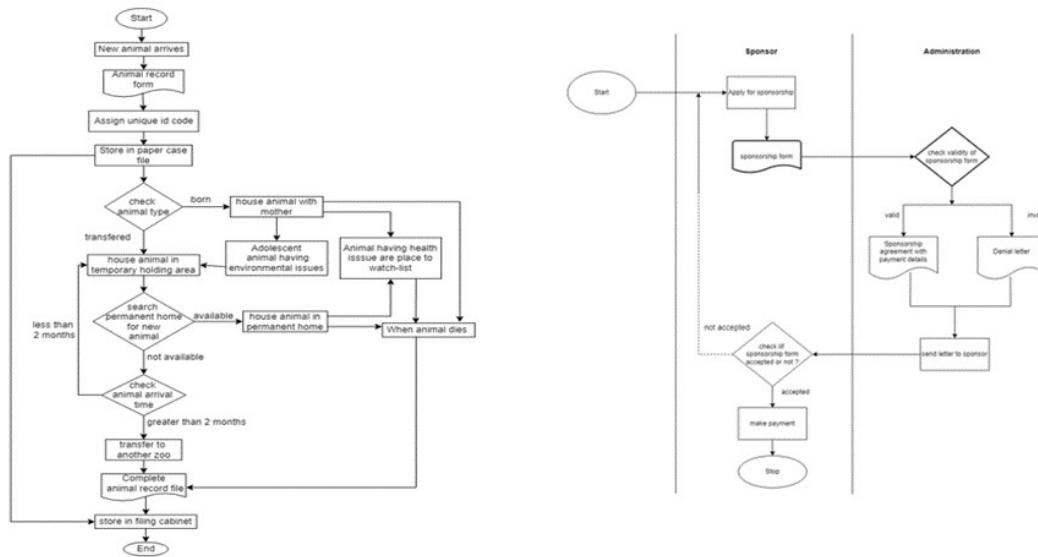


- Paper based system to record animal's details.
- Different storage location for different animals.
- Animal records completes when animal leaves zoo or dies.

Sponsor Life Cycle



- Identifies good sponsorship that fits to sponsors.
- Sponsorship form for recording details.
- Explains components of sponsorship agreement.



SUMMARY OF EXISTING BUSINESS LIMITATIONS (PROBLEMS TO BE RESOLVED)

- Lack of storage space
- Security issue
- Prone to damage
- Transportation of documents
- Editing of document
- Environmental damage
- High cost
- Limited communication & collaboration



02

POTENTIAL BENEFITS

Advantages of the
Proposed Solution



RECORD MANAGEMENT SYSTEM

- Convenient and secure storage of records.
- Loss of data avoided by use of backup systems.
- More works with less effort.
- Efficient management of stored data



VISITOR KIOSK SYSTEM



- Information and animals and locations
- Videos and music
- Helpful Navigation
- Events and News Brochure
- Quiz Games

PERFORMANCE REQUIREMENTS

- Speed
- Capacity
- Usability
- Reliability



COMMERCIAL CONSTRAINT

Commercial Constraints:

Assignment Information:

Total length of Project: 1 month

Hourly Cost: \$10 per person

Number of group members: 10 members

SECTION	WEEKS	HOURS WEEK PER PERSON	TOTAL COST
Requirements Specification	1	5	\$2,000
Design and Analysis	1	5	\$1,500
System Interface Designs	half	6	\$1,000
Requirement Engineering	half	6	\$2,500
Problem Domain	half	4	\$3,000

REASON	COST
Software	\$5,000
Office cost	\$4,000
Total build cost	\$40,000
Other expenses (20%)	\$4000
Profit margin (30%)	\$5,000
Total project cost	\$50,000

03 SYSTEM INTERFACE DESIGNS

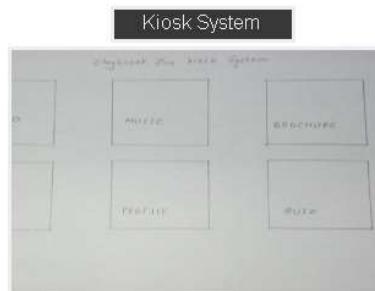
Design and Looks of
the Software

WIREFRAMES

- A first draft interface design technique.
- A simple sketch of how the layout of each system-screen.
- Proposed behaviour, structure, and navigation are all captured.
- Wireframing documents are kept as an appendix within the report.



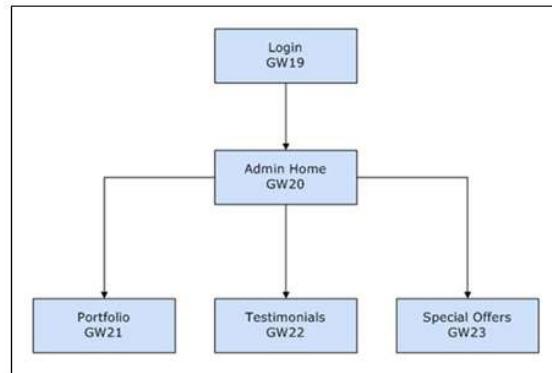
WIREFRAMES



SYSTEM NAVIGATION DIAGRAM

- Aims to provide an overview of all system screens.
- Illustrates all navigation pathways throughout the system.

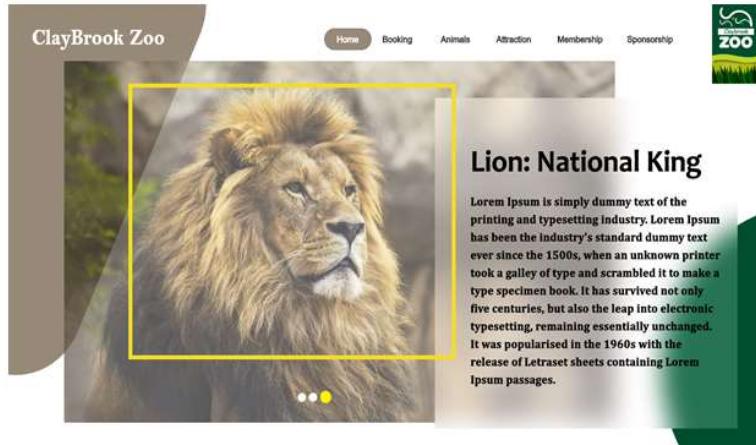
SYSTEM NAVIGATION DIAGRAM



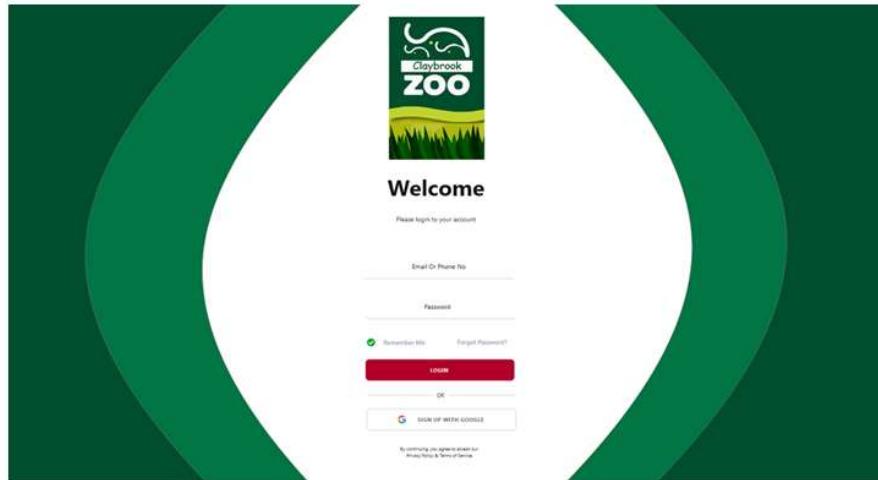
SYSTEM SCREEN MOCK-UPS

- Skin of the final product.
- Consists of combination of colours and shapes
- Provides overall feeling of the future software
- Product design and user experience

ZOO WEBSITE



RECORD MANAGEMENT SYSTEM



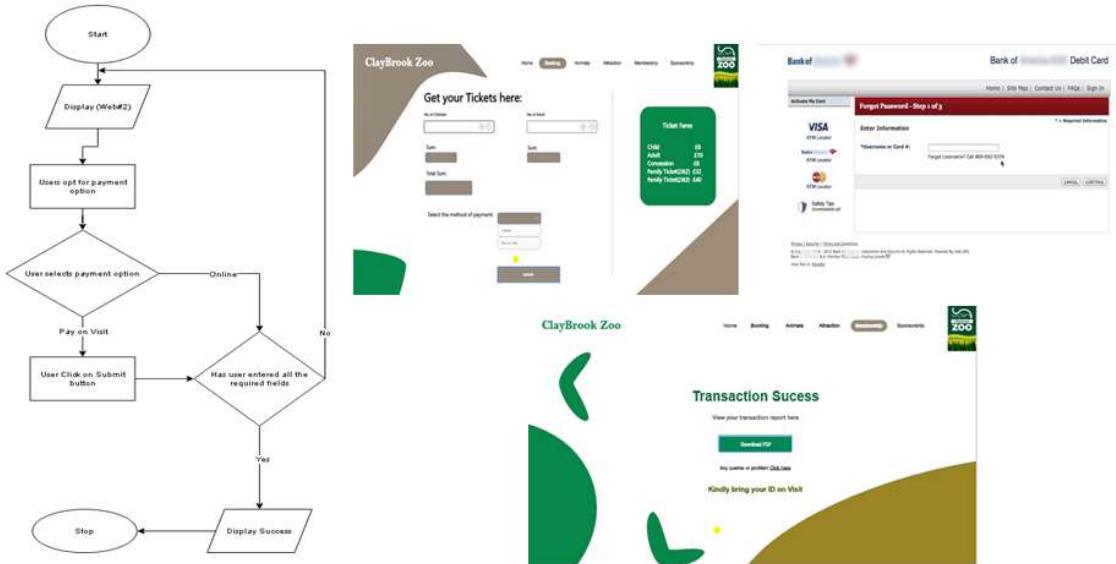
KIOSK SYSTEM



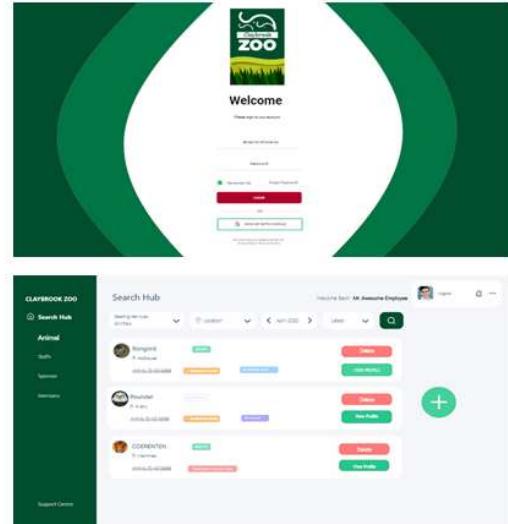
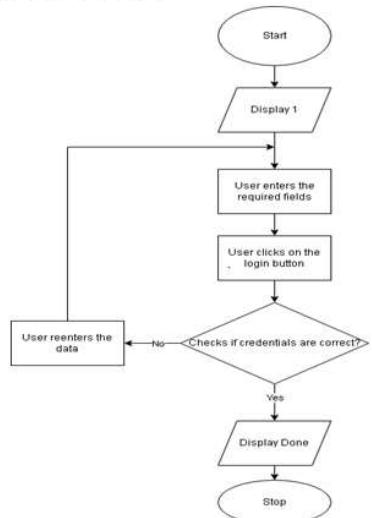
SYSTEM ACTIVITY EVENT DIAGRAM

- ❑ Demonstrates navigation pathways for key user activities
- ❑ Comprised of two components:
 - Flowchart showing the sequence of screen navigation
 - Corresponding screen display diagram

ONLINE TICKETING



LOGGING INTO THE SYSTEM



CONCLUSION

Development Recommendations

- Audio detailing of animal for blind people.
- Voice search engine in website.
- Use of Virtual Reality in the Kiosk System
- Estimated cost 500,000 dollar.

OUR TEAM

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THANKS

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Apologies for any inconvenience.

