Project Proposal

On

Online Pet Adoption System

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Chapter 1: Introduction

1.1 : Project Introduction

According to a survey carried out by the Humane Society International (HSI), an organization working on animal protection issues around the world, the population of stray dogs in Kathmandu valley alone is approximately 25,000. It has occurred because of various reasons and one of them is pet abandonement. There are many causes for a pet to become abandoned, usually through no fault of their own. Many owners will give up their pets after realizing they can't afford to keep them, they no longer want them, or sometimes they just leave them behind while moving to a new place.

On the other hand, a lot of willing people cannot find a proper way to help them and some even cannot afford a pet even if they want to. A proper solution to mitigate all these problems is to adopt these pets. But, it is difficult to find a proper platform and a number of options to select the best pet to adopt.

Hence, I propose to develop a website that can help the pets and the people which might grant several animal lives a proper home, care and love. It will make it easier for the guardians who are willing to let their pets for adoption and the adoptees who want to adopt these pets by giving them a platform to meet. It will even enable the adoptees to choose a pet based on their preferences on breed, age, gender, and other characteristics.

1.2 : Justification for the project

i. 1.2.1 : Background of the project

Nowadays, people are encouraged to adopt pets rather that buying one from the market where the maximum possible pets are bred just to sell and earn profit. This practice will never assist in making the lives of the strays better.

ii. 1.2.2 : Problem Statement

Adoptme.com will become an small effort to help these pets find a new home and the people willing to adopt one. Since there are no other websites in Nepal that provide these functions and facilities, adoptme.com will be the first search site in Nepal to offer real-time updates of adoptable pets.

1.3 : Description of the project

Nowadays, almost all the people browse the internet. For this reason, the project will be designed to be used via the internet regardless what operating system or devices people use. Likewise, the project will be developed using HTML, CSS, Javascript, SQL and PHP with Laravel Framework. Adoptme will be multiple user-based system who are basically categorized into two parties, the ones who register their pets for adoption, known as guardians and the ones who can adopt those listed pets, known as adoptors. A database will also be needed to support the website.

iii. 1.3.1 : Features

The key features will be:

a. User registration and login system for adopters and guardians
b. Guardians can list their pets for others to adopt, along with different characteristics and image upload system
c. Chat system for the adopters and guardians to chat
d. Advanced search system using different categories to find the desired type of pet
e. Blog
f. List of successfuly adopted pets
g. Responsive website capable of running smoothly on all the devices.
h. User centered design
i. Other website essential pages providing information in the best way possible

1.4 : Overview of project

Adoptme.com will act as an intermediary between the guardians and adopters which will emphasize in the act of pet adoption. However, the key aim of the project is the well-being of the pets and ease government in the management and reduction of stray pets.

Chapter 2: Scope of the project

2.1 : Scope

This major scope of the website is to deal with the adoption of pets by making it easier for people to adopt and let adopt with a user-friendly system.

2.2 : Limitations

a. It will be limited to only 2 pet categories, dogs and cats.
b. The messaging system will not be instant, i.e. the user must reload the page in order to get notification of message received.
c. Not all of the contents in the website will be dynamic.

2.3 : Aims

a. To prevent pets from being strays or getting love and care.
b. To help willing people find the perfect pet according to their preferences.
c. Develop a user-centered website implementing a good use of UI/UX design with responsive features.

2.4 : Objectives

1. Allow guardians to list their pets for adoptions.
2. Allow guardians to provide additional details of the pets such as age, gender, breed, etc along with photos.
3. Help adopters to find the most suitable pet based on their preferences.
4. Allow message service between adopters and guardians in case of further information.
5. Display successful adoption stories to other users.
6. Provide information about pet care to users.

2.5 : Overview of the scope

The key objective of the project is to help improving the life of animals by making a platform for their adoption. It will provide real time updates on the list of pets available for adoption. In addition, there will no boundaries for the users to access the website from any devices. Besides that, it will also provide users information about how to take care of pets with the best possible designs.

Chapter 3 : Development methodology

3.1 : Description of the methodology

A software development methodology in software development is a framework that is used to structure, plan, and control the process of developing an information system **(Itinfo.am, 2019).**

Among all the available methodologies, I think Waterfall model is the most suitable methodology for my project. Hence I will use Waterfall model.

The **Waterfall Model** is a linear application development model that uses rigid phases; when one phase ends, the next begins. Steps occur in sequence, and the unmodified waterfall model does not allow developers to go back to previous steps **(Sciencedirect.com, 2019).**

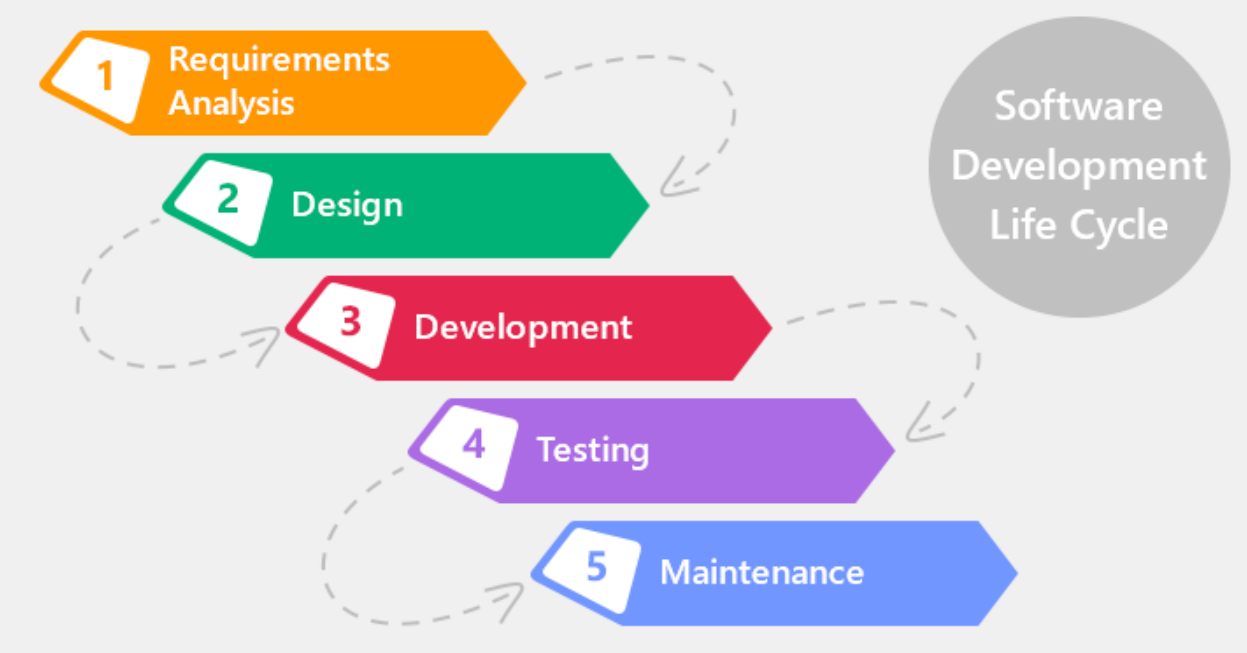

Figure 1: Waterfall Model

a. **Requirements:** In this phase, the requirement analysis is performed. It helps to list out all the tasks and functions that the system must be able to perform.

b. **Design:** After the requirements are found out, design is processed on the basis of the requirements identified. In this phase, all the strategic plans are made.

c. **Development:** Once the design is completed, it is developed by turning it into a real world system with the help of models and logic.

d. **Testing:** This phase is to test the quality and assurance of the system. The system is tested using various methods such as unit testing and black box testing.

e. **Maintenance :** After the system is deployed, the process of maintenance is performed in order to assure it's long run.

Advantages

1. Waterfall model is very simple and easy to use, regardless to the level of expertise.
2. It ensures that each phase is completed successfully to move to the next phase.
3. Since the phases cannot be repeated, it emphasizes utmost attention on the completion of each phase.
4. It is very efficient and suitable for small projects having direct and non-ambiguous requirements.

Disadvantages

1. It is not possible to go back to the previous phase to make changes.
2. It cannot be used in the projects in which the requirements change frequently.
3. It is not suitable for large projects.

3.2 : Design Pattern

Design pattern is a technique to give an structure to the code or the project in order to provide solutions to recurring design problems. It supplements the development process by mitigating the risk of recurring problems. In order to utilize these benefits, I will use the pattern known as MVC (Model View Controller) for my project.

MVC is one of the most used design pattern. It makes the development process faster by enabling the front-end and back-end developers to work on the same system wihtout interfering the other. It is separated into three key parts. They are:

Model : It contains business logics.

View : It represents the User Interface of the system.

Controller : It works as a communication mechanism between Model and View.

3.3 : Architecture

Analyzing the available architectures, I have chosen three-tier architecture pattern. A three-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms **(Techopedia.com, 2019)**.

The three tiers are:

1. **Presentation Tier :** It holds the top level of the architecture and displays information and contents related to the services that the website provides.
2. **Application Tier :** Also known as the logic layer, it controls application functionality by executing detailed processing.
3. **Data Tier :** It contains database servers where information is stored and retrieved. All the data in this tier is kept independent of application servers or business logic.

Advantages :

a. It enables the users to update an individual tier without affecting the others.
b. It allows the developers to scale up by adding multiple web servers.
c. It adds reliablility and independency to the servers or services.
d. It enables ease of maintenance.

Chapter 4 : Project Planning

4.1 : Work Breakdown Structure

Work Breakdown Structure (WBS) is a diagram that represents the tasks that are to be completed in order to develop the system. It shows hierarchial sub-division of the project. The figure shown below illustrates the WBS for my project :

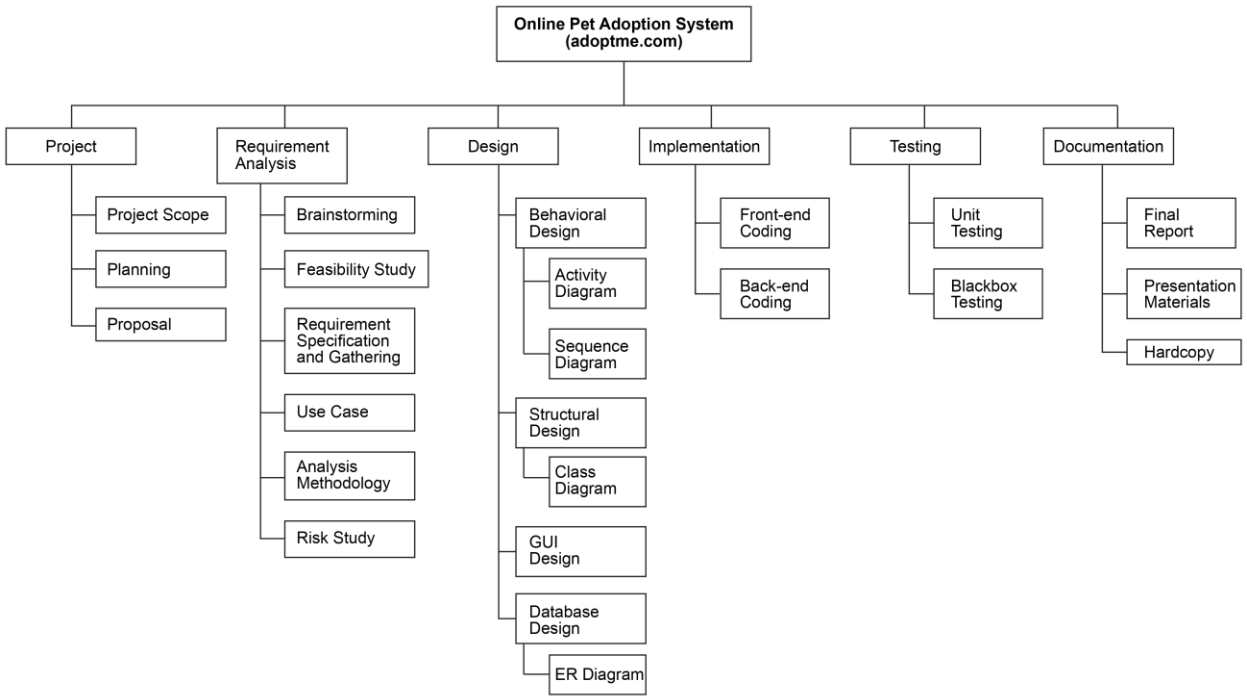

Figure 2: Work Breakdown Structure

4.2 : Milestone

The milestones with start date and deadline of each tasks are given below:

Topic	Start Date	Deadline
Proposal	26th March 2019	9th April 2019
Analysis	10th April 2019	8th May 2019
Design	9th May 2019	3rd June 2019
Implementation (Coding)	4th June 2019	24th June 2019
Testing	25th June 2019	1st July 2019
Final Doc	2nd July 2019	12th July 2019
Task number	Task Description	Deadline

4.3 : Gantt Chart

A Gantt chart is extensively used in project management, is one of the most popular and beneficial ways of showing tasks or events against time. Each activity is shown by a bar; the position and length of the bar represents the start date, duration and deadline of the activity.

	Name	Duration	Start	Finish	Predecessors
1	**Project**	15 days	**3/26/19 8:00 AM**	**4/9/19 5:00 PM**	
2	Project Scope	4 days	3/26/19 8:00 AM	3/29/19 5:00 PM	
3	Planning	3 days	3/30/19 8:00 AM	4/1/19 5:00 PM	2
4	Proposal	8 days	4/2/19 8:00 AM	4/9/19 5:00 PM	3
5	**Requirement Analysis**	29 days	**4/10/19 8:00 AM**	**5/8/19 5:00 PM**	**4**
6	Brainstorming	8 days	4/10/19 8:00 AM	4/17/19 5:00 PM	
7	Feasibility Study	5 days	4/18/19 8:00 AM	4/22/19 5:00 PM	6
8	Requirement Specification	4 days	4/23/19 8:00 AM	4/26/19 5:00 PM	7
9	Use Case	3 days	4/27/19 8:00 AM	4/29/19 5:00 PM	8
10	Analysis Methodology	5 days	4/30/19 8:00 AM	5/4/19 5:00 PM	9
11	Risk Study	4 days	5/5/19 8:00 AM	5/8/19 5:00 PM	10
12	**Design**	26 days	**5/9/19 8:00 AM**	**6/3/19 5:00 PM**	**11**
13	Dynamic Modelling	6 days	5/9/19 8:00 AM	5/14/19 5:00 PM	
14	Static Modelling	6 days	5/15/19 8:00 AM	5/20/19 5:00 PM	13
15	UI Design	12 days	5/21/19 8:00 AM	6/1/19 5:00 PM	14
16	Database Design	2 days	6/2/19 8:00 AM	6/3/19 5:00 PM	
17	**Implementation**	21 days	**6/4/19 8:00 AM**	**6/24/19 5:00 PM**	**15**
18	Front-end Coding	10 days	6/4/19 8:00 AM	6/13/19 5:00 PM	
19	Back-end Coding	11 days	6/14/19 8:00 AM	6/24/19 5:00 PM	18
20	**Testing**	7 days	**6/25/19 8:00 AM**	**7/1/19 5:00 PM**	
21	Unit Testing	3 days	6/25/19 8:00 AM	6/27/19 5:00 PM	
22	Blackbox Testing	3 days	6/29/19 8:00 AM	7/1/19 5:00 PM	21
23	**Documentation**	11 days	**7/2/19 8:00 AM**	**7/12/19 5:00 PM**	**22**
24	Final Report	5 days	7/2/19 8:00 AM	7/6/19 5:00 PM	
25	Presentation Materials	4 days	7/7/19 8:00 AM	7/10/19 5:00 PM	24
26	Hardcopy of Final Report	2 days	7/11/19 8:00 AM	7/12/19 5:00 PM	25

Figure 3: Project Schedule

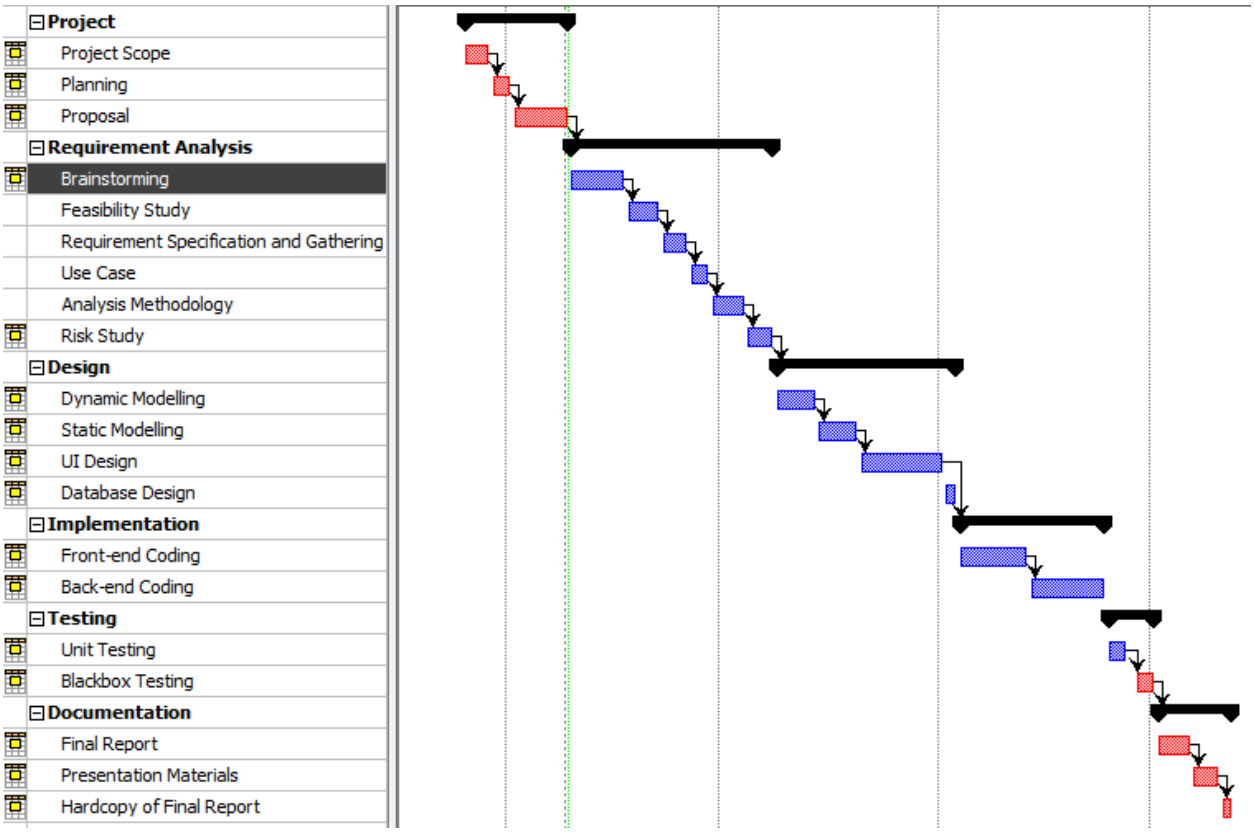

Figure 4: Gantt Chart

Chapter 5 : Risk Management

Every project consists of potential risks and the process of identifying, analyzing and responding it accordingly is known as risk management. It helps us to identify the risk beforehand and avoid potential impacts on cost, time and performance. Risk management helps us to address all the potential risks that might affect our system in any possible way. For this, we use likelihood and consequences of the risks to calculate the level impact it can cause in our system and respond accordingly.

The tables look like this:

i. Likelihood table

Likelihood	**Value**
Low	1
Meduim	2
High	3

ii. Consequence table

Consequence	**Value**
Very Low	1
Low	2
Medium	3
High	4
Very High	5

With the help of these tables, we will be able to calculate the impact by multiplying the value of the likelihood and consequence.

Impact = Likelihood * Consequence

Risk Assessment

S.N.	Risks	Likelihood	Consequences	Impact	Action
1.	Ambiguous Requirements	2	4	8	Perform requirement analysis until it is clarified
2.	Server Failure	2	5	10	Implement backup servers and cloud storage
3.	Environmental Risks	1	4	4	Implement proper backup system
4.	Bugs	1	3	3	Complete testing thoroughly
5.	Inaccurate cost or time estimation	2	3	6	Proper planning from the start
6.	Difficulty for users to use the system	2	4	8	Implement simple and effective UI and UX design
7.	Virus/Malwares/Spywares	2	4	8	Use antivirus, anti-malwares and spywares.

5.2 Configuration Management

Configuration Management is the process of systematically handling changes to a system in a way that it maintains integrity over time **(Heidi, 2016)**. It includes source code, hardware and software data, third-party software and documentations. They are well managed during the whole project/system's lifecycle.

In order to implement configuration management, I have created folders and stored them in a systematic way along with proper backup system with the help of Github, which is a form of cloud storage. The backup process will be performed in short periods like 2 to 3 days or after some important task has been completed. It will ensure data recovery in case of any accident causing data loss.

Tree structure (Hierarchical) of my project Adoptme.com :

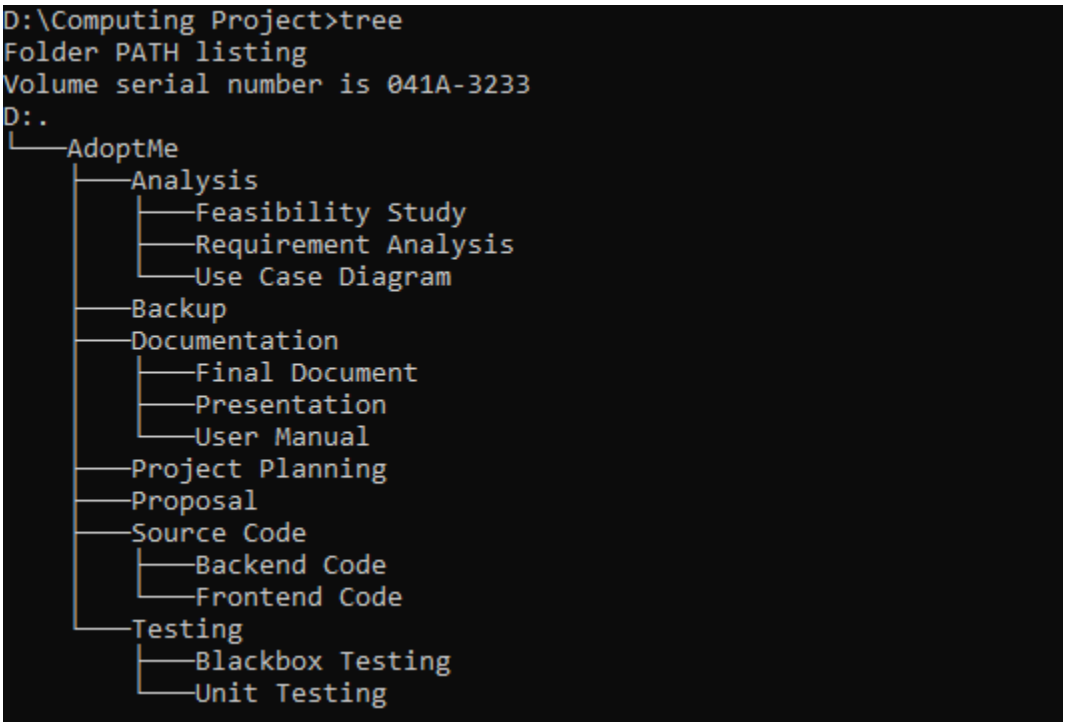

Figure 5: Hierarchical structure for project

Chapter 7 : Conclusion

In conclusion, I will complete the project withing the time frame without leaving any features and tasks incomplete. The website will be successfully completed using a waterfall model since it will be the best option regarding the magnitude of my project. The main objective of the website will be to make a platform for the adoption of pets which will eventually make their lives better. It will not only help those pets and the people, but also the government by helping them to manage or minimize the strays to a particular extent. It will be the first website in Nepal with this amount of features and options. Lastly, the website will be user-centric with easy-to-use user interface and user experience.

Chapter 8 : References & Bibliography

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