HI-BREED: A MOBILE APPLICATION FOR PET OWNERS.

A Capstone Research Proposal

Presented to the Faculty of the

College of Computer Studies, University of Cebu-Banilad

In Partial Fulfillment of the Requirements

For the Degree of the Bachelor of Science in Information Technology

By:

Dionico Noe Alegarbes

Kemberly Nicole Tayong

Kenneth Dela Cruz

Engr. Edsel Paray

Adviser

December 2022

**ABSTRACT**

The researchers analyze societal problems in this study and provide an innovative solution. This study focuses on the challenge of a pet owner finding a suitable pair for their pet around him/her and finding a breeder or shooter that sells or offers the pet owner’s desired product or services. This project will include a knowledge component that will improve pet owner’s experiences in finding a perfect mate and for their pet care inquiries. Our team conducted a survey to collect data that will assist us in determining which features and functionality we should add to the application. The survey results show that many pet owners still have difficulty finding a suitable mate for their pets and/or the perfect pet for them, causing them to keep searching randomly on different websites and wasting time. With this project, pet owners will be able to easily find or acquire the pets or services they are looking for. This implies that Hi-Breed is a great tool for providing pet owners with the necessities they need and recommending pets and services that they are seeking, allowing pet breeders, shooters, and veterinarians to simultaneously market and advertise the products or services that they offer.

**ACKNOWLEDGEMENT**

This study would not have been successful without the help and support of the following persons who become our inspiration in writing this thesis. It is our greatest pleasure that we may be able to extend our heartfelt thanks to the following:

**Mrs. Moma D. Ortega**, our Dean of the College of Computer Studies, for giving us the opportunity to extend our knowledge, ability and skills for this study.

**Ms. Marijoy Yaun**, our Capstone Subject Adviser, for her support and words of encouragement and also for giving a long period of time to depend on this manuscript.

**Engr. Edsel Paray**, our Capstone Adviser, for the support, guidance, pieces of advice, valuable comments, suggestions, and provision that benefited us much in the completion and success of this study.

**Ms. Miriam Flores**, our Grammarian, for her time and effort in checking this manuscript, and giving us enough time to make this manuscript.

**To the person with whom we conducted the interview and gathered data,** for cooperating and helping us to connect the pieces of information.

**To our parents, guardians, and friends**, for sharing their support, either morally, financially or physically, thank you.

Above all, **to the Great Almighty**, the author of knowledge and wisdom, for his countless love. We thank you.

**DEDICATION**

This study is wholeheartedly dedicated to our beloved parents, who have been our source of inspiration and gave us strength when we thought of giving up and who continually provide their moral, spiritual, emotional, and financial support.

To our brother, sister, relatives, mentor, friends, and classmates who gave us words of wisdom and encouragement to finish our studies.

Finally, we dedicated our project to God Almighty. Thank you for your guidance, strength, protection, and skills, as well as for providing us with a healthy life. We offer all of this to you.

**TABLE OF CONTENTS**

Page No.

Title Page

Abstract

Acknowledgment

Dedication

Table of Contents

List of Table and Figures

**CHAPTER I: INTRODUCTION**

Rationale of the Study

Objectives of the Study

Scope and Limitations of the Study

Significance of the Study

Flow of the Study

Definition of Terms

**CHAPTER II: REVIEW OF RELATED LITERATURES AND STUDIES**

Theoretical Background

Related Literature

Review of Related Studies

Comparative Matrix

**CHAPTER III: RESEARCH METHODOLOGY**

Research Environment

Software Engineering Methodology

Planning/Conception-Initiation Phase

Business Model Canvas

Program Workflow

Validation Board

Gantt Chart

Functional Decomposition Diagram

Analysis-Design Phase

Use Case Diagram

User Interface Design

Storyboard

Database Design

Entity Relationship Diagram

Data Dictionary

Network Topology

Development/Construction/Build Phase

Technology Stack Diagram

Software Specification

Hardware Specification

Program Specification

List of Modules

**REFERENCES**

**APPENDICES**

A – Transmittal Letter

B – Censor’s Certificate

C – Research Instrument (Survey Questionnaire)

D – Results and Findings

**TEAM COMPOSITION**

**LIST OF TABLES AND FIGURES**

**List of Tables**

**Table Description Page No.**

1. Comparative Matrix
2. Business Model Canvas
3. Validation Board
4. Gantt Chart
5. Data Dictionary - OWNER COLLECTION TABLE
6. Data Dictionary - OWNER SECURITY COLLECTION TABLE`
7. Data Dictionary - OWNER VALIDATION COLLECTION TABLE
8. Data Dictionary - OWNER CARD COLLECTION TABLE
9. Data Dictionary - PET DATA COLLECTION TABLE
10. Data Dictionary - BREEDER COLLECTION TABLE
11. Data Dictionary - BREEDER SECURITY COLLECTION TABLE
12. Data Dictionary - BREEDER VALIDATION COLLECTION TABLE
13. Data Dictionary - PET SALE COLLECTION TABLE
14. Data Dictionary - SHOOTER COLLECTION TABLE
15. Data Dictionary - SHOOTER SECURITY COLLECTION TABLE
16. Data Dictionary - SHOOTER VALIDATION COLLECTION TABLE
17. Data Dictionary - SERVICE COLLECTION TABLE
18. Data Dictionary - VET COLLECTION TABLE
19. Data Dictionary - VET SECURITY COLLECTION TABLE
20. Data Dictionary - VET VALIDATION COLLECTION TABLE
21. Data Dictionary - PRODUCT COLLECTION TABLE
22. Data Dictionary - ADMIN COLLECTION TABLE
23. Data Dictionary - TRANSACTION COLLECTION TABLE
24. Data Dictionary - ORDER COLLECTION TABLE
25. Data Dictionary - OFFICIAL RECEIPT COLLECTION TABLE

**26** Technology Stack Diagram

**27** List of Modules

**List of Figures Figure**

1. Flow of the Study
2. Agile Methodology
3. Pet Owner Workflow
4. Pet Breeder/Shooter Workflow
5. Veterinarian Workflow
6. Admin Workflow
7. Functional Decomposition Diagram
8. Use Case Diagram
9. Welcome Page
10. Login Page
11. Sign up Page
12. Dashboard/Homepage Page
13. Marketplace Page
14. Profile Page
15. Add Payment Method Page
16. Product/Service Page
17. Filter Page
18. Ask a Professional Page
19. Date Finder Page
20. Add Pet Page
21. My Shop Page
22. Listing Page
23. Add Pet/Product/Service Page
24. Update Pet/Product/Service Page
25. Admin Login Page
26. Activity Page
27. User Page
28. Transaction Page
29. Questions Page
30. System Page
31. Pet Owner’s Storyboard
32. Pet Breeder/Shooter/Veterinarian’s Storyboard
33. Hi-Breed Database Design
34. Entity Relationship Diagram
35. Network Model
36. Network Topology

**CHAPTER I**

**INTRODUCTION**

Animals play an essential role in the world, whether in scientific advancements, environmental sustainability, or industrial production, such as food, medicine, or entertainment. Pets provide companionship and emotional support, lowering stress levels and feelings of isolation. Pet owners keep animals for companionship and joy, as the human-animal bond has been scientifically explored (NIFA, 2008). In accordance with NIFA, Lundgren et al. (2021) further report that pets can improve a person's mental health and bring positive changes to their lifestyle. American Kennel Club (2016) stated that the customary owning of pets had sprung pet breeding. People desperately search for puppies, and a shortage occurs in breeds. According to FOUR PAWS International, they have been investigating the illegal puppy trade for many years. They have gathered extensive evidence that breeders use animals for profit and disregard the health and welfare of dogs. The Illegal puppy trade is profitable, especially when little care is given to the dogs involved. Veterinary care is lacking, the breeding animals are disposed of when they cannot produce puppies anymore, and the puppies themselves are taken from their mother too young and without consideration for their needs. Many of the puppies bred for the trade belong to the most popular breeds, as they can be sold best for profit (Mba, 2020). Meanwhile, breeders rely on online media to search and screen for customers, such as sales platforms, classified ad services, Facebook Groups, and even their kennel websites.

On the other hand, the usage of e-commerce has been rapidly growing. E-commerce or Electronic Commerce means acquiring or selling goods or services over the internet. It has evolved to make products/services more straightforward to find and purchase through different online platforms (Shopify, 2020). It includes using various data, systems, and resources for online buyers and sellers, from mobile shopping to encryption of online payments and more (Ecommerce Guide, 2020). In order to perform both online marketing and sales activities, most organizations with ecommerce attributes use an e-commerce store or an e-commerce platform. The platform would serve as a medium for both seller and customer, providing a more comprehensive community for business opportunities or inquiries. Bigcommerce (2021) reported that an estimated 1.8 billion people worldwide made online purchases in 2018. Bloomenthal (2021) claims that e-commerce can be conducted over computers, tablets, or smartphones, unlike traditional commercial transactions. This method creates a presence that pet breeders can utilize to provide an affordable and efficient distribution platform for their for-sale pets or services. This particular advancement in the commercial industry is considered a disruptive technology. Integrating e-commerce and animal breeding and welfare opens new opportunities for animal breeders to widen business opportunities and buyers interested in purchasing pets or livestock for personal or business development. Determining the pros and cons that come with the integration of both information and using it to address the problems that may come.

**Rationale of the Study**

An estimated four out of ten children are born into a family with domestic animals; 90 percent of all children live with a pet at some point during childhood. (Melson, 2011). It can undoubtedly demonstrate the impact of having pets around children and their families in general and how large and small creatures teach, thrill, and offer people a particular type of companionship. Strickland (2021) added that pets could help alleviate stress, encourage learning and nurturing, enhance heart health, and even assist children in developing their emotional and social abilities.

Many owners find the companionship of their dog so rewarding that they want to breed their dog, continue the bloodline, or keep a puppy. However, there are many things to consider before taking the necessary steps to enter into dog breeding. After all, dog breeding requires professionalism, responsibility, and commitment. Purebred Breeding Critical Information (2015) states that puppy breeding can be rather complicated, particularly when the pet owner has no idea what he/she has been doing. Specific breeders can make a spare time activity of breeding dogs; nevertheless, the specialists have research behind it and learn precisely what they truly are performing. McMillan (2017) stated that increased fear in a dog was also identified in response to unfamiliar people, children, other dogs, and non-stimuli. Undesirable behaviors related to separation, attention-seeking, and a heightened sensitivity to touch have been reported because of how dogs are born in commercial breeding establishments. Accordingly, for any dog breeding operation, a standard of care that adequately redresses the welfare of the mother and puppy and the risk of later behavior problems attendant with early stress and distress needs to be formulated and followed in a manner supported by the emerging data. Additionally, If the pet owner decides to buy a dog breed, it is better to buy from professional breeders. Though looking at a dog is excellent, the pet owner may need a specific type of dog.

According to Breeding Business (2020), finding the perfect breeding partner for the owner’s pet can be difficult, they may require one who is located near them, has a certain color, has clear health, and an owner with proper ethics which is important to be fulfilled. In addition to that, Cosgrove (2023) stated that the Philippines has had a significant increase in pet interest, especially during the pandemic. According to the FCI, they had 20,329 registered members in 2020, which was up from 19,455 in 2019. In 2021, the number rose significantly to 27,415 registered members. The group estimates that there were 11.6 million dog owners in 2020, including owners of purebred and mixed-breed dogs. As reported by Chaudhari et al., 2021, 1.8% of the survey that is conducted in Quezon City shows that 1.8% said that pet owners owned dogs to breed.

Therefore, the proponents introduced the "Hi-Breed" application for connecting pet owners, breeders, and shooters to aid the problems regarding pet services. This application aims to develop a safe and secure system that will stand as a dating online platform for pet owners to find suitable mates for their pets.

It will also let the users filter out their ideal pet’s mate’s physical appearance and locate any available shooter within the premises where they can assist the pet owner’s inquiries and transactions. Additionally, the application will provide a list of the basic needs of the pets during the breeding process.

Furthermore, the application may not only benefit the pet owners but also breeders/shooters because they can advertise their products and services to boost their business in the future. Keeping track of appointments is essential but quickly overwhelming in a real-life scenario. Initial deployment of the platform gives Filipinos a set of advantages, including ease of access, a user-friendly interface, and at the same time, a quick transaction with security-enabled features to ensure the safety of the respected stakeholders as they were about to test and use the application itself. The main idea of this study is to escalate the traditional practice of pet breeding into a more technical approach, using smartphones or any mobile device as your tool, the users will feel much more convenient and secure to ensure that their pets will have their proper and safe pet breeding without any hassle. That is where the Hi-Breed application can be advantageous.

**Objectives of the Study**

This study aims to develop a mobile pet dating application for pet owners. In order to achieve this aim, the specific objectives are:

1. gather data on the problems encountered by pet owners for pet breeding and shooting;
2. identify the mechanism for verification and validation of pet owners;
3. define an algorithm for pet-dating and recommendation services; and
4. determine the notification scheme for the system.

**Scope and Limitations**

This study implementation will only be on mobile devices that can connect to the internet because the application will not work as expected if it is not online. The proponents can only implement the web for admin access and as a medium for feedback and reviews of the users.

The platform only includes the following features: swiping of pets profile, communication between pet owners and breeders, transactions, tracking of orders, list of liked pet profiles, pets and services offered, and activity status.

Upon registration, the platform will require pet breeders/shooters to submit legal records, such as waivers for the validity of services and products and years of experience.

The platform will not offer courier services. Products or services purchased by the customers must be processed externally by the pet breeder. The pet owners can also request for cancellation of scheduled purchased service under the management terms and conditions.

In the pet breeder's profile, activity status is limited only to show the total number of sold pets or services, schedules, and the user's reviews.

This study is limited to pet breeders in the Philippines only. This is intended to help Filipinos find a suitable mate and a trusted breeder who can provide health and welfare for their pets.

For the mobile specifications, the mobile application will only run on android devices with an operating system with a minimum of version 5.0, which is Lollipop and up to the latest version. The mobile application will only run-on Android mobile operating systems.

**Significance of the Study**

**Pet Owners.** The pet owners will be the ones who will stand to benefit the most from this study. They will have the option to search for the product/services that they need to acquire easily on the grounds that they do not have to go to various pet breeders/veterinarians shops any longer to search for a specific product.

**Pet breeders.** The pet breeders will stand to benefit from this study. Their products and services will have a place to advertise and to be seen more frequently by online customers since it will be included in the application in the event that they sell the product that the pet owners is looking for.

**Pet Shooters.** The pet shooters will stand to benefit from this study. Their services will have a place to advertise and to be seen more frequently by online customers since it will be included in the application in the event that they sell the service that the customers is looking for.

**Veterinarians.** The veterinarians will stand to benefit from this study. They will be able to show their products more efficiently and their products and services will be recommended to the customers if they have a higher customer approval rating.

**Researchers.** The researchers will stand to benefit from this study. The researchers will be able to user the gathered data from different e-commerce platform so as to create an application that will enable pet owners to purchase/inquire products and services online effortlessly and enables pet breeders/veterinarians to have a place where they can showcase their available pets, products and services to the users.

**Future Researchers.** The research will stand to benefit from this study. They will be able to use this research as a reference for their future research studies.