

PawBreedster: A Website Application for Dog Owners and Enthusiasts

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This study aims to help dog owners and dog lovers to connect and to communicate with dog experts who can share their knowledge on how to properly take care of dogs. It also builds relationships with people who share similar lifestyle and interest through an interactive website application. The need for such application is based on the need to address some possible problems that dog owners encounter especially in finding a match breed for their dogs as well as in choosing an affordable and a reliable way of breeding dogs. The system is an accessible web-based application that supports dog owners and dog lovers in their lifestyle interest. In order to fulfill the project, the proponents used Agile Methodology for the development of the system, which included interactive and incremental development and solutions. The system was developed and designed using MySQL Server, XAMPP, Adobe Photoshop, CodeIgniter, HTML, CSS, PHP, MYSQL, JavaScript, Sublime Text, and Bootstrap. It was also tested using the Windows 10 operating system. The application was evaluated in terms of functionality, efficiency, compatibility, usability, reliability, security, maintainability, and portability by 50 users including three IT experts.

Keywords: dog, dog owner, social app, stud, dog breeding

Introduction

The rapid change of technology has carried out a shared economy which allowed people to connect with family and friends and to associate with strangers. Furthermore, this also permitted people to exchange goods and services with one another in an easy and fast way. This blend of technology and users has changed the outlook towards the world and created an opportunity to communicate with each other using social media.

At present, social media has turned out to be a vital part of people's lives—from interacting with other people to exchanging stories and sharing information, knowledge, and ideas (Shahjahan & Chisty, 2014). It has also brought people with different lifestyles to come together and to share their beliefs, wants, and needs.

While social media is deemed to have brought notable changes in the field of digital communication, some observed how challenging it is today to connect and to interact with people in real life. Turkle (2013) in her TED Talk delivered her observations how challenging it is for us to bond and create relationships in the middle of the digital revolution. She noted that people sacrifice conversation for mere connection. It is why for some they choose to bond and form attachment with pets instead.

Attachment to pets has a significant position in terms of social, emotional, and cognitive improvement, intellectual health, proper being, and quality of lifestyle. It can be observed that attachment to pets, a caring friendship behavior, compassion, and attitudes towards animals as well as tested socio-demographic differences, particularly in owning a different kind of pets provide beneficial effects to a human's well-being (Hawkins, Williams, & Scottish SPCA, 2017). Moreover, attachment to pets also satisfies social needs and often provides significant social support.

In choosing pets, people have different options from cats, fish, birds, and dogs, among others. According to Spire Research and Consulting (2019), pets have been a part of human society for thousands of years with cats and dogs even being buried with humans. Historical documents also presented how the ancient Romans also kept small toy dogs approximately 2,000 years ago.

As of 2016, majority of households across the globe owned a pet (Spire Research and Consulting, 2019). The same research noted that one third of households worldwide (on average) own a dog, while cats are not far behind, with one-quarter of households (23%) owning cats, making them the second most popular pet.

Dogs are considered as man's best friend because they show various functionalities and behavior like that of humans. In a study conducted by scientists to decipher what makes dogs unique, they argued that in order to be members of the human community, dogs need to acquire the potential to show that their behavior is compatible with people's perspectives (Miklosi, 2015). The same research also provided an example, saying that if dog owners want to make dogs go to a specific place, they use gestures which are considered as a form of exchanging communication. Most dogs that live with their owners acquire and adapt behavior easily without the need of particular training (Miklosi, 2015).

As already stated, pets can be physically and emotionally beneficial to their owners. Having a pet and taking care of them gives the owner an entertaining and amazing experience. A quick sweep of various social media sites would show that thousands of pet owners share pictures and videos of their pets performing various tricks and antics and how these pets entertain and comfort their owners. The said posts, in a way, encourage others to be interested in experiencing the same by acquiring pets for themselves.

Problems

This section lists the problems that people encounter when finding a match breed for their dogs as well as in choosing an affordable and reliable way of breeding dogs. Specifically, the problems are:

1. It is considered a hassle to find a match breed for dogs as not all pet stores have available breeds.
2. There is a high cost from direct stores that offer dog breeding. Prices usually depend on the breed that owners are looking for. Usually, the fee is also based on the negotiations between the owners of the dogs to be bred.
3. Some new dog owners do not know the right way of taking care of breed dogs.

Objectives

The aim of the research was achieved by providing a third-party system website application for dog breed owners in the easiest and most reliable way of searching and finding pure breeds for their dogs. Another aim is to help new dog owners to connect with knowledgeable and well-experienced dog owners who can help them take care of their breed dogs. The developed system delivers quality service to the users by assisting them in finding dog owners who offer the cheaper price for breeding their dogs. The researchers intend to produce a friendly web app that will serve as a social media-type website for dogs as well.

1. To create a website application with reliable information for dog owners who are looking to breed their dogs by showing the number of dog breeds available and their descriptions as well.
2. To establish a third-party system for dog owners to easily look for affordable prices for breeding dogs by browsing the website for available breeds that match their dog.
3. To connect new dog breed owners with well-experienced dog breed owners who can share their knowledge and experiences on how to take care of dogs.

Method

System Development Methodology

System Development Methodology refers to the steps used to form, plan, and control the process of developing an information system since it is virtually impossible to drive forward a project to computerize method without prior work (Ngbagaro, 2016). This study used the said methodology to get to the design and implement an information system. It needed to have a methodological approach to be able to meet the time on physical and human constraints during the process of development that leads to innovation of methods to improve the system.

The researchers used Agile Development as a methodology for the development of the system, which includes delivery of work in small but consumable, incremental and interactive development. The solution evolved through collaboration between users and the programmer, with close interactions and early feedback from the customers that helped the researchers deliver value to their customers faster.

Phases of Agile Methodology

Initiate Project and Defining Requirements

This phase is the first phase of the project as well as the foundation of the project. The researchers defined the project scope and requirements needed by the project. After defining the problem, the researchers came up with a solution to the problem which is to create an accessible system website application for dog owners and dog lovers looking for pure breeds that match their dogs and assist them look for an affordable price for breeding of dogs. It also enables them to connect to new, knowledgeable and well-experienced dog breed owners.

Designing Project

For the second phase of the project, the programmer actually designed the graphical user interface of the system requirements. This phase includes all the different technical

questions that may appear on this stage and defines the technologies and programming language used in the system.

Testing Phase

The testing phase includes detecting all the code flaws missed during the development. The testing process repeats until all the critical issues are removed and the system workflow is stable. In each step in the development cycle, the researchers came up with integration and testing. The researchers used the reviews and feedback of the system users like resources of the project if necessary and technical feasibility in an actual implementation.

Deployment Phase

This is the phase when the program is finalized and must not have critical issues; it is the time to launch it for the end users. The update of selected components is included in this phase to make sure that the system is up-to-date and is invulnerable to a security breach (Osetskiy, 2017). Deployment can be thought of as an extension of continuous integration, and the intent at minimizing lead time, the time elapsed between developments. To achieve continuous deployment, the researchers relied on infrastructure that automates and instruments the various steps leading up to deployment, so that they were able to meet the requirements of the system. The instrumentation is needed to ensure that any indication of lowered quality results in revoking the deployment process or invalidate new features and activate human intervention.

Results

Evaluation Results

This section includes the results of the evaluation and provides technical analysis and interpretation on the complete results. The system's performance was evaluated according to functionality, reliability, usability, maintainability, portability, and efficiency. There were fifty (50) respondents who evaluated the system.

Table 1. Assessment of the Respondents

Criteria	Mean	Descriptive Rating	Rank
Functionality	4.63	Excellent	5
Reliability	4.56	Excellent	6
Usability	4.80	Excellent	3
Efficiency	4.78	Excellent	4
Maintainability	4.84	Excellent	2
Portability	4.86	Excellent	1
Overall Mean	4.75	Excellent	

Table 1 shows the summary of the results of the evaluation of the non-IT experts, who included dog owners and dog lovers.

Functionality was given a rating of 4.63 or an "excellent" rating, which means that the system accomplishes its purposes.

Reliability was rated 4.56 or “excellent”, which means that the users found very minimal errors when they tested the system.

Usability was also given a rating of 4.80 which equates to an “excellent” rating. This shows that users found the system easy to use regardless of their background and inclination towards computer and system usage in general.

The efficiency of the software was given a rating of 4.78 or an “excellent” rating, meaning it processes inputs in a timely manner.

Maintainability was given an “excellent” rating or a mean score of 4.84 which indicates that the system is easily tested and navigated by the users.

The last characteristic, portability, was given a rating of 4.86 which equates to an “excellent” evaluation. This indicates that the system can be effectively adapted for different hardware, software and other operational or usage environments.

Table 2. Assessment of the IT Experts

Criteria	Mean	Descriptive Rating	Rank
Functionality	4.33	Excellent	1
Efficiency	3.89	Very Good	7
Compatibility	4.33	Excellent	1
Usability	4.11	Very Good	4
Reliability	4.17	Very Good	2
Security	4.07	Very Good	5
Maintainability	4.13	Very Good	3
Portability	4.00	Very Good	6
Overall Mean	4.13		

Table 2 presents the summary of the results of the evaluation made by the three IT experts.

Functionality and compatibility were both rated with a mean score of 4.33 or an “excellent” descriptive rating. This somewhat explained that the system met its main purpose which can be characterized by suitability, accuracy, interoperability, compliance, and security as well as the compatibility of the system to the product or components that can exchange information and use the exchanged information.

The system’s reliability was given a rating of 4.17 or a “very good” rating which means that the evaluators found very minimal to zero errors when they tested the system.

Usability was given a rating of 4.11 which can be associated to a “very good” rating. This shows that the evaluators found the system to be easy and simple to use. This also implies that the system is well-designed and enticing in terms of the graphical user interface.

Efficiency was given a “very good” rating or a mean score of 3.89, meaning it processes inputs in a timely manner.

The security of the system was given a rating of 4.07 or a “very good” rating. This indicates that the system ensures that data are accessible to those authorized to have access and prevents unauthorized access to, or modification of computer programs or data.

Maintainability was given a “very good” rating or a mean score of 4.13. This indicates that the system is easily tested and navigated by the users.

The last characteristic, portability, was given a rating of 4.00 which equates to a “very good” evaluation. This indicates that the system can be effectively adapted for different hardware, software, and other operational or usage environments.

The IT evaluators commented that the website developed was unique in terms of hovering the users’ profile picture with their dog’s profile picture. The PayPal module works well when upgrading membership of the user. The system is responsive on both mobile and browser modes. It was also commented that the website is a big factor for social media sites to be adaptable to different environments or devices. It was mentioned that the system is similar to the user interface of Facebook. Overall, the system meets its requirement of the users in terms of functionality and usability. Another IT evaluator said that the system must be modified and updated from all bugs on the next version. The IT experts recommended to finalize what are included in the tabs of the website. All of the comments and suggestions of the three experts were fulfilled in the development of the system.

Discussion

The aim of the start-up business project PawBreedster website application is to help dog owners and dog lovers to connect with each other and have the opportunity to communicate with well-experienced dog owners, specifically dog breeders who can share their knowledge in a proper forum in terms of taking care of dogs. Developing a reliable and accessible website application is a big factor in order to satisfy the needs of the users who are looking for a match breed for their dogs. The system also makes sure that only reliable information is provided for the users as a way of delivering good service. The system also helps users by offering an affordable price for those who are looking at breeding their dogs.

PawBreedster can also publish updates, announcements, advertisements, and invitations in the website about different events that are related to dogs.

1. PawBreedster is an accessible web-based application that supports dog owners and dog lovers in their lifestyle interests.
2. The start-up business project focused on providing a user-friendly website application system for dog owners and dog lovers.
3. The website application system provided a medium in supporting users’ concerns.
4. The website application system was developed with security for every data and information, preventing unauthorized access.
5. The following modules were included in the website: Customer Support, Content Management System, Administrator, and User.
6. The respondents of the study were 50 users, and three (3) IT experts.

The researchers were supported all throughout with the help of the gathered information provided by other existing studies. The alpha testing and browser compatibility was used to evaluate the system. Overall, the website application system met the functional requirements set by the users, following property of the ISO 25010 such as functionality, efficiency, compatibility, usability, reliability, security, maintainability, and portability. All of these results demonstrated that the website application system is user-friendly, secured, and beneficial to the users.

Conclusion

The researchers ensured that all the requirements given by the panelists and adviser to establish a reliable and accessible website application system were followed. The researchers developed an interactive website application system that contained different modules which were useful for the administrator as well as the users.

1. A reliable and accessible website application system was created in order for the users to easily find a match breed for their dogs. Content management system was used to feature the following: advertisements, events, dog breed information, maps for veterinary clinics and pet stores.
2. The administrator module allows the users, vet clinics, and pet stores to post announcements, advertisements, and events of different activities related to dogs with the approval of the administrator who updates the site regularly.
3. The researchers created a website application system which provides the dog breed information needed by the users.
4. Customer Support Module was used to allow customers to air out concerns through comment, feedback, messages, and ratings.
5. The Administrator Module was created to secure and monitor every data and information and to prevent unauthorized access.

Based on the results of the study, the following are recommended for future improvements of the PawBreedster, a website application for dog owners and enthusiasts:

1. Addition of friends and followers for dog owners and dog lovers in the system
2. Inclusion of mobile application system in Android and IOS in the near future
3. Inclusion of face recognition for dogs to identify automatically if the images posted are related to dogs in the near future

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