

# Pet Club Website Based on Joomla

Shanliang Yao

*Department of Computer Science and Software Engineering*

*Xi'an Jiaotong-Liverpool University*

Suzhou, China

Shanliang.Yao19@student.xjtu.edu.cn

**Abstract**—After analyzing the requirements of the current pet market, I developed a website for pet lovers named Pet Club. Not only PHP, MySQL, JavaScript, CSS but also templates and plugins of Joomla are used to build this website. On this website, lovers can communicate and share their experience of keeping pets, view exhibitions and party events. High-quality pet supplies with their purchase links are selected and displayed on the website. Pet care knowledge written by the pet doctors and hospital information collected from the Internet are available for lovers to learn.

**Index Terms**—Pet Club, PHP, MySQL, JavaScript, CSS, templates, plugin, Joomla

## I. INTRODUCTION

### A. Background

With the improvement of living standards, a new life and consumption concept is now prevalent among the young and gradually influencing the whole society. A typical phenomenon in China is that due to rapid aging of the population and the increase of Dink families, there is a fashion for keeping pets (Wang Xinzhu, 2018) [1] and the purpose of keeping those animals is transforming from the original simple housekeeping to the high-level spiritual pursuit of heart caring. Such change has brought rapid development of the pet economic market. People are willing to pay more time, energy and cost for pets. Just like bearing children, they buy food, detergents, clothing, toys and other supplies for their pets, and bring pets to receive medical, beauty, domestication and other services. According to the “2019 White Paper on China’s Pet Industry” [2], China’s urban pet consumption scale reached 202.4 billion RMB, an increase of 18.5% over 2018. It is estimated that by 2023, the scale of China’s pet consumption market will reach 472.3 billion RMB.

With decades of development of the Internet, a new period in which the Internet is integrated with all kinds of industries has come and is flourishing and booming all over the world. For China, it is obvious that the convergence of the Internet and the cultural industries are increasing its pace to enrich mental life and promote economic growth. It is the coming of Internet Plus epoch that brought the golden prosperity for the pet industry to promote combined online and offline services.

### B. Aims and objectives

This project is to develop a social networking website, naming Pet Club, for pet lovers. Pets Club embraces three types of social media, media sharing networks, discussion forums and interest-based networks. On this website, pet lovers can not only share texts, photos, and videos but also participate in organized activities to enjoy their hobbies. All functional modules are described as follows:

#### 1) Forum:

Pet lovers can share interesting stories about themselves and their pets on different topics. They can also comment on posts, which greatly increases the interactivity of the website.

#### 2) Supplies:

All products are carefully selected from other famous websites and are highly rated by users. Pet Club will strictly control the quality of pet supplies and provide reliable products for users.

#### 3) Hospitals:

This module summarizes the information of some pet hospitals, including the name, address, and phone of the hospital. This makes it easy for users to find nearby hospitals to provide care and treatment for their pets.

#### 4) Knowledge:

All nursing knowledge is written by professional pet doctors and provided to users for learning. Users can also comment on these articles, and experts will reply to help solve difficult problems.

#### 5) Activities:

Pet Club will hold regular events to invite pet lovers to participate in some pet supplies exhibitions and offline parties. This provides face-to-face guidance and exchange of experience.

## II. LITERATURE REVIEW

### A. Social website vers Standard websites

Since the advent of social websites in 1997, many scholars have tried to give it a final definition, but so far, there is still no clear explanation, and opinions vary. Social network research expert Danah Boyd (2008) mentioned that the social website we defined is based on a network service, which allows individuals to build an open or semi-open image in

a system with boundaries [3]. In the technical environment of Web2.0, interaction is ubiquitous. In social websites, after the user creates an account, he can make new friends, even with friends of friends, keep in touch with friends who have not been in contact for a long time, or stay in touch with friends of different cultures and religious beliefs. Some well-known social websites at home and abroad are Weibo, Facebook and Twitter.

Contrary to social websites, which are designed and developed for social interaction, a standard website is one-way, equivalent to a national or even international network media [8]. It provides users with the latest information and knowledge they want to obtain. Official websites for schools, companies, governments and organizations are all standard websites.

As to pet lovers, if they need to know the latest policy of keeping pets in their district or search online for certain pet hospitals and care centers to get professional suggestions, they shall turn to the relevant government website and official hospital website. However, it is rather time-consuming and inconvenient. A social website designed to target pet lovers can simultaneously meet both two requirements. Meanwhile, apart from searching for information and knowledge, a social website also provides a platform for pet lovers to create their own accounts that they can log into, build their own profile pages to share life with loved pets in words, pictures, and videos, and contact with friends online either anonymously or not.

#### B. Different types of social media and relevant features

Social media can be defined as “a group of Internet-based applications that built on the ideological and technological foundations of Web 2.0, and that allow creation and exchange of user-generated content” (Kaplan & Heanlein, 2010) [4]. When developing a social website, there is one point that must be is why people are using this kind of social media to connect online. Based on analysis of the demand, social media can be categorized into ten types: social networks, media sharing networks, discussion forums, bookmarking and content curation networks, consumer review networks, blogging and publishing networks, interest-based networks, social shopping networks, sharing economy networks, and anonymous social networks [9]. Different types of media can realize different demands. In the project mentioned (i.e. Pet Club), in order to build a platform for pet lovers to not only share texts, photos and videos but also participate in organized activities to enjoy their hobbies, it involves three types of social media, media sharing networks, discussion forums, and interest-based networks respectively.

### III. SYSTEM DESIGN

Considering the particularity of this group of pet lovers, their favorite websites are lively and energetic. So some cute pictures of pets on the website are essential, which can attract pet lovers to browse and share. Besides, the overall color of

the website should be simple and light, which can give users a comfortable feeling.

#### A. System diagrams

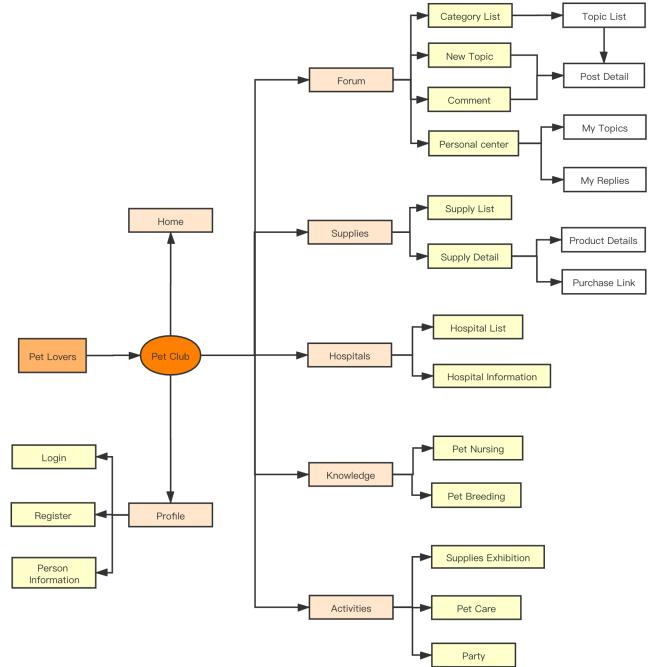


Fig. 1. System module diagram

As shown in Fig. 1, it shows the functional module structure of this project. Some specific modules are shown on the right, including Forum, Supplies, Hospitals, Knowledge and Activities. In addition, this project also has common modules of social networking sites, such as Home and Profile.

#### B. Navigation designs

Navigation should be clearly marked and marked so that users understand where they are and where they can go [10]. The navigation design for this project is breadcrumb navigation, which can show the users where they are in the system.

For example, in the forum module, my breadcrumbs will show the category the user is currently in. The user can clearly know his position, and can also return to the previous category. The navigation bar is an opportunity to improve Search Engine Optimization (SEO) and provide users with more relevant information [11]. By adjusting user goals, content strategy, and navigation design, I will be able to create the cohesiveness and consistent user experience that users love.

Use case diagram refers to the view used to describe the function of the system, which is composed of actors, use cases, boundaries, and the relationships between them [6]. Use case can help acquire requirements, guide testing and play a important role in other workflows when the project is going on.

### C. Use case diagrams

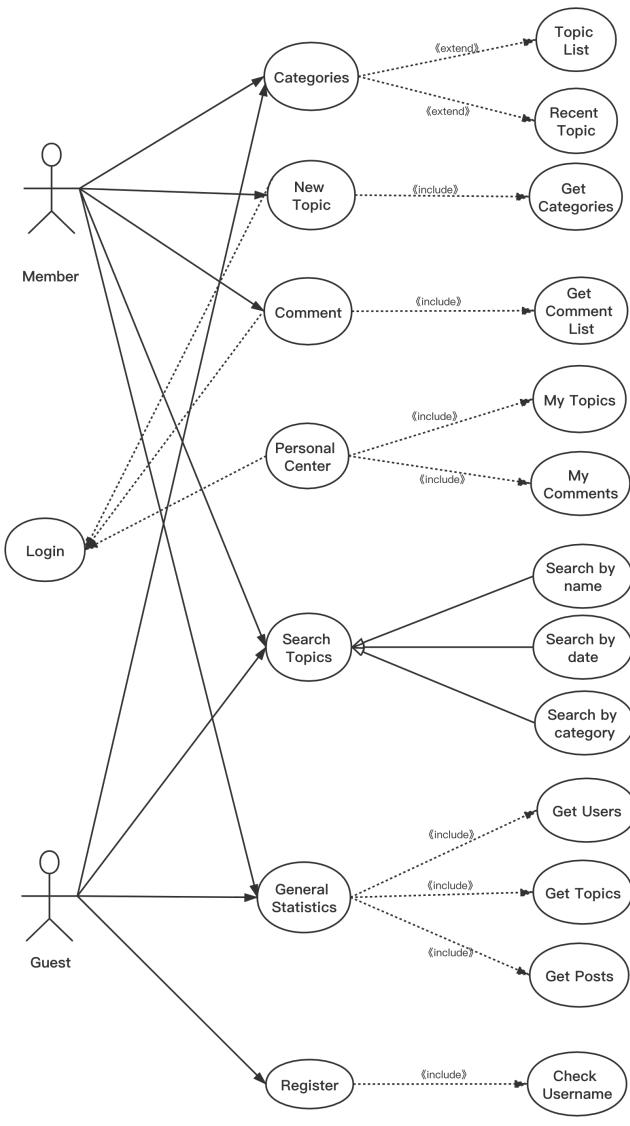


Fig. 2. Use case diagram

As can be seen from Fig. 2, users on this website are divided into guests and members, and the content they can see is different. Guests are users who have not logged in to the website. They can view the categories of the forum, the statistics of the post and search topics, but cannot post and comment. When they register an account, they become members and can access all the content of the web.

### D. Menu mock-ups

Fig. 3 shows the menu design of this project. There are Home, Forum, Supplies, Hospitals, Knowledge, Activities, Profile. Under the button of forum, there are buttons of Pet lovers, New Topic, Recent Topics, Categories, Topics, Statistics and Topic Search. In the module of supplies, there are all supplies and recommend supplies. It is same to the

module of hospitals, it has all hospitals and recommend hospitals. In Activities, users can view activities by the event and calendar. And In Profile, users can logout and Edit the profile information.

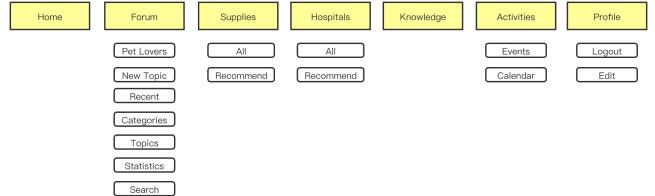


Fig. 3. Menu mock-ups

## IV. IMPLEMENTATION

The entire project is based on the Joomla, which is a popular social networking framework with various themes and plugins [7]. Some technologies like HTML, JavaScript, CSS, PHP, MySQL are used to perfect this framework to achieve this project.

### A. Software architecture

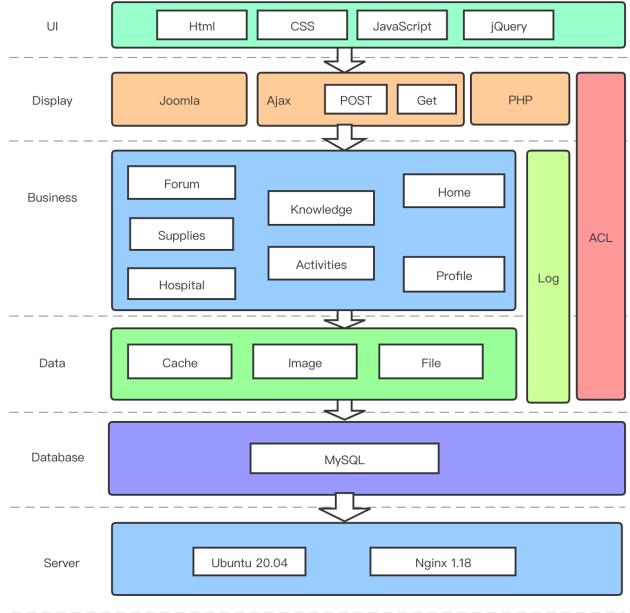


Fig. 4. Software architecture diagram

As can be seen from Fig. 4, I use HTML, CSS, JavaScript, jQuery to draw the user interface of this project and use Joomla, Ajax and PHP to show the page. Forum, Supplies, Hospitals, Knowledge, Activities, Home and Profile are the business of this project. Some images and files are the data that needed to be uploaded to this project. Database for this project is MySQL which is a popular database in the world.

The whole project is deployed on the Ubuntu with Nginx as the web server.

### B. Template

The template I used is Protostar which is a famous template in Joomla. Although its pages are simple and functional, it does not match the pet theme of my site. So I have done some modifications like changing the colors and adjusting the layouts to adapt to the size of different browsers and different screens.

### C. Plugins

#### 1) Kunena Forum:

Kunena Forum plugin has been used in this project. It has the following features [5]:

- Easy: we can easily change the code with template overrides and HMVC.
- Speed: it has improved the code, and with PHP7 we have a increase of 200-300%loading times.
- Free: Kunena will always be free for developers to use.

With the plugin of this forum, we can easily publish posts, which can be photos, stories, videos, etc. of some pets. Others can comment and like the following, which greatly increases the sociality and fun of this site, and can attract users to visit.

Of course, this plugin is not able to directly meet the needs. Some styles and functions are not compatible with the original Joomla framework, so I made some modifications. The first is the color and size of the button. By modifying the CSS style, adjust it to match the style of the website. I also modified some of the features of this plugin, such as adding a user list and clicking into the user's homepage, so that you can view all the users' posts, which is very convenient for users to pay attention to special people.

#### 2) JEvents:

Pet Club will regularly organize activities to invite pet lovers to participate in some pet supplies exhibitions and offline parties, which can bring everyone together to exchange experiences and promote feelings. I have used a plugin named JEvents to create activities. The description of the event will be published in the Activities module of Pet Club, which contains the theme, time, location, and contacts of the event. Users can see whether there is an event on a certain day from different angles such as year, month, and week. I have modified the style of buttons and layout to make it consistent with the overall style of the website.

#### 3) JW Page Factory:

JW Page Factory is a plugin for creating pages without coding. Through the configuration of functions, it can display the corresponding page on the website. It provides various templates for us to import and modify to form a new page. It also provides numbers of components, such as pictures, text boxes, maps, etc., We can directly drag the corresponding components to apply to this website. I created a homepage, a hospital page, a user page using JW Page Factory. Some styles have been modified and some pictures have been added to show a vivid page.

## V. TESTING

### A. Usability testing

When testing, I tested according to the user cases. For example, in the forum module, guests can view categories, search topic and view statistics without logging in. When they want to post or comment on a topic, they need to be a member by registering an account of this website. After logging in, they can see all functions of this module, including creating a new topic, commenting on a post, and viewing personal information. In addition, there is a statistical module that can display the number of posts, user information with more posts, and accumulated post information. In the search module, users can search based on the keyword of the post and the name of the poster, and they can also search according to the post time and post classification.

### B. Unit testing and system testing

When a module is completed, I have done unit testing on the functional module to check whether the function can run normally. For example, users can create a new post by clicking the new topic button, enter the category and subject, and then enter the text, which supports pictures, videos and some text styles. After clicking the submit button, the post can successfully be published. Under the corresponding category of the forum, users can view the post just posted, and also include the time of publication, page views and other information. Users can comment below and report the illegal posts. After all the modules were completed, I did a system test to check whether the entire project was feasible. Some bugs have been finished and some details have been optimized.

### C. Web pages

Appendix I has show some web pages of this project. There are some cute pets and their information on the website. Some pet lovers and their photos are shown in this website. On the left of this page is the product detail, we can see information of the high-quality product. And there is a purchase link on the bottom of this page. We can click on it to jump to the website to buy. On the right of this page is the event calendar, we can clearly see the events on which days. There is a map on each hospital page. With this map, users can find nearby hospitals easily.

## VI. DISCUSSION

### A. Challenges

When using Joomla to develop this website, I have faced various challenges. Since I am not familiar with Joomla at the beginning, I didn't know where to configure the function for showing some pages. After groping for a while, now I have been able to skillfully use the various functions of Joomla to build a functional website.

Besides, when installing the extensions, some of them conflicted with the current version of Joomla, resulting in an error page. I searched various tutorials on the Internet to study

solutions. At last, some extensions need to modify the code before they can be used.

In addition, I also spent a lot of time on color matching. Perhaps it is the reason for the lack of design of this website, I always feel that the color matching is not very coordinated. Next, I will refer to the high-quality website and continue to improve the style of this website.

### B. Strengths

This website implements many social functions and can attract pet lovers to visit. Strengths are listed below:

- It provides a platform for users to communicate and share pet stories.
- It collects high-quality pet supplies for users.
- It summarizes reliable pet hospital information.
- It shares professional pet care knowledge.
- It organizes regular events to promote friendship among members.
- It promotes the development of the pet industry.

### C. Limitations

Although this website provides many social network functions, it still has some limitations that need to be considered. For example, the pages of this website still need to beautify, and more attractive pages will attract more users. Beside, there are many social software now, like WeChat, Weibo and Facebook which can be compatible with their login methods. In this way, users can log in to this website very conveniently without registering.

### D. Future work

After this project, I will continue to study the programming of social web. My website will collect more user data, which can be helpful for analysis. Besides, I will optimize CSS styles to improve the beauty of the website Research more Joomla extensions to apply to the website. Future more, Some market research will be done and more literature will be studied to analyze this project deeply.

## VII. CONCLUSION

This website provides a platform to share pet stories and learn professional pet care knowledge. High-quality pet supplies are collected for pet lovers to choose. Pet lovers can know about regularly held activities and engage in offline interactions. Pet hospital information summarized on the website also facilitates fans to find nearby pet hospitals.

Pet lovers will be attracted to record and share their lives by the social features of this site. I hope that this website will be recognized by them and serve more pet lovers.

## ACKNOWLEDGMENT

I am very lucky to have this opportunity to do research on social web programming. I would like to express my thanks to Prof. Andrew for his careful teaching in the online class and patient answering in the Q & A class, as well as providing

some learning materials for us. Thanks to the relevant literature for providing me with background and technical reference. In the future, I will also use the knowledge I have learned to serve the enterprise in the software development and continue studying to improve myself.

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## APPENDIX I. WEB PAGES

### Pet Club

For Pet Lovers

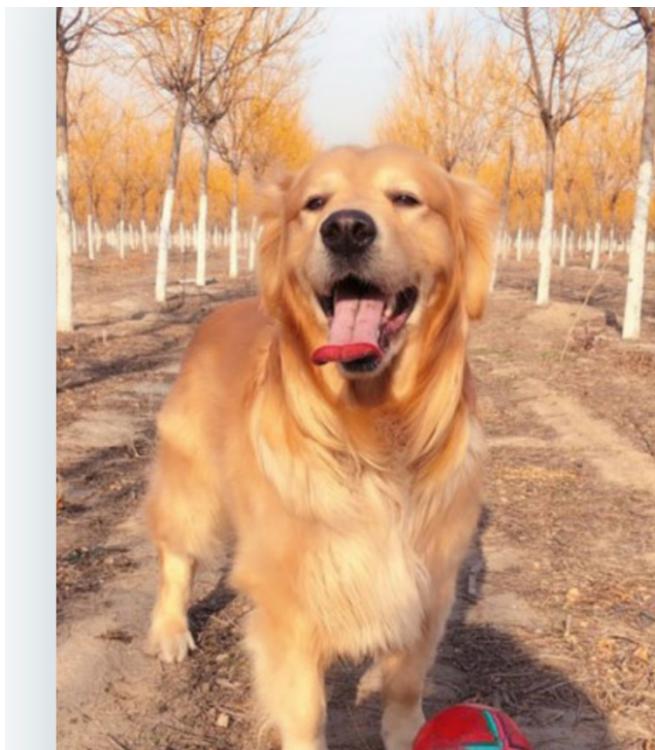
Search ...

#### Main Menu

Home Forum Supplies Hospitals Knowledge Activities Profile



Fig A-1. Home page of Pet Club



**Nala**

**2 YEARS OLD, ADULT**

Nala is an approximately 35 pound gentle and loving terrier mix. She is about 2 years old and still has a ton of playful energy. Like her namesake in the Lion King movie, Nala is a regal, long legged beauty with courage and brains to boot. Nala loves to play and especially loves spending time outdoors. She also loves getting attention and love from her human fosters and being spoiled with a nice comfy dog bed to sleep on. It seems that wherever Nala was before she did not have consistent food. She is gaining weight in her foster home and has shown a bit of food aggression, but we thinking that will resolve with some training and once she learns that she is safe and well-fed. Nala has a cute habit of sticking her tongue out, particularly when she sleeps. Nala is looking for a forever home where she can get lots of exercise, basic obedience training, and, of course. lots of love and comfort.

Fig A-2. Introduction of pet

# SUPPLIES



## Chicken & Rice

Prebiotic fiber to fuel beneficial gut bacteria & support a balanced microbiome

[LEARN MORE](#)



## DOG MX™ Nursing Kit

Feeding orphaned or newborn pets is easier with the help of this Dog MX Nursing Kit.

[LEARN MORE](#)



## Adult Dog Food

Ultra digestible for an extremely sensitive digestive system

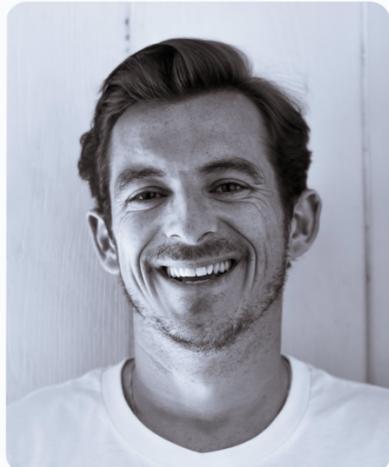


## Beauty Adult Cat Food

Crude Protein (MIN) 7.5%  
Crude Fat (MIN) 4.0%

Fig A-3. Supplies

# HAPPY MEMBERS



*"It was great experience working with Mclovin! He is a nice guy and very professional in his profession. we'll be working with him in future for sure!"*

### Julia Morrison

Software Engineer @ZEDEK LLC



Fig A-4. Members

Board Categories		X										
<b>Pet Club</b> 6 topics												
This is the default topic												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Category</th> <th style="text-align: right; padding: 2px;">Last Post</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;"> <b>Dog</b> 4 topics </td><td style="text-align: right; padding: 2px;">I am a lovely dog My name is Nala! by admin 2 days 59 minutes ago</td></tr> <tr> <td style="padding: 2px;"> <b>Cat</b> 1 topic </td><td style="text-align: right; padding: 2px;">I am very cute My name is Mama! by ShanliangYao 3 days 22 hours ago</td></tr> <tr> <td style="padding: 2px;"> <b>Fish</b> 1 topic </td><td style="text-align: right; padding: 2px;">I can swim My name is Nala! by ShanliangYao 3 days 23 hours ago</td></tr> <tr> <td style="padding: 2px;"> <b>Bird</b> No topics </td><td style="text-align: right; padding: 2px;">I can fly No topics</td></tr> </tbody> </table>			Category	Last Post	<b>Dog</b> 4 topics	I am a lovely dog My name is Nala! by admin 2 days 59 minutes ago	<b>Cat</b> 1 topic	I am very cute My name is Mama! by ShanliangYao 3 days 22 hours ago	<b>Fish</b> 1 topic	I can swim My name is Nala! by ShanliangYao 3 days 23 hours ago	<b>Bird</b> No topics	I can fly No topics
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<b>Fish</b> 1 topic	I can swim My name is Nala! by ShanliangYao 3 days 23 hours ago											
<b>Bird</b> No topics	I can fly No topics											

Fig A-5. Categories of forum

Forum > Pet Club > Dog		
<input style="width: 150px; height: 20px; border: 1px solid #ccc; margin-right: 10px;" type="text" value="- Dog"/> - Dog		
<b>Dog</b> 4 topics <p>I am a lovely dog</p>		
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">Start</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">Prev</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">1</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">Next</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">End</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 15px; margin-right: 10px;">Search </span> </div>		
▼ Subject	Replies / Views	Last Post
My name is Nala! Topic started 2 days 58 minutes ago, by admin	Replies: 0 Views: 2	Last Post by admin 2 days 58 minutes ago
My name is Kit! Topic started 3 days 23 hours ago, by ShanliangYao	Replies: 0 Views: 4	Last Post by ShanliangYao 3 days 23 hours ago
My name is Nala! Topic started 3 days 23 hours ago, by ShanliangYao	Replies: 0 Views: 1	Last Post by ShanliangYao 3 days 23 hours ago
Welcome Topic started 3 days 23 hours ago, by admin	Replies: 0 Views: 2	Last Post by admin 3 days 23 hours ago
<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">Start</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">Prev</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">1</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">Next</span> <span style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 10px;">End</span> </div>		

Fig A-6. Topics of category dog

## Authority Large Breed Adult Dog Food - Chicken & Rice



### DESCRIPTION

Provide your large breed dog with a delicious and nutritious meal time choice by serving Authority Everyday Health Large Breed Puppy Food. This delicious dry blend features nutrients that support joint and health mobility, a healthy immune system, healthy skin and a shiny coat, digestive health, and even oral care.

### Key Benefits:

- Glucosamine and Chondroitin Sulfate support joint health and mobility
- Vitamin E, Selenium and Zinc support a healthy immune system
- Omega-3 and Omega-6 Fatty Acids nourish healthy skin and coat
- Natural Fiber and Prebiotics help maintain digestive health
- Ora-Shield System Crunchy Kibble helps reduce plaque and tartar

Item Number: 5279157

**Brand:** Authority

**Food Type:** Dry

**Life Stage:** Large Breed Adult (Ages 1-7)

**Flavor:** Chicken and Rice

**Weight:** 34 lb (15.4 kg)

**Purchase Link:**

<https://www.petSMART.com/featured-brands/authority/authority-large-breed-adult-dog-food---chicken-and-rice-49281.html?cgid=5000002>

Fig A-7. Detail information of supply

# VISIT HOSPITAL

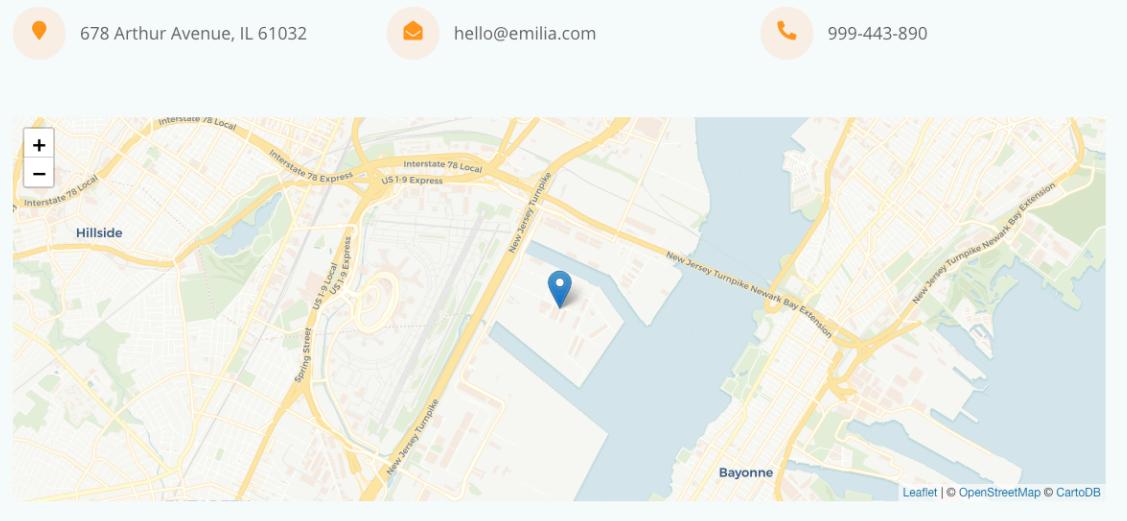


Fig A-8. Map of hospital

## Events Calendar

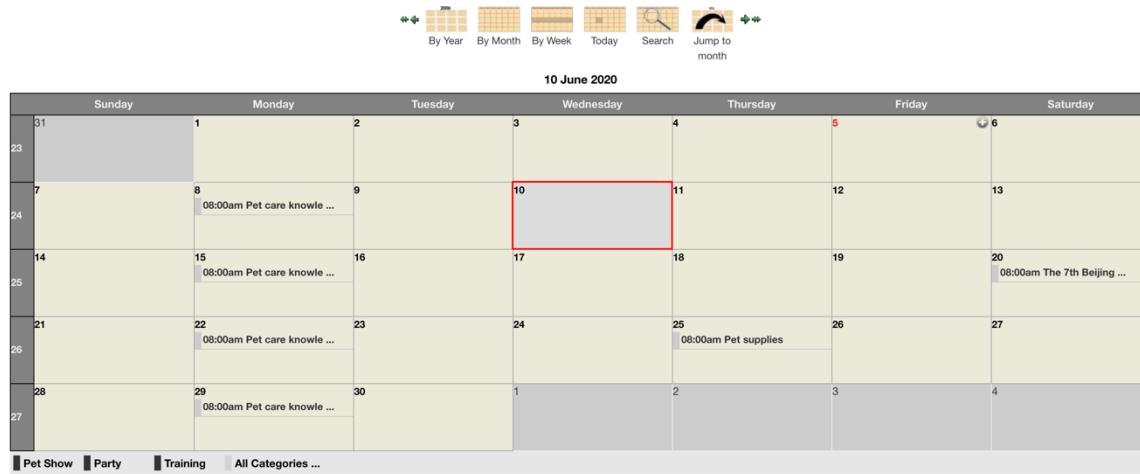


Fig A-9. Activities from the Event Calendar