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1. Abstract

Little paws is an online, searchable database of animals who need homes. Hundreds of pets are abandoned and rescued in India everyday. Although there are many wonderful souls across the nation who work extra hours and put in efforts beyond their capacity, there is always a shortage of funding and communication across the animal activist circuit.

It's a way of giving a loving new home to a shelter animal – and maybe even saving its life. There are many different animal care issues to consider during the adoption process, but it will all be worthwhile when the new owner goes home with their adopted pet. Every dog deserves a loving home. Help us spread the word about the life-changing experience of adoption.

2. Introduction

Animal adoption is the process whereby a person brings an animal, mostly cats and dogs, to their own care. These animals that are either lost or abandoned are taken by the animal control to be kept in animal shelters. Pets that are kept in the shelters for a long time are euthanized to reduce the number of overpopulation of unwanted animals.

Animal shelters play a vital role in our communities as they continuously work to reunite pets with their owners, shelter those in need and find new homes for animals that are lost, without a permanent home or for those animals that, for our own security, shouldn't be roaming our streets. For animal shelter workers, it's often a thankless job as they balance having enough space to house all the animals, coordinating pet adoptions and developing their homegrown campaigns to encourage people to be responsible and spay and neuter their animals. And animal shelter staffs do all of this while trying to convince people to look first at animal shelters for that special family pet.

With all the extra time at home everyone has now, many people may be considering getting a new pet. But, just because your quarantined lifestyle may make sense for a pet, you really need to consider whether your post-social distancing life and schedule truly fits with the animal you may be welcoming into your home.

It's important to do your research before you get a pet. You need to know how long an animal's life span is, the annual costs for food, supplies and vet bills, and how much physical activity and attention your new pet may need.

It's also important to adopt animals from your local animal shelters. These shelters work tirelessly to rescue animals from poor conditions, provide medical care including vaccines and spaying/neutering, and many go above and beyond to help wild animals living around us as well. Plus, by adopting animals from shelters, you open up more space for them to continue rescuing more animals in need.

Overburdened shelters take in millions of stray, abused and lost animals every year, and by adopting an animal, you're making room for others. Not only are you giving more animals a second chance, but the cost of your adoption goes directly towards helping those shelters better care for the animals they take in!

The inspiration of this project is a web-based adoption site for people to be more aware of stray animals waiting to be adopted. The website is accessible for users and administrators where users can register themselves into the system to view the list of animals waiting to be adopted along with each animal's records such as their (estimated) age, gender, and their description. The administrators are the main authority of the system and they are responsible for adding, editing, updating, and deleting information if necessary.

3. Statement of the Problem

Animal's Profile

Our project has focused on presenting the user with each animal's personality descriptions to gain the user's interest to adopt the animal.

4. User Requirements

There are two users involved in the system, the user that is interested in adopting the pet and the administrators who take care of the web application. The requirements are considered as follows:

User:

1. To be able to register as a part of the system.
2. To be able to view the list of animals in the shelters and their basic information order to make decisions to adopt.
3. To be able to send messages or ask questions through the system.

Administrator:

1. To be able to check the contact requests from the shelters from various cities
2. To be able to register a shelter from a particular city
3. To be able to create, update, delete and query the animal's records in order to manage information.
4. To be able to create, update, delete, and query adoption records to manage information about adoptions made.
5. verify and approve users happystories
6. Answer and upload the frequently asked questions

5. Objectives

The goal of this project is to develop a website for users to select animals to adopt conveniently. The main objectives of this website development can be defined as follows:

- To develop a system that provides functions to support users to view the animals in the shelters conveniently.
- To maintain records of animals in the shelters and the users information in a centralized database system.

- To develop a system for administrators to be able to approve the user's answers to the provided questionnaire.

6. Development Tools and Information

Front End Languages

- HTML
- CSS
- Javascript



Back End Language

- Python



Web Framework

- Django



Database

- PostgreSQL



Deployment

- Heroku



7. Methodology

1. Project Identification and Selection

In this project, we aimed to develop an online animal adoption system which will focus mainly on managing the animal records.

2. Project Initiation and Planning

To begin the project, we have gathered user requirements of this system and prepare the scope and objective. The results from this phase are scope and limitation, objectives, cost and benefits, feature of the proposed system and user interface design.

3. Analyzing System needs

We have studied and identified problems of existing animal shelters, then we develop a data flow diagram for the existing system. We also develop a data flow diagram (DFD) and entity relation diagram (E-R diagram) for the proposed system.

4. Designing the Proposed System

Based on the analysis phase, we converted the E-R diagram into relational database model and created a data dictionary and Data flow Diagram and user interface are designed in this process.

5. Development of the Proposed System

In this phase, we are going to convert the design of the proposed system to computer software, which includes computer programming using Django as the framework written in Python, which is intended to handle the administration of Postgresql database, and translating the design specifications into the computer code.

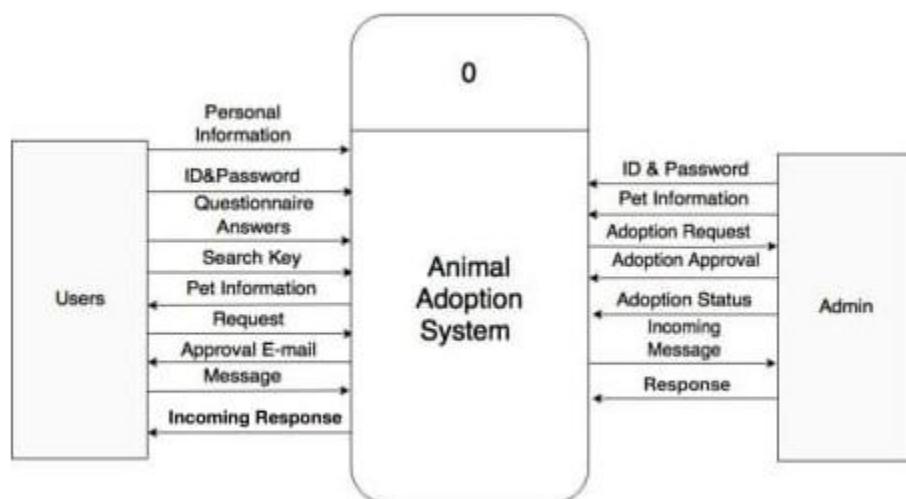
6. Testing the Proposed System

This step is the process of testing whether the programming code will work correctly with the conditions in our system or not. In this phase, we will fix bugs in order to produce a system with maximum performance.

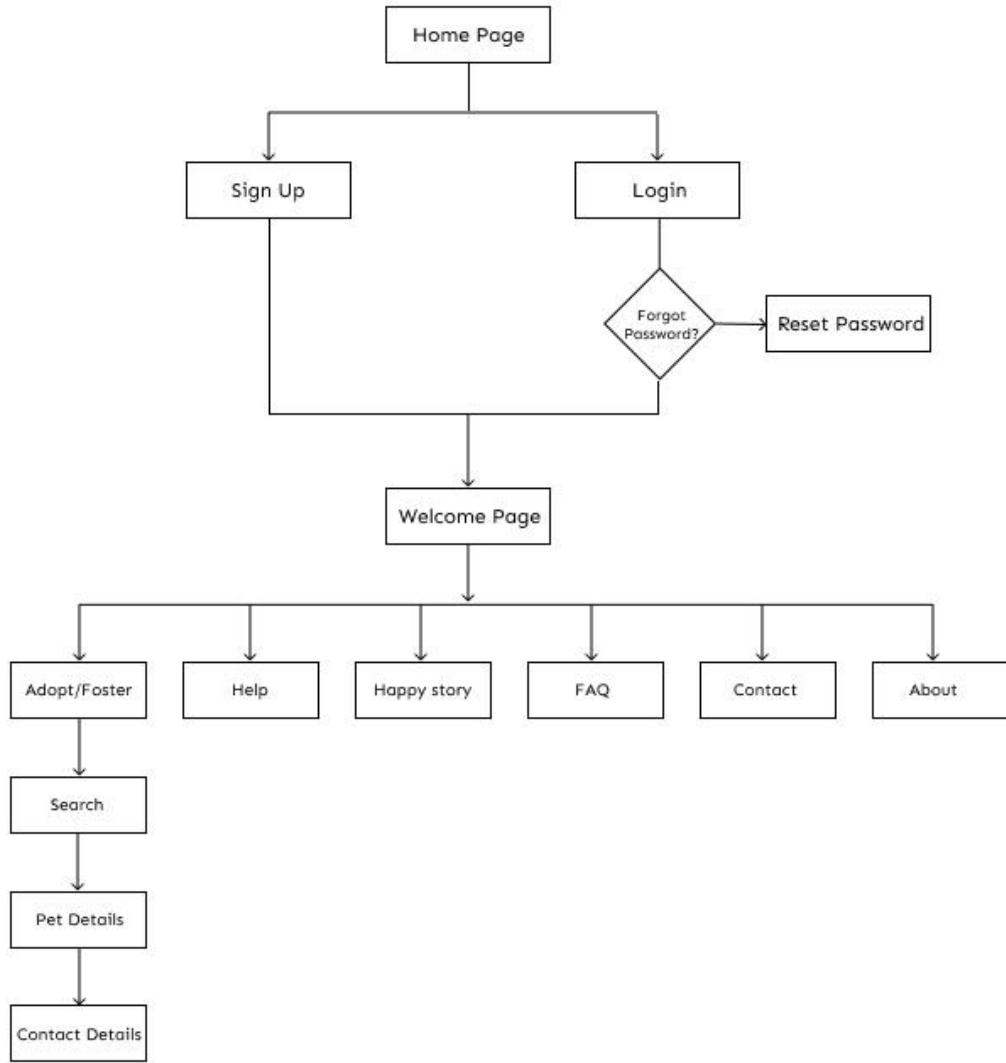
7. Implementing the Proposed System

We wish to launch this system on the internet, so that users are able to view the available animals for adoption.

8. Logical Design of the system



9. User Flow Diagram



User Flow Diagram

10. Source Code

Models Code:

Little Paws/models.py

```
from django.db import models

#Faq model
class Faq(models.Model):
    question = models.CharField(max_length=500)
    answer = models.TextField()
    def __str__(self):
        return self.question

# happy stories model
class Happystories(models.Model):
    description = models.CharField(max_length=500)
    happy_story = models.TextField()
    admin_verification = models.BooleanField(default=False)
    def __str__(self):
        return self.description
```

Little_paws_adopt_foster/models.py

```
from django.db import models
```

```
#Registered cities model
class Registeredcities(models.Model):
    city_name=models.CharField(max_length=50, unique=True)

    def __str__(self):
        return self.city_name
```

```

#Registered shelters model
class Registeredshelters(models.Model):
    shelter_name= models.CharField( max_length=200)
    shelter_city=models.ForeignKey(Registeredcities , on_delete=models.CASCADE)
    shelter_location=models.CharField( max_length=200)
    shelter_email=models.EmailField()
    shelter_contact_number=models.BigIntegerField()

    def __str__(self):
        return self.shelter_name


#Pet details model
class Petdetails(models.Model):
    pet_name = models.CharField(max_length=50)
    pet_image = models.ImageField(upload_to ='pics')

    pet_shelter_name = models.ForeignKey(Registeredshelters , on_delete=models.CASCADE)

    pet_type_choice=[('DOG','dog'),('CAT','cat')]
    pet_type=models.CharField(max_length=10, choices=pet_type_choice)

    gender_choice=[('MALE','male'),('FEMALE','female')]
    pet_gender = models.CharField(max_length=10, choices=gender_choice)

    pet_breed = models.CharField(max_length=50)
    pet_age=models.CharField(max_length=50)
    available_for_adoption = models.BooleanField(default=True)
    availabe_for_foster=models.BooleanField(default=True)
    last_modified=models.DateField(auto_now=True)

    def __str__(self):
        return self.pet_name

```

11. Database Schema

```
little_paws=# select id,username,email,is_superuser from auth_user;
 id | username |           email            | is_superuser
----+-----+-----+
  3 | Harish   | harish@gmail.com        | f
  2 | Priyanka | priyu@gmail.com       | f
  5 | Pooja    | pooja@gmail.com        | f
  1 | Nivedha  | nivedharaju11@gmail.com | t
```

```
little_paws=# \dt
              List of relations
 Schema |           Name           | Type | Owner
-----+-----+-----+
 public | accounts_organistaion_contact | table | postgres
 public | auth_group                  | table | postgres
 public | auth_group_permissions     | table | postgres
 public | auth_permission             | table | postgres
 public | auth_user                   | table | postgres
 public | auth_user_groups           | table | postgres
 public | auth_user_user_permissions | table | postgres
 public | django_admin_log            | table | postgres
 public | django_content_type         | table | postgres
 public | django_migrations           | table | postgres
 public | django_session              | table | postgres
 public | little_paws_adopt_foster_petdetails | table | postgres
 public | little_paws_adopt_foster_registeredcities | table | postgres
 public | little_paws_adopt_foster_registeredshelters | table | postgres
 public | little_paws_faq              | table | postgres
 public | little_paws_happystories    | table | postgres
(16 rows)
```

```
little_paws=# select * from little_paws_adopt_foster_registeredcities;
 id | city_name
----+-----
 1 | kodaikanal
 2 | Bangalore
 3 | Kolkata
 4 | Chennai
 5 | Mumbai
 6 | Coimbatore
 7 | Pondicherry
 8 | Hyderabad
 9 | Kochi
10 | Raipur
(10 rows)
```

```
little_paws=# select * from little_paws_adopt_foster_registeredshelters;
 id | shelter_name | shelter_location | shelter_email | shelter_contact_number | shelter_city_id
----+-----+-----+-----+-----+-----+
 1 | Safe guard shelter | kookal | safeguardshelter@gmail.com | 8220664443 | 1
 2 | sprinkle shelter | mannavar | sprinkleshelter@gmail.com | 8220664446 | 1
 3 | live shelter | koramangalam | liveshelter@gmail.com | 9639639639 | 2
 4 | Friendly shelter | Indiranagar | friendlyshelter@gmail.com | 9789789789 | 2
 5 | Eco shelter | Ballygunge | Eco@gmail.com | 8528528528 | 3
```

```
little_paws=# select * from little_paws_adopt_foster_petdetails;
id | pet_name | pet_image | pet_type | pet_gender | pet_breed | pet_age | available_for_adoption | available_for_foster | last_modified | pet_shelter_name_id
----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
 2 | Max | pics/max.jpg | DOG | MALE | Gaddi kutta | 4 months | t | f | 2020-12-04 |
 1 | Boots | pics/boots.jpg | CAT | MALE | siamese | 2 years | t | t | 2020-12-04 |
 2 | Buddy | pics/buddy.jpg | DOG | MALE | kaikadi | 1 year | t | t | 2020-12-04 |
 3 | Oscar | pics/oscar.jpg | DOG | MALE | Jonangi | 1 year | t | f | 2020-12-04 |
 4 | Patch | pics/patch.jpg | DOG | MALE | persian | 2 years | t | f | 2020-12-04 |
 5 | Milo | pics/milo.jpg | DOG | MALE | Bhotia dog | 2 years | t | t | 2020-12-04 |
 6 | Archie | pics/archie.jpg | DOG | MALE | Bull dog | 3 years | t | f | 2020-12-04 |
 7 | Rocky | pics/rocky.jpg | CAT | MALE | Maine coon | 3 years | t | t | 2020-12-04 |
 8 | Ollie | pics/ollie.jpeg | DOG | MALE | Beagle | 2 years | t | t | 2020-12-04 |
```

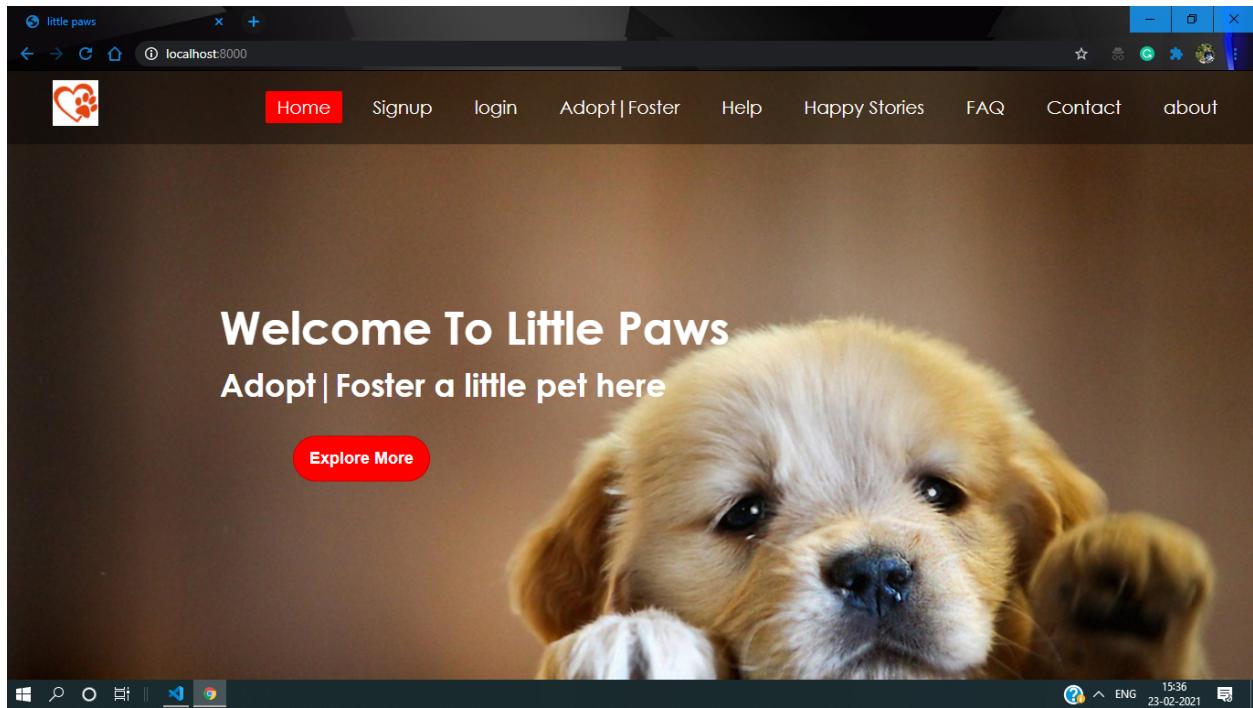
```
little_paws=# select id,question from little_paws_faq;
 id | question
---+-----
 13 | can I adopt my foster animal?
   2 | What is fostering?
   3 | Adoption or Fostering? What&#39;s right for me?
   5 | What age are the pets on the website?
   6 | What foods should I be feeding my pet?
   7 | How do I get my pet vaccinated?
   8 | How often should I see my vet?
   9 | What do I need at home to raise a pet?
 10 | Can Individuals put up animals for adoption?
 11 | How long does the adoption process take?
 12 | What if my pet gets sick after the adoption?
 14 | What happens if I can no longer care for my foster dog?
   1 | What is adoption? How is it different from buying ?
(12 rows)
```

```
little_paws=# select id,description,admin_verification from little_paws_happystories;
 id | description | admin_verification
---+-----+-----
  1 | Leo the dachshund, adopted from Upaghna | t
  2 | Hello the lab, adopted from Upaghna | t
  3 | From Cellmates To Lifemates | t
  7 | demo happy story | t
  6 | wonderful | t
  9 | demo | f
(6 rows)
```

12. Interface Designs

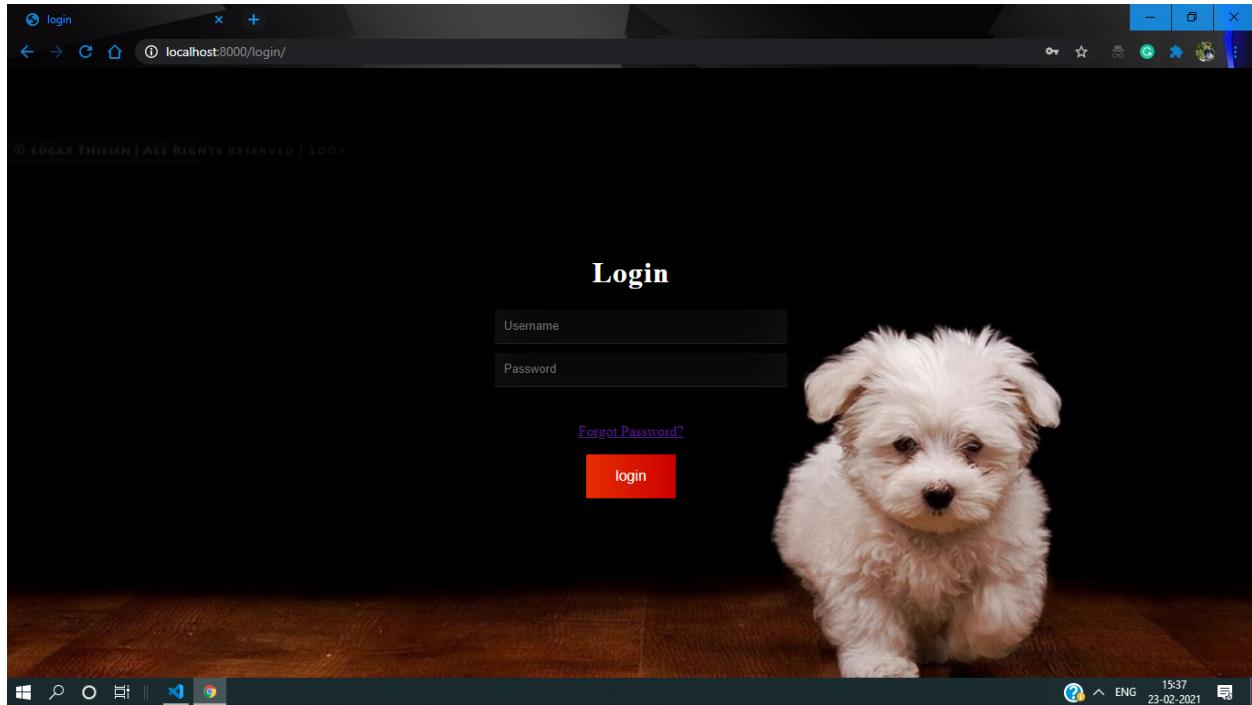
User Interface

Home Page

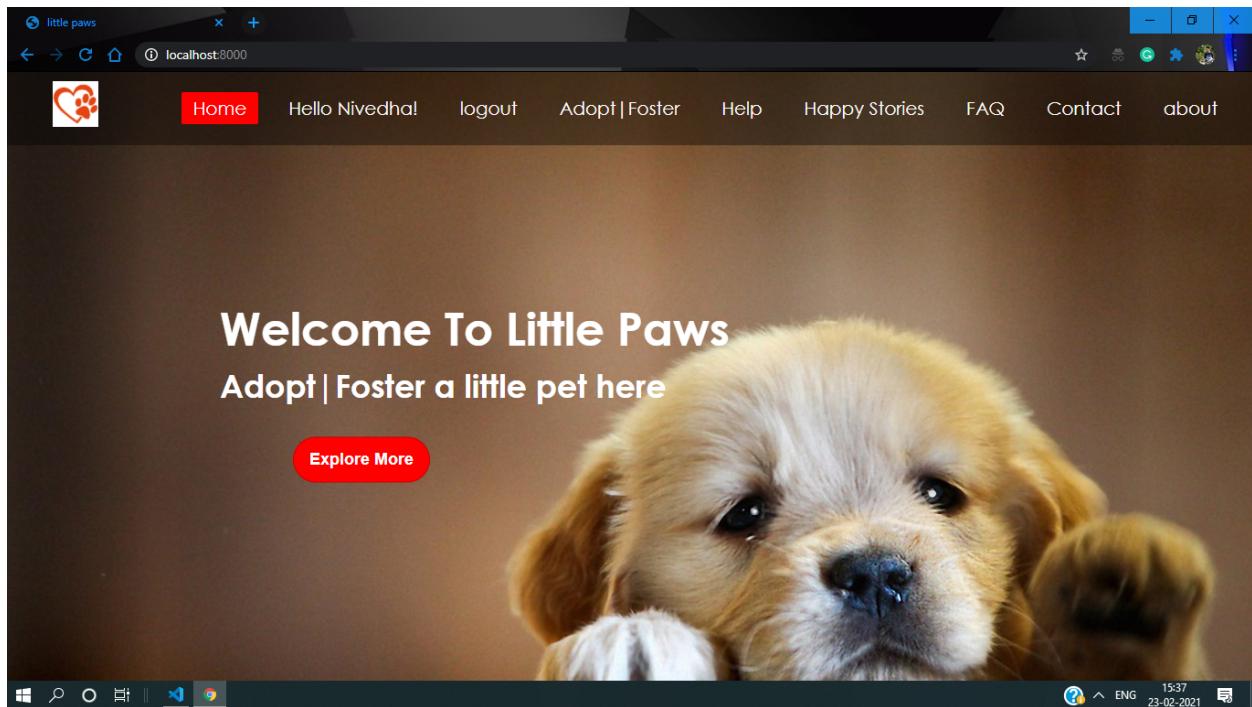


Login Page

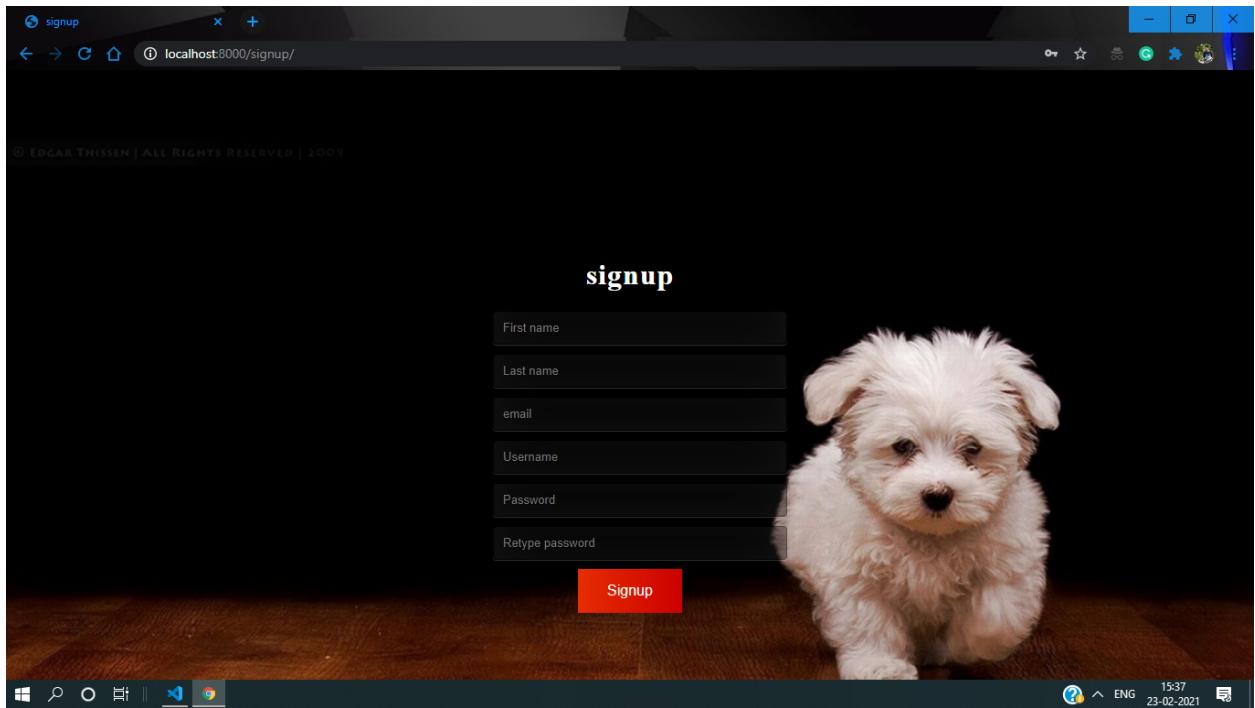
Before:



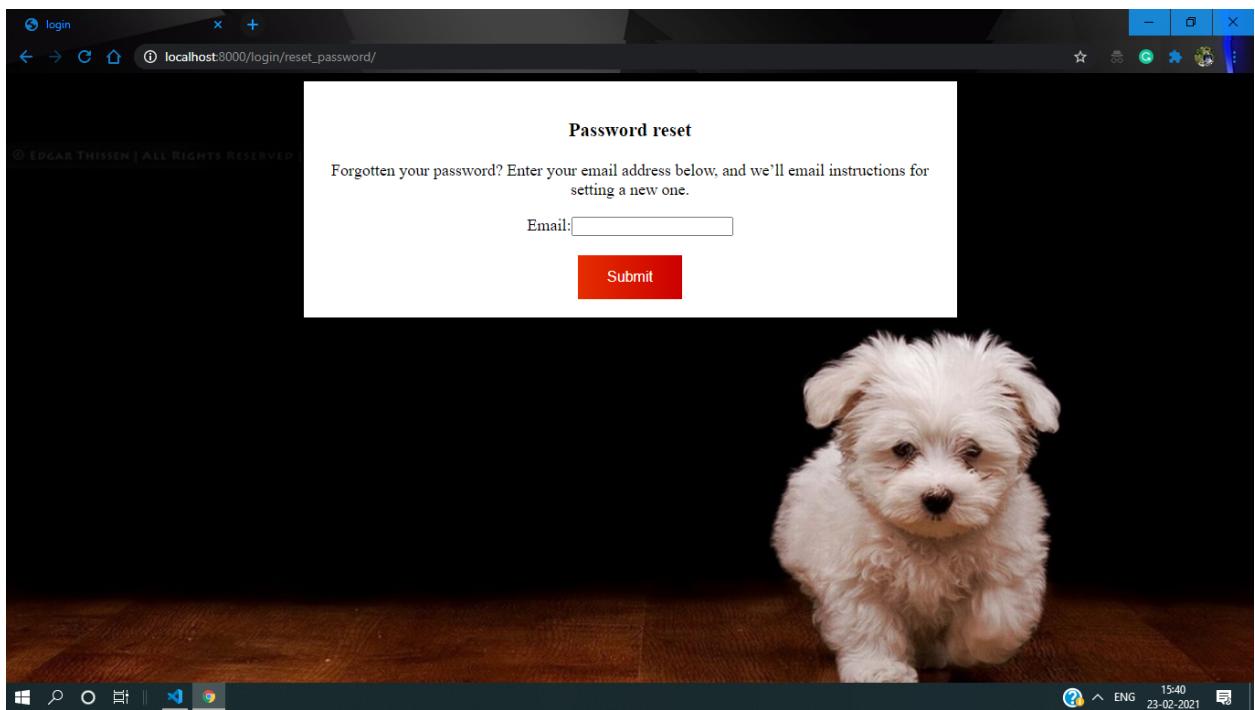
After:



Signup Page



Password Reset



Adopt/Foster Page

Screenshot of the Adopt/Foster Page:

The page title is "Adopt|Foster".

Adopt

"Saving one dog will not change the world, but surely for that one dog, the world will change forever!"



Help



In these times, fostering or adopting would be the greatest help. However, if that is not an option, you can donate food or money to local shelters, or feed strays around your home with animal-friendly food.

[Help](#)

We need your help

15:44 ENG 23-02-2021

Help Page

Screenshot of the Help Page:

The page title is "How can you help?"

Donate

"Happiness doesn't result from what we get, but from what we give."



Donations are necessary for almost all nonprofit organizations to operate, but this is especially true for animal rescue organizations and shelters. With so many homeless dogs and little to no support from the government, private donations are the backbone of these places.

Food



Perhaps you went a little crazy when you bought treats for your pet at home, and now you have extras. Whether it's cat food, dog food or just snacks, animal shelters are always in need of food! After all, there are many hungry mouths to feed!

We need your help



15:43 ENG 23-02-2021

Search Page

A screenshot of a web browser window titled "AdoptFoster". The URL is "localhost:8000/adopt_foster_cities/". The page contains a message: "Please contact the shelter ONLY if you live in the city or immediate surrounding areas and adhere to the any and all contact regulations prescribed by the shelter". Below this is a search bar with placeholder text "Search city.." and a red search button with a magnifying glass icon. A list of cities is displayed in red rectangular buttons: KODAIKANAL, BANGLORE, KOLKATA, CHENNAI, MUMBAI, and COIMBATORE. To the right of the list is a large, fluffy white puppy. The browser's status bar at the bottom shows "15:38 23-02-2021".

Pet Details

A screenshot of a web browser window titled "localhost:8000/adopt_foster_cities/petdetails/". The URL is "localhost:8000/adopt_foster_cities/petdetails/". The page features a large image of a white puppy sitting on a gravel surface. Below the image is a red button with the text "Click here to View shelter Details". To the right of the button is a summary of the pet's details: Pet name: Max, Pet type: DOG, Gender: MALE, Breed: Gaddi kutta, Age: 4 months, Available for adoption, and lastmodified: Dec. 4, 2020. At the bottom of the page is another smaller image of a brown puppy. The browser's status bar at the bottom shows "15:39 23-02-2021".

Happy Stories

The screenshot shows a web browser window with two main sections. On the left, there is a sidebar containing a list of stories:

- Leo the dachshund, adopted from Upaghna
- Hello the lab, adopted from Upaghna
- From Cellmates To Lifemates
- demo happy story
- wonderful

On the right, there is a larger area with a title "write your happy story about adoption|foster here". It contains a "One line description" input field and a large text area for the story. At the bottom are "Submit" and "Close" buttons.

FAQ Page

The screenshot shows a web browser window with a sidebar on the left listing various FAQ questions:

- can I adopt my foster animal?
- What is fostering?
- Adoption or Fostering? What's right for me?
- What age are the pets on the website?
- What foods should I be feeding my pet?
- How do I get my pet vaccinated?
- How often should I see my vet?
- What do I need at home to raise a pet?
- Can Individuals put up animals for adoption?
- How long does the adoption process take?

On the right side of the screen, there is a small image of a white, fluffy puppy sitting on a dark surface.

Contact Us

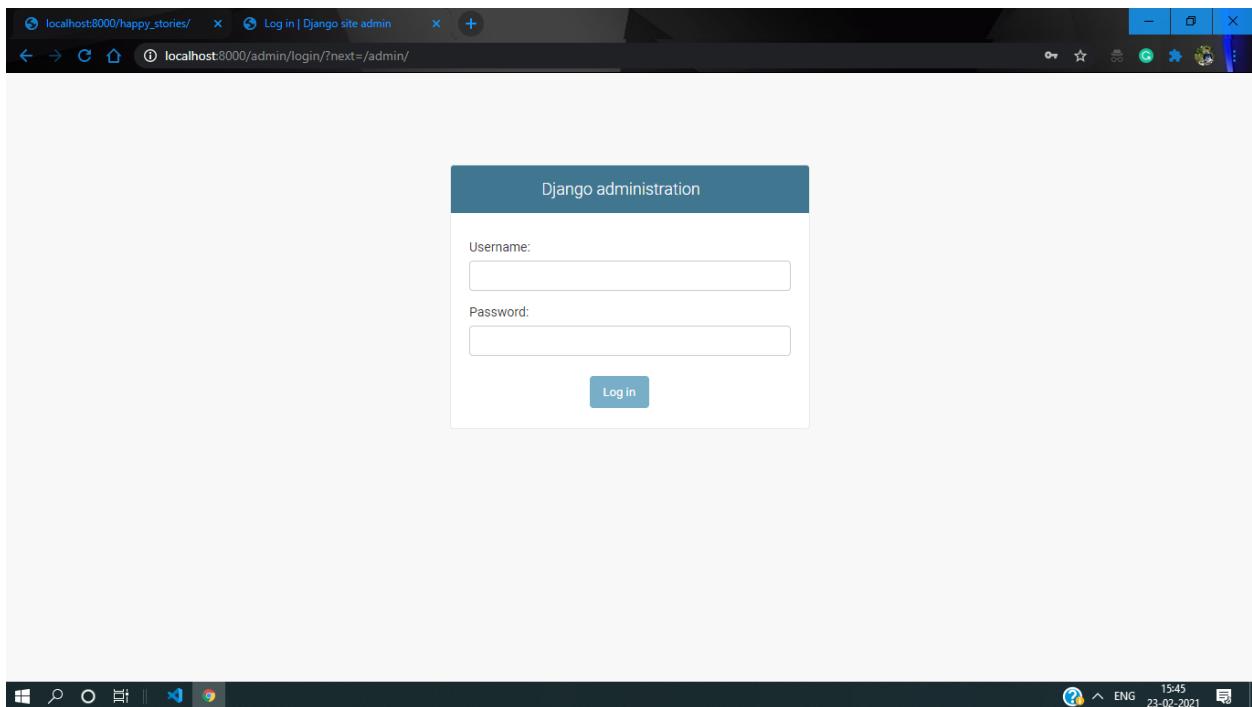
The screenshot shows a web browser window titled "Contact" with the URL "localhost:8000/contact/". At the top, there is a navigation bar with icons for back, forward, search, and refresh. Below the title, a small copyright notice reads "© EDGAR THIJSSEN | ALL RIGHTS RESERVED | 2009". The main content area has a dark background featuring a white puppy sitting on a wooden floor. The word "Contact" is centered at the top of the content area. Below it is a text block: "If you are an organisation, become a part of our family. Send us a message using this form and we'll get back to you." There are four input fields: "Organisation Name", "Organisation Email", "Phone number", and "Message", each with a placeholder text. A red "Submit" button is located below the message field. The bottom of the screen shows a Windows taskbar with various icons and system status information.

About Us

The screenshot shows a web browser window titled "About" with the URL "localhost:8000/about/". The interface is similar to the contact page, with a dark header and a large image of a puppy in the background. The main content area contains the heading "About Us" followed by a paragraph of text: "Little paws is an online, searchable database of animals who need homes. Hundreds of pets are abandoned and rescued in India everyday. Although there are many wonderful souls across the nation who work extra hours and put in efforts beyond their capacity, there is always a shortage of funding and communication across the animal activist circuit." To the right of this text is another paragraph: "It's a way of giving a loving new home to a shelter animal – and maybe even saving its life. There are many different animal care issues to consider during the adoption process, but it will all be worthwhile when the new owner goes home with their adopted pet. Every Pet deserves a loving home. Help us spread the word about the life-changing experience of adoption." The bottom of the screen shows a Windows taskbar with system status information.

Administrator's Interface

Login Page



Site Administration

A screenshot of the Django site administration interface. The title bar shows the URL as `localhost:8000/admin/`. The main content area has a dark blue header with the text "Django administration" and "WELCOME, NIVEDHA" followed by links for "VIEW SITE / CHANGE PASSWORD / LOG OUT". The left side features a sidebar with several sections: "ACCOUNTS" (Organistaion_contacts), "AUTHENTICATION AND AUTHORIZATION" (Groups, Users), "LITTLE_PAWS" (Faqs, Happystories), and "LITTLE_PAWS_ADOPT_FOSTER" (Petdetailss, Registeredcitiess, Registeredshelters). Each section contains a "Add" and "Change" button. To the right, there are two panels: "Recent actions" (listing recent log entries) and "My actions" (listing recent log entries). The bottom right corner shows a Windows taskbar with icons for search, file explorer, and other applications, along with system status indicators like battery level and date/time.

FAQ

The screenshot shows the Django admin interface for a 'faq' entry. The left sidebar has sections for ACCOUNTS (Organistaion_contacts), AUTHENTICATION AND AUTHORIZATION (Groups, Users), LITTLE_PAWS (Faqs, Happystories), and LITTLE_PAWS_ADOPT_FOSTER (Petdetailss, Registeredcitiess, Registeredshelterss). The main content area is titled 'Change faq' and shows a question 'can I adopt my foster animal?' with an answer text area containing: 'Yes, so long as we all feel it makes sense. But keep in mind that adopting your foster animal may mean that you can no longer foster. As an adopter, you may only be able to save one animal's life, but as a foster parent, you have the potential to help dozens of animals.' At the bottom are buttons for Delete, Save and add another, Save and continue editing, and a large blue 'SAVE' button.

Happy Stories

The screenshot shows the Django admin interface for a 'Happystories' entry. The left sidebar has sections for ACCOUNTS (Organistaion_contacts), AUTHENTICATION AND AUTHORIZATION (Groups, Users), LITTLE_PAWS (Faqs, Happystories), and LITTLE_PAWS_ADOPT_FOSTER (Petdetailss, Registeredcitiess, Registeredshelterss). The main content area is titled 'Change happystories' and shows a description 'demo' and a happy story 'demo'. There is a checkbox for 'Admin verification'. At the bottom are buttons for Delete, Save and add another, Save and continue editing, and a large blue 'SAVE' button.

Registered Cities

The screenshot shows the Django administration interface for adding a new registered city. The left sidebar lists various models: ACCOUNTS (Organistaion_contacts), AUTHENTICATION AND AUTHORIZATION (Groups, Users), LITTLE_PAWS (Faqs, Happystorieds), and LITTLE_PAWS_ADOPT_FOSTER (Petdetails, Registeredcitiess, Registeredshelters). The 'Registeredcitiess' model is currently selected and highlighted in yellow. The main content area is titled 'Add registeredcities' and contains a single input field labeled 'City name:' with an empty text box. At the bottom right are three buttons: 'Save and add another', 'Save and continue editing', and a larger 'SAVE' button.

Registered Shelters

The screenshot shows the Django administration interface for adding a new registered shelter. The left sidebar lists the same models as the previous screenshot. The 'Registeredshelters' model is selected and highlighted in yellow. The main content area is titled 'Add registeredshelters' and includes four form fields: 'Shelter name:' (empty text box), 'Shelter city:' (dropdown menu showing a list of cities with 'Banglore' selected), 'Shelter location:' (empty text box), and 'Shelter email:' (empty text box). A 'Shelter contact number:' field is also present with an empty text box. A dropdown menu for 'Shelter city:' shows the following options: kodaikanal, Bangalore, Kolkata, Chennai, Mumbai, Coimbatore, Pondicherry, Hyderabad, Kochi, and Raipur. At the bottom right are three buttons: 'Save and add another', 'Save and continue editing', and a larger 'SAVE' button.

Pet Details

The screenshot shows the Django administration interface for the 'Petdetails' model. The left sidebar lists various models: ACCOUNTS (Organistaion_contacts), AUTHENTICATION AND AUTHORIZATION (Groups, Users), LITTLE_PAWS (Faqs, Happystories), and LITTLE_PAWS_ADOPT_FOSTER (Petdetailss, Registeredcitless, Registeredshelters). The 'Petdetailss' model is selected and highlighted in yellow. The main content area is titled 'Add petdetails' and contains fields for Pet name (text input), Pet image (file upload, currently 'No file chosen'), Pet shelter name (dropdown menu), Pet type (dropdown menu), Pet gender (dropdown menu), Pet breed (text input), and Pet age (text input). Below these fields are two checked checkboxes: 'Available for adoption' and 'Available for foster'. At the bottom right are three buttons: 'Save and add another', 'Save and continue editing', and a large blue 'SAVE' button.

13. Conclusion

This document is focused on outlining the software design behind our planned implementation for the web app inspired by our project goal. Specifically, the document covers implementation and architectural overview in order to provide a big picture description and high-level details respectively regarding our software design plans. The document also includes a description for each of the modules which constitute the interfaces involved in the software architecture of the web app.

