

Inge's Animal Haven

Background

After many years of caring for animals on her own, Inge has decided to open up a shelter. For now, she is only able to care for cats and dogs but might one day expand to other animals such as birds, lizards, or even horses! Inge is looking for some help building software to help her manage the shelter and thinks that your team has got what it takes to make her dreams a reality!

User Access

Inge will have many people helping her with the shelter. Some are volunteers, but she also plans to have a few employees. Volunteers can update information about animals but cannot enter new information for animals and cannot perform adoptions or surrenders. Employees are able to handle entering adoption information and surrender information, as they are required to handle surrenders and adoptions. Inge can do everything, but also is the only person who can mark adoption applications as approved and can view reports. (This could change, where others might also perform her duties, as Inge's husband is recently retired and might help her out in the future.)

Users will login with a username that is unique to them and a password. You may optionally secure the storage of passwords using salting and hashing. For each user, you will also keep track of their first name, last name, an optional email address, and the date they started working or volunteering at the shelter. For volunteers, phone numbers are stored in case someone needs to reach them.

Volunteers will also track the hours worked at the shelter. (Employees already utilize a timeclock, so they will not enter them into this system.) This can be as simple as entering the number of hours per date, for example, volunteer Jim Smith worked 2 hours on 1/14/2020. You do not need to keep track of volunteer schedules or volunteer shift signups.

Animals

Inge's currently has a limit and can only shelter 30 cats and 15 dogs at any time. These limits will need to be adjustable as needed or as the shelter expands.

The following attributes must be tracked for each animal. If not otherwise specified, they are required.

- Name
- Species
 - This should be limited to choosing "Cat" or "Dog", but do not hard-code these values – they should be kept somewhere updatable so that additional species can be added when needed.
- Breed
 - The appendix will contain a listing of breed choices for each species. Mixed breed animals may have multiple breeds chosen. In addition, "Unknown" or "Mixed" may be chosen as the only breed (in other words, choosing those prevents choosing more than one breed). If and only if "Unknown" or "Mixed" are chosen, the breed of the animal can be updated in the future.
 - Whenever an animal has been assigned multiple breeds and it is displayed, such as in reports, they should be concatenated into a single value, delimited with a forward slash (/). The combination of breed names should be in alphabetical order, such as "Affenpinscher/Poodle/Vizsla".
 - Again, it would not be wise to hard code these values as they may be updated in the future.

- Sex
 - Choices can be “Male”, “Female”, or “Unknown”. In the case of “Unknown”, this can be updated, but other values cannot.
- Alteration status
 - Also known as neutered (for males) or spayed (for females). However, the sex of the animal should not matter for this attribute.
 - Note that an animal cannot be adopted until it has been spayed or neutered.
- Age
 - Remember that some animals may be less than a year old, which necessitates knowing how many months old they are.
- Description
 - This could include a description of the animal, any health concerns, and other miscellaneous details.
- Microchip IDs
 - Not all animals will have a microchip, so this value is optional. Microchip numbers are globally unique, but vary from vendor to vendor and may be a number or an alphanumeric ID. Because of this, all microchip values should also be unique in the database.
- Vaccinations
 - This is covered further in the vaccinations section.
- Surrender date
- Surrender reason
- Surrendered by animal control
- Pet ID
 - This is an ordinal number assigned by the system, in essence, the first animal entered will be 1, the second entered 2, etc.

When adding an animal, all attributes must be editable. However, a current animal can only have the values changed for sex (only if “unknown”), microchip, and breed (only if “Unknown” or “Mixed” are the current breed). Updates to vaccination data are covered further under the “Vaccinations” section.

Surrenders

Sadly, most animals are surrendered to the shelter by their current owner. Inge’s does not require collecting contact information from the person making the surrender but does ask the reason for the surrender and for any other information regarding vaccinations and microchips. For auditing purposes, the system needs to keep track of who originally entered the animal’s information.

Occasionally an animal may be brought in by the local animal control department, and this must be tracked for reporting purposes.

Vaccinations

Each animal species requires a certain set of vaccinations before an animal can be placed for adoption. There are also optional vaccinations. The following attributes are associated with a vaccine:

- Vaccine type (e.g., rabies, distemper, etc.)
- Required for adoption (varies by species)

When a vaccine is administered, you must keep track of the following:

- Date Administered
- Expiration Date (or date of next required dose)
- Optional vaccination number (such as a rabies tag number)

In the case of surrendered dogs, information about vaccinations will be entered when they are surrendered. Any vaccine entry should also contain the user information of whomever entered it.

The system should not allow you to enter a vaccine that is not yet due for an animal or that they have already been given. Vaccinations are listed in the appendix. Since it's possible for new vaccines to be developed, the list of vaccines in the system should be updatable, but this can be done by a DBA and no user interface is required to perform any updates to vaccines.

Adoptions

Inge has a slightly unusual adoption process. Applications are filled out on paper, however, only the contact information for the adopter's household will be entered into the system. Employees will enter this information as applications are received. Contact information includes:

- Application number
 - This is an ordinal number assigned by the system, in essence, the first application entered will be 1, the second entered 2, etc.
- Applicant first name and last name
- Optional co-applicant first name and last name
- Address (street, city, state, zip code)
- Phone number
- Email address
- Date of application

Any other application details will not be entered into the system but can be found by referring to the paper application.

All adoption applications have a default state of "pending approval". Inge will personally review paper applications, and if she likes what she sees, approve the application, marking it in the database as "approved", otherwise the application will be marked as "rejected".

When a pet is available for adoption, Inge will contact approved applicants and find one who is willing to adopt. The system will not try to do any matching for her. Inge expects she will match animals to adopters mostly in her head and contact them to find out if they are interested in the animal. Once Inge has found an adopter for the animal and they accept her offer, she or an employee will enter the adoption details into the system when the adoption occurs, which includes these attributes:

- The associated animal
- The associated application
- Adoption date
- Adoption fee
 - This is determined by Inge on a case-by-case basis

An adopter may apply to adopt more than one animal, but we do not expect animals to be surrendered to Inge's more than once.

User Interface

Logging In

As mentioned, all users will need to login using a username and password. The system should provide appropriate feedback if incorrect login information is entered. After a successful login, the user will be taken to the Animal Dashboard.

Animal Dashboard

The primary interface for the application should be a dashboard that shows all animals currently in the shelter. The dashboard should list the animal's name, species, breed, sex, alteration status, age, and adoptability status. You should incorporate a mechanism for the user to filter the dashboard by species and an additional filter by adoptability status. Optionally, you may allow the user to sort the dashboard by any of the attributes displayed. Clicking on the animal's name will display the animal detail screen which will be described further on. If Inge's currently has capacity for additional animals, the number of available spaces is also displayed, and if the user has appropriate permissions, an "Add Animal" button or link should be made available. If the user also has appropriate permissions, an "Add Adoption Application" button or link should be visible.

Add Animal

This screen will require the entry of all values specified in the "Animals" section of this document. Note that there are different limits per species, so the system can only allow adding a species for which there is space available. Once submitted, the user will be taken to the animal detail screen so that any additional information can be entered.

Animal Detail

This detail screen will show all the information available for an animal, as described in the "Animals" section. In addition, there should be a "Vaccinations" section which shows any vaccination history. For an animal not yet adopted, this section will allow for adding vaccinations. If the user has appropriate permissions, and the animal is eligible for adoption, an "Adopt Pet" button or link should be made available.

Vaccinations

When the details for an animal are viewed and the user chooses to add a vaccination, this screen will display a list of vaccines the animal is eligible for in a dropdown. Once the vaccine is chosen, the user can enter the vaccination date, next dose date, and optional vaccine/tag number and submit the information into the system.

Adoption

When a pet is going to be adopted, the adoption needs to be entered in the system and will be done by loading this screen from the "Animal Detail" screen and clicking "Add Adoption".

The user will first be prompted to look up an approved adopter via a search dialog that will allow them to search on any part of both the applicant last name and the co-applicant last name. The results list should include all contact information to allow the user to see they are choosing the right adopter. After choosing the adopter from the search results, the user is prompted to enter the adoption date and adoption fee, and can then submit the adoption into the database.

Add Adoption Application

Also accessible from the animal dashboard, this screen will allow the user to enter the contact information for a new adoption application. When submitted, the system will display to the user the application ID that has been assigned.

Adoption Application Review

If Inge is logged in, this screen will list any applications pending approval, and provide her with a mechanism to mark the application as approved or rejected. Inge will need to access this via a link or button that appears on her Animal Dashboard.

Reports

Inge would like a few reports to help her run the shelter more efficiently. If she's logged in, a link to access the reports should be made available from the Animal Dashboard.

Animal Control Report

The auditors at animal control are interested in two things: the number of animals surrendered by them in a month, and also any animals adopted in that month that were in the rescue for 60 or more days. This report, when run, will include the current month and the previous six months, and will display the count of animals turned over by animal control, and the count of any animals adopted that month who were in the rescue for 60 or more days. (The results for the current month should reflect information up to the date the report has been run.) Each count should allow pulling up a drill down report for that month, which will identify the animals from each category, listed separately. The information for each animal will include pet ID, species, breed (in the case of an animal with multiple breeds, remember that breeds should be combined into a single value in alphabetical order), sex, alteration status, microchip ID, surrender date, and for animals in rescue for 60 or more days before adoption, the number of days they were in rescue. The listing of animal control surrenders should be sorted by pet ID ascending, while the listing of animals over 60 days before being adopted should be listed by number of days in rescue descending.

Volunteer of the Month

Inge would like to be able to show her appreciation of her volunteers by emailing them small gift cards to places such as Starbucks and wants a report that will make it easier to provide this recognition. This report will allow choosing any combination of month and year, constrained to the months and years having data in the database.

For a selected month, the top 5 volunteers by total hours volunteered for that month will be provided in this report. Their first name, last name, email address, and number of hours volunteered will be displayed, ordered by total hours descending, followed by last name ascending in the event that there is a tie.

Monthly Adoption Report

Inge would like to monitor the dynamics of the adoption business by tracking the number of animals surrendered and adopted each month. This report should show the numbers for each month for the last 12 months (starting from the previous month) displaying summaries for each breed, grouped and subtotaled by species, with details shown in a separate row of the table, and monthly information displayed columnwise. Only breeds and species adopted during the 12 month period should be displayed. The table should be sorted by species name alphabetically (A-Z) followed by breed name alphabetically (A-Z, in the case of an animal with multiple breeds, remember that breeds should be combined into a single value in alphabetical order). If a breed (or combination of breeds) has data in one month, but none in another, that cell should left blank and no values (such as "0") displayed.

Volunteer Lookup

This will be more of a utility than a report – in the event a volunteer needs to be contacted, this report will allow an entry for first name and/or last name and return any results whose values contain the criteria. An entry of last name for "Jon" would return "Jonson", "Jonstone", "Jonsdottir", etc. The results should display the volunteer's first name, last name, email address, and phone number, sorted by last name ascending and first name ascending.

Vaccine Reminder Report

For vaccinations due in the current and next three months provide vaccination type, vaccination due date, pet ID, species, breed (in the case of an animal with multiple breeds, remember that breeds should be combined into a single value in alphabetical order), sex, alteration status, microchip ID, surrender date, and the first name and last name of the user who recorded the last vaccination of this type for this animal. Sort the data in the ascending order of the vaccination due date (most recent date to latest date) and by pet ID ascending.

Appendix

Breeds

Cats

Abyssinian	Chartreux	LaPerm	Scottish Fold
Aegean Cat	Cornish Rex	Li Hua	Selkirk Rex
American Bobtail	Cymric	Maine Coon	Siamese
American Curl	Devon Rex	Manx	Siberian
American Shorthair	Egyptian Mau	Munchkin	Singapura
American Wirehair	Exotic Shorthair	Norwegian Forest Cat	Somali
Balinese	Havana Brown	Ocicat	Sphynx
Bengal	Himalayan	Oriental	Tonkinese
Birman	Japanese Bobtail	Persian	Toyger
Bombay	Javanese	Pixiebob	Turkish Angora
British Shorthair	Korat	Ragamuffin	Turkish Van
Burmese	Kurilian Bobtail	Russian Blue	
Burmilla	Ragdoll	Savannah	

Dogs

Affenpinscher	Boykin Spaniel	Finnish Spitz	Manchester Terrier	Schnoodle
Afghan Hound	Bracco Italiano	Flat-Coated Retriever	Mastiff	Scottish Deerhound
Airedale Terrier	Briard	Fox Terrier	Miniature American Shepherd	Scottish Terrier
Akbash Dog	Brittany	French Bulldog	Miniature Bull Terrier	Sealyham Terrier
Akita	Brussels Griffon	German Pinscher	Miniature Pinscher	Shetland Sheepdog
Alapaha Blue Blood Bulldog	Bull Terrier	German Shepherd Dog	Miniature Schnauzer	Shiba Inu
Alaskan Husky	Bulldog	German Shorthaired Pointer	Mudi	Shih Tzu
Alaskan Malamute	Bullmastiff	German Spitz	Neapolitan Mastiff	Shihpoo
American Bulldog	Cairn Terrier	German Wirehaired Pointer	Newfoundland	Siberian Husky
American Eskimo	Canaan Dog	Giant Schnauzer	Norfolk Terrier	Silken Windhound
American Foxhound	Cane Corso	Glen of Imaal Terrier	Norwegian Buhund	Silky Terrier

American Pit Bull Terrier	Cardigan Welsh Corgi	Golden Retriever	Norwegian Elkhound	Skye Terrier
American Staffordshire Terrier	Catahoula Leopard Dog	Goldendoodle	Norwegian Lundehund	Sloughi
American Water Spaniel	Caucasian Ovcharka	Gordon Setter	Norwich Terrier	Small Munsterlander Pointer
Anatolian Shepherd Dog	Cavalier King Charles Spaniel	Great Dane	Nova Scotia Duck Tolling Retriever	Soft Coated Wheaten Terrier
Aussiedoodle	Cavapom	Great Pyrenees	Old English Sheepdog	Spanish Greyhound
Australian Cattle Dog	Cavapoo	Greater Swiss Mountain Dog	Otterhound	Spanish Water Dog
Australian Kelpie	Cesky Terrier	Greyhound	Papillon	Spinone Italiano
Australian Shepherd	Chart Polski	Harrier	Pekeapoo	Sprollie
Australian Terrier	Chesapeake Bay Retriever	Havanese	Pekingese	Staffordshire Bull Terrier
Azawakh	Chihuahua	Ibizan Hound	Pembroke Welsh Corgi	Standard Schnauzer
Basador	Chinese Crested	Icelandic Sheepdog	Perro de Presa Canario	Sussex Spaniel
Basenji	Chinese Shar-Pei	Irish Red and White Setter	Peruvian Inca Orchid	Swedish Lapphund
Basset Bleu de Gascogne	Chinook	Irish Setter	Petit Basset Griffon Vendeen	Swedish Vallhund
Basset Hound	Chow Chow	Irish Terrier	Pharaoh Hound	Thai Ridgeback
Beagle	Chug	Irish Water Spaniel	Plott	Tibetan Mastiff
Bearded Collie	Cirneco dell'Etna	Irish Wolfhound	Pointer	Tibetan Spaniel
Beauceron	Clumber Spaniel	Italian Greyhound	Polish Lowland Sheepdog	Tibetan Terrier
Bedlington Terrier	Cockapoo	Jack Russell Terrier	Pomapoo	Tosa Ken
Belgian Laekenois	Cocker Spaniel	Japanese Chin	Pomeranian	Toy Fox Terrier
Belgian Malinois	Collie	Keeshond	Pomsky	Toy Poodle
Belgian Sheepdog	Coton de Tulear	Kerry Blue Terrier	Poodle	Treeing Walker Coonhound
Belgian Tervuren	Curly-Coated Retriever	Komondor	Portuguese Podengo	Vizsla
Bergamasco	Dachshund	Kooikerhondje	Portuguese Water Dog	Volpino Italiano
Berger Picard	Dalmatian	Kromfohrlander	Pug	Weimaraner
Bernese Mountain Dog	Dandie Dinmont Terrier	Kuvasz	Pugapoo	Welsh Springer Spaniel
Bichon Frise	Doberman Pinscher	Labradoodle	Puggle	Welsh Terrier

Black and Tan Coonhound	Dogo Argentino	Labrador Retriever	Puli	West Highland White Terrier
Black Russian Terrier	Dogue de Bordeaux	Lacy Dog	Pumi	Whippet
Bloodhound	Doxiepoo	Lagotto Romagnolo	Pyrenean Shepherd	Wirehaired Pointing Griffon
Blue Picardy Spaniel	English Cocker Spaniel	Lakeland Terrier	Rat Terrier	Wirehaired Vizsla
Bluetick Coonhound	English Foxhound	Large Munsterlander	Redbone Coonhound	Xoloitzcuintli
Boerboel	English Setter	Leonberger	Rhodesian Ridgeback	Yorkipoo
Bolognese	English Springer Spaniel	Lhasa Apso	Rottweiler	Yorkshire Terrier
Border Collie	English Toy Spaniel	Lhasapoo	Russian Toy	Mixed
Border Terrier	Entlebucher Mountain Dog	Longdog	Saint Bernard	Unknown
Borzoï	Eurasier	Lowchen	Saluki	
Boston Terrier	Field Spaniel	Lurcher	Samoyed	
Bouvier des Flandres	Fila Brasileiro	Maltese	Schapendoes	
Boxer	Finnish Lapphund	Maltipoo	Schipperke	

Vaccine Types

Species	Vaccine	Required for Adoption
Cat	Bordetella	No
Cat	Feline Calicivirus	Yes
Cat	Feline Chlamydia	No
Cat	Feline Herpes	Yes
Cat	Feline Immunodeficiency	No
Cat	Feline Leukemia	Yes
Cat	Feline Panleukopenia	Yes
Cat	Rabies	Yes
Dog	Bordetella	No
Dog	Canine Adenovirus-2	Yes
Dog	Canine Influenza	No
Dog	Coronavirus	No
Dog	Distemper	Yes
Dog	Leptospirosis	Yes
Dog	Lyme Disease	No
Dog	Parainfluenza	No
Dog	Parvovirus	Yes
Dog	Rabies	Yes