ANIMAL CARE HEALTH AND ADOPTION PROJECT

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1 Introduction

1.1 What the Problem is

An animal shelter is needing an interface that will allow adoption of animals,some people who care for animals health is wishing an emergency hospital for animals that allows veterinarians and needy animals unite and some people who are looking for new owners or keepers for their animals is also wanting an interface to find appropriate candidates. The users has the ability to register and log in to the System and track their animals states. The System will be responsive, allowing for the users to view it on any device, from tablets to mobile phones and desktop computers.Wants to Own Users should be able to view all the animals that available to adopt.Normal users should be able to inform the authorities by entering The System and sharing the needy animals location.Veterinarians who wants to be volunteer for the system can also be enter the system and after validation they can be take part to healing the injured animals. Keeper User should be able to choose amongst the animals that they wanted to take care in their available time.Animal Owners should be able to find caretaker for their animals when they are needed to be in another occasion or they should be able to find decent aspires for their animals.

1.2 Goals for the Project

Subject of the project are animals. The project is about animal care, health and adoption. The System ensures that veterinarians are informed in order to heal injured animals that need help in our environment. The person who saw the injured animal will enter the address where the animals is located and inform veterinarians. People who want to adopt the animals can choose the animal that suitable for them . Animal owners temporarily give their animals to an animal keeper or permanently give their animals to people who wish to have an animal. They can also rate animal keepers according to their performances. Animal keepers take care of the animals given to them according to the day limit.

1.3 Stakeholders

When it comes to our software several different types of stakeholders can be noted.Those responsible for the project can be called the first stakeholders. They design the System in line with the requirements and prepare it in a planned and controlled manner.Team members produce the most correct form of software by sharing ideas. Therefore,they create a system that users can easily access and benefit from.

The most important stakeholders of our project are its members who use this interface.Because there is no need for another person or situation between this system and the user. Anyone who needs and is a member of the system can use this application as they wish. It is a very useful system for those who want to help injured

or needy animals, those who want to own animals, or those who seek animal keepers for their animals. It is among the stakeholders of this project in animals that are positively affected by this application, thanks to system users. As stated by the users, animals who are in need of help,injured or sick regain their health thanks to this system.

Another stakeholders are competent authorities and municipalities, which check whether the system works regularly. The reality of the events developing on the system is important for these institutions.

1.4 Motivation for the Project

Our team have developed a system that allows people who want to help the animals and animals in the environment to be reached through the same system . To develop such a system that would not only ease the burden on the animal lover, but the veterinarians . Our team has an immense amount of knowledge when it comes to problem solving, programming and communication. Each one of us will always and will continue to give 100% and more to making the transition a breeze for the animal care, health, and adoption service.Also, having multiple heads working on the programming abilities helps in ensuring no errors are implemented and every single detail is put in place.

1.5 Process Flow Preview

We plan to take a recursive routine for our process flow, as we find communication necessary throughout the development process. In order to plan all aspects of the

project in detail, we felt that contacting the animal shelters and public authorities like city hall and having those in charge be in the same room when the planning is taking place. It is our way of discuss the requirements and take important notes down that will help us constructing the overall feel and idea. The modeling process that we feel on our own is not the beginning of the finishing process. There will be times when we may have to go back to certain parts of the modeling activity to provide a adequate model. If we miss something, we want to make sure that we do not figure that out in the construction phase.

Finally we find the construction framework activity that requires communication with animal shelters and other users . This will allow us to make minor adjustments and have some kind of testing process on the interaction between the configured items and those who will use the software directly. We think that allowing users to see how the software is made will facilitate the transition during the distribution phase.

2 Analysis and Design

2.1 Plan for Requirements Engineering

Inception Task:

The initial goal is to identify the business case created by the stakeholders. We want to grasp the necessity of the system, analyze how often the software will be used and to ensure that the final product can handle the demands of all shelters,municipalities and users. These are just a few questions we asked to the stakeholders. With this in mind, we have considered that people responsible for the project may have different perspectives on who the targets consumers are, because some are more likely to be in direct contact with them and the others may have expectations. To have a basic understanding of the project, here are a few other questions we asked:

What are the basic functions? (What do you want the system and software to do? - What tasks/problems is the product supposed to accomplish?)

What sort of demands are you wanting to be fulfilled with this new system? (Who is going to use it?) Can you show us the environment where this software will be implemented?

Will there be any issues or constraints that may affect the planning and construction? Are there any other people you suggest we ask these questions to?

Is there anything else you want to add?

Elicitation Task:

Our aim at this stage is to identify the problem, offer solutions, and talk amongst each other about different approaches. Team members try to find the most suitable progress by holding meetings. The plan is to get a grounded idea of what the objectives are for the system, what should be accomplished, and how the overall system fits animal health and ownership.In general, lists will be created to understand who the participating stakeholders are, descriptions of the technical environment, usage scenarios and a list of requirements are currently being created.

Elaboration Task:

Information gathered from the initial and elicitation stage are brought together and refined during this stage. A model is executed that clearly shows the countless conditions of the software function and behavior. Scenarios were created to understand and help users interact with the system and how the project team members interact with the software.All features and how each function interacts with each other will be described.It must be tested whether the system works without any errors on tablets, phones and computers.

Negotiation Task:

With any dispute that will need a solution, the team and the stakeholders discuss them them to find a solution. If there are too many requirements asked by the stakeholders, we will be ensured that they are ranked according to the importance of each. Even if

most of the stakeholders are not to save time and money, anything that turns out to be the lowest requirement by everyone can be ignored.

Specification Task:

During this task, we plan to create a software requirements specification template. In this template we will note the overall purpose of the project and the target audience. Explanations regarding the operations to be done, user class working environment and design will be included. It also includes safety and security requirements, quality features, and which interfaces to use with this software.

Validation Task:

At this stage, it should be ensured that the specified requirements are clearly defined. There should be no misinterpretation and existing ones should be solved. All resources and stakeholders used in the project planning must be proved legitimate and their inputs are 100% valid for use. All requirements should be in line with the general objectives and should be easily understood. All statements that are difficult to understand should be rewritten and discussed again with the stakeholders and team members.

Requirements Management:

All changes that may occur during the project phases should be handled with clarity and carefully. Any potential changes will be discussed and determined whether the time allocated for the construction of the project will allow such a change that if it is agreed upon by the team members. Requirements Management takes place

throughout the project process because changes or alterations may occur in any case.

2.2 Functional Requirements

Hardware Requirements:

The software should be run in any desktop or laptop environment, regardless of the operating system.Maybe in the future an app of this System can be done for mobile phones and web. The basic input/output devices are keyboards and mouse nothing else is required.

User Interface - Primary Tasks:

- Allow user type selection
    - One of the options must be entered
- View animals that need help
    - When entered, it will appear on the screen.
- Search to have an animal
    - There is a system-based search. User can fill the form as they wish
- Search to find keeper
    - There is a system-based search. User can fill the form as they wish
- Allow the user to log in with his/her name,surname and usertype
    - log in display form
- Allow the user to add himself/herself
    - Display options and necessary parts for sign in

User Interface - Secondary Tasks:

- Allow user to close their account
    - Delete user information from database. It can delete itself from the system by entering the necessary info for initiate deletion.
- Allow user to view options for their usertype what they are here for
    - There is a search option for some users
- Selecting the desired time interval for animal care
    - The keeper will select the interval at any time and the appropriate animal that he/she can be look after will be displayed
- Select the desired animal type
    - Those who wants to own an animal or who wants to look for an animal for caring can use this option.
- Store customer information in the database
    - When registering, the customer will provide their information in the form - this information will be stored in the database

Company-side Software - Primary Tasks:

- Allow company workers to open and view users information
    - option to search by users name and user type.
    - Keeper users ranking.
- Track customer payments
    - displays with the user's information
- Keep and display available animals records (for injury purposes and such)
    - Searching and viewing much like with users

Company-side Software - Secondary Tasks:

- Determining the most common logins to the system.
    - algorithms behind the scenes.

2.3 Non Functional Requirements

Performance Requirements:

- Ability to keep all the data in the background
- Speedy performance / data transmission
- Ability to not confusing users informations with other users
- Have a quick recovery time if anything were to go wrong
- Accurate and efficient display on all devices

Security Requirements:

- Secure any private information transfer between the user and the System
- Prevent any potential threats such as attacks that steal the personal informations.
- Prevent third party users at the administrative level
- Avoid the animal kept in wrong hands such as murderers,maniacs.
- Prevent the users from communicating with other dangerous users.To do so people can inform the system about user backgrounds so system can ban these dangerous users such as criminals.

Quality Attributes:

- Provide a visually appealing ,user friendly environment
- Easy to see and use navigation
- Preserve readable content
- The System is trying to help the needy animals.If the timing is right the animals can be saved.

2.4 Use Cases

Use Case #1: *Notify System about injured animal*

Primary Actor: Normal Type User

Goal in Context: To inform the system when an injured animal has being seen

Preconditions: User has to share his/her location

Trigger: When normal type user saw an injured animal.

Scenario:

1, Normal Type User: Logs onto System (Enters Username/ Password)

2, Normal Type User: Press 'Report the System' Button.

3, Normal Type User: Enter location and information about animal.

Exceptions:

1. Normal Type User Username/Password incorrect:Normal Type User is sent to main page to re- enter credentials
2. Wrong entrance for location or inconsistency about entrance and location information

Priority: Essential, must be implemented

When available: First sight

Frequency of use: Couple times per day/week

Channel to actor: Animal Health Care and Adoption System

Secondary Actors: Veterinarian Type User

Channels to Secondary Actors:

1. System notifying screen

Open Issues:

1. Accuracy about location.
2. System Entrance when there aren't any internet connection.
3. How much time does the Normal Type User have on their account before an amount of time has passed before the system automatically logs them out due to inactivity?

Use Case #2: *Intervene to Injured Animal*

Primary Actor: Volunteered Veterinarian Type

Goal in Context: To help the animal on time

Preconditions: System should provide accurate info

Trigger: Check there is available any report that have been sent to the System

Scenario:

1. Volunteered Veterinarian Type Logs onto System (Enters Username/ Password).
2. Volunteered Veterinarian Type Selects "Reports" on System.
3. Volunteered Veterinarian Type Selects if there is available post near them.
4. He/She drive that location and bring the animal to the veterinarian clinic.
5. He/She try to cure the animal and switch to situation of the report to 'unavailable'.

Exceptions:

1. More than one veterinarian type user could intervene the same report.
2. Wrong entrance could be done.

Priority: Essential, must be implemented

When available: First increment

Frequency of use: Every minute of an hour

Channel to actor: Animal Health,Care and Adoption System

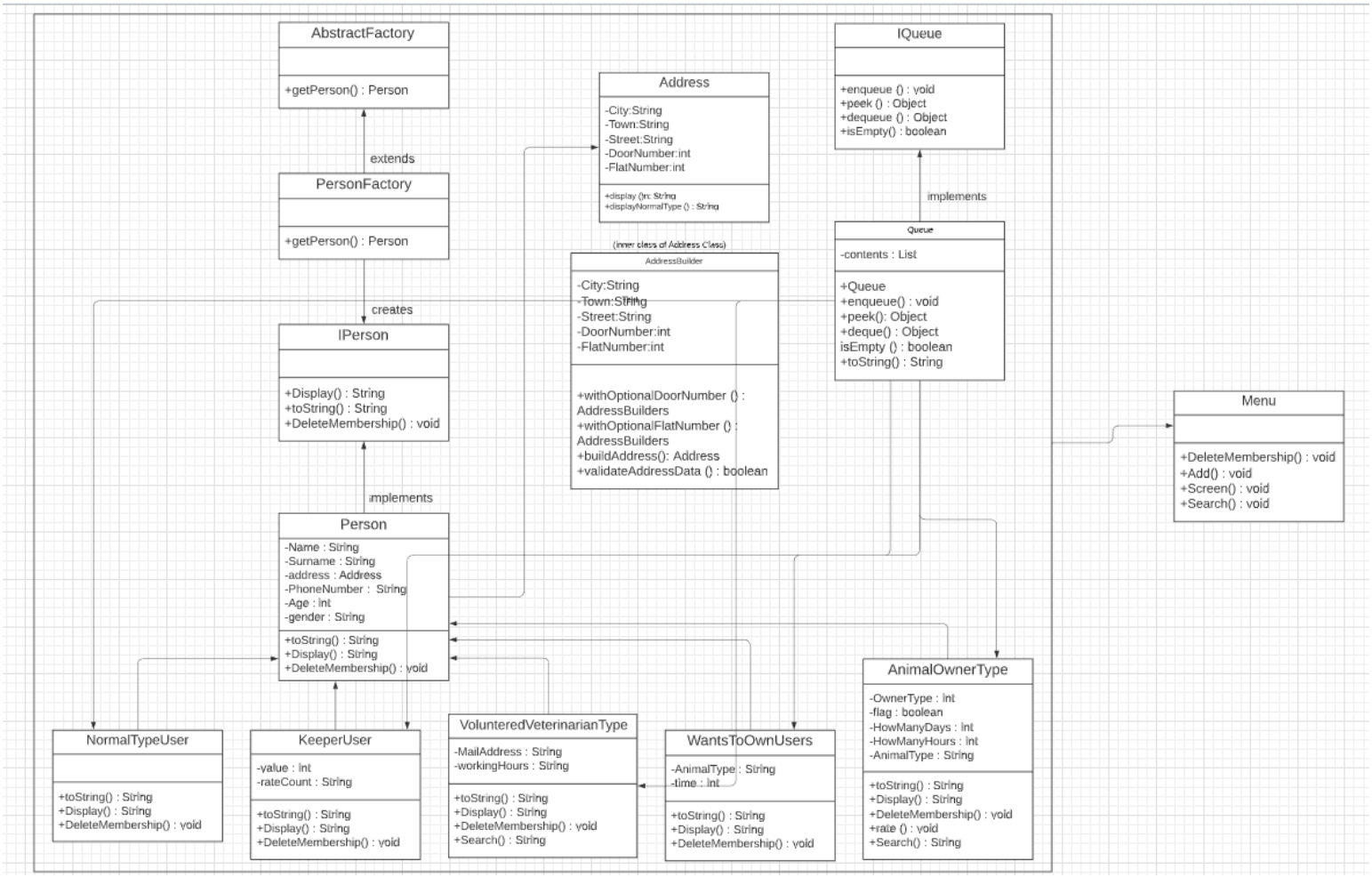
Secondary Actors: None

Open Issues:

1. How many times can a Veterinarian Type User request this service in a given period of time?
2. Insufficient resources of the veterinarian.
3. Adequateness about the healing,operating the animal.

2.5 Models

Animal Health, Care and Adoption System Class Diagram



The “Person” class will be our base class for Animal Owner Class, Normal Type Users Class, Volunteered Veterinarian Class, Wants to Own Users Class and Keeper Class. So all these classes will inherit the Person class and will become sub-classes. Because of the inheritance they will have attributes and methods of the base class as we see in the class diagram. Address class will be related with the both base class and the sub-classes.

The class diagram of the project made using the Abstract Factory design pattern is like this. The Abstract Factory design patter was made over the Person class.The class described as a AbstractFactory class includes the getPerson method of Person type. A class was created in the

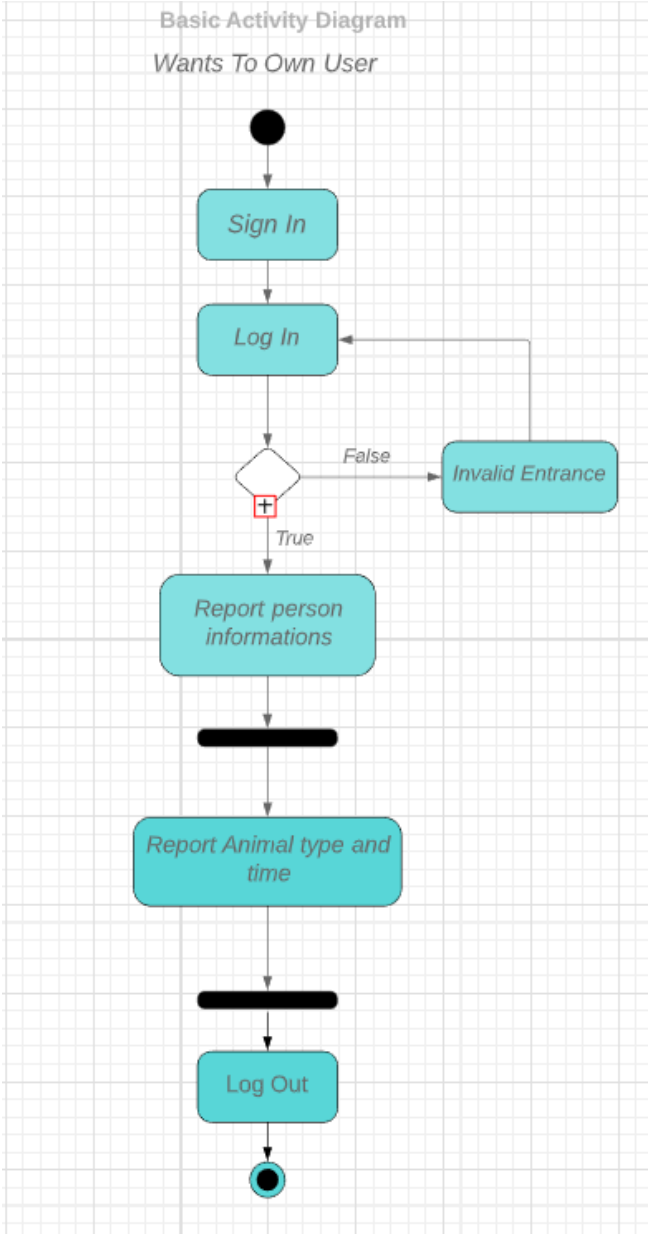
PersonFactory class and the Abstract Factory class was extended to this class.The method of getPerson of the type Person from the AbstractFactory class has been filled.Classes that have been implemented from the Person class have been returned in the type of Person according to the situation in which cases they have to be created. In the class we will process, we create objects only once in the PersonFactory type and according to the getPerson method that the object has, the object of the desired Person type created.

The purpose of using this type of pattern is that the classes implemented from the person do not create a new object each time when it is created.In this way, we make less transactions in the class we operate, and create a more flexible and effective project.

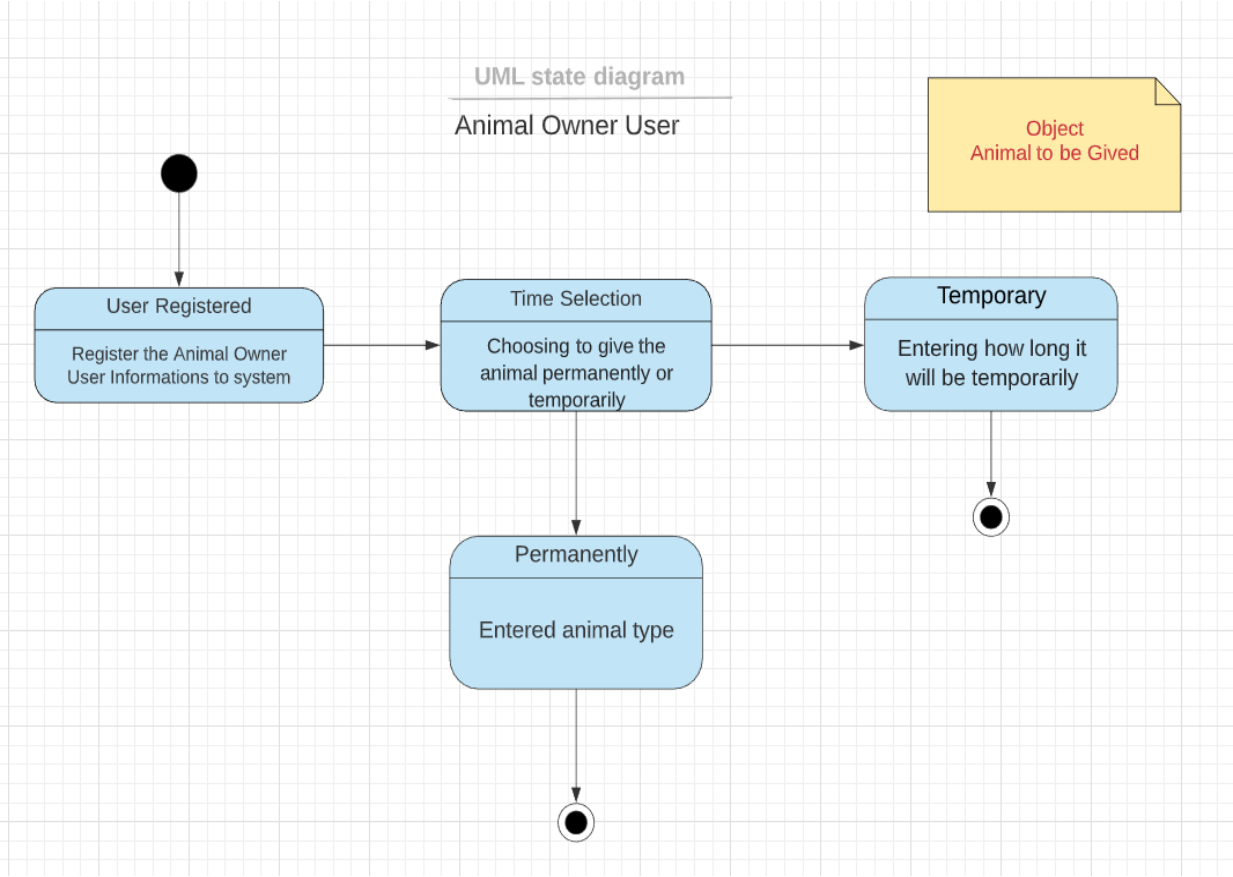
Another used design pattern is the Builder Design Pattern. The design pattern was applied on the address class.Not all features defined in the address class are sometimes used, and so more than one constructor is needed. If the builder design patter is used for this situation, more effective solution is obtained. When an object is created in address class, when a attribute other than common features is required, attribute is used with “withoptional…” in the address builder class.

Animal Health, Care and Adoption System Activity Diagram

Activity diagrams explain to us the operation of the systems, the flow and status of the events. The "Wants to Owner User" type user activity diagram" explains the activities the person who want an animal should do in the system. Person who want to own animals sign into the system and become members with log in and enter their personal information into the system. After the personal information is entered, it chooses which type of animal user want to own and how long it can take care of. After the necessary information is entered into the system, the users logs out.

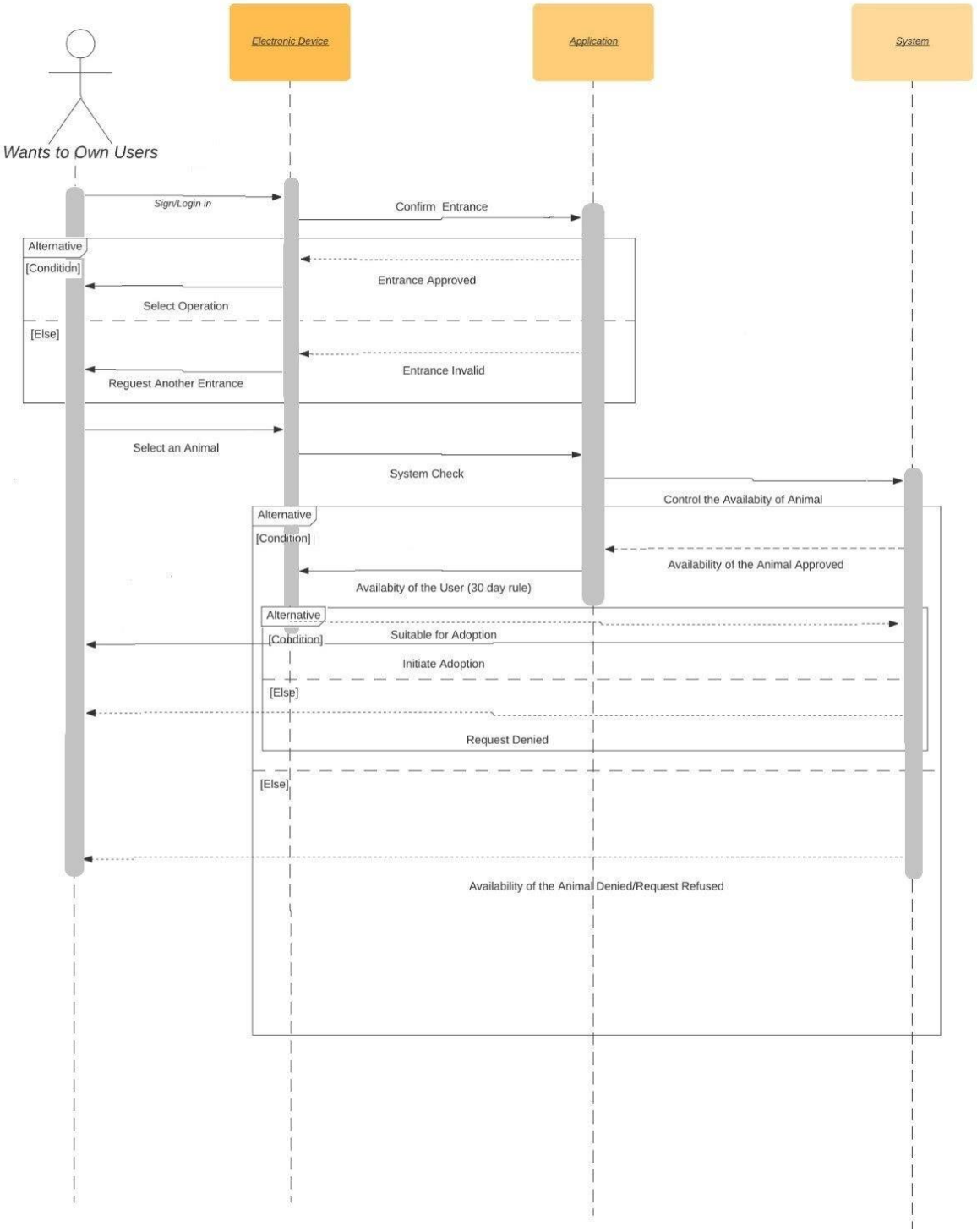


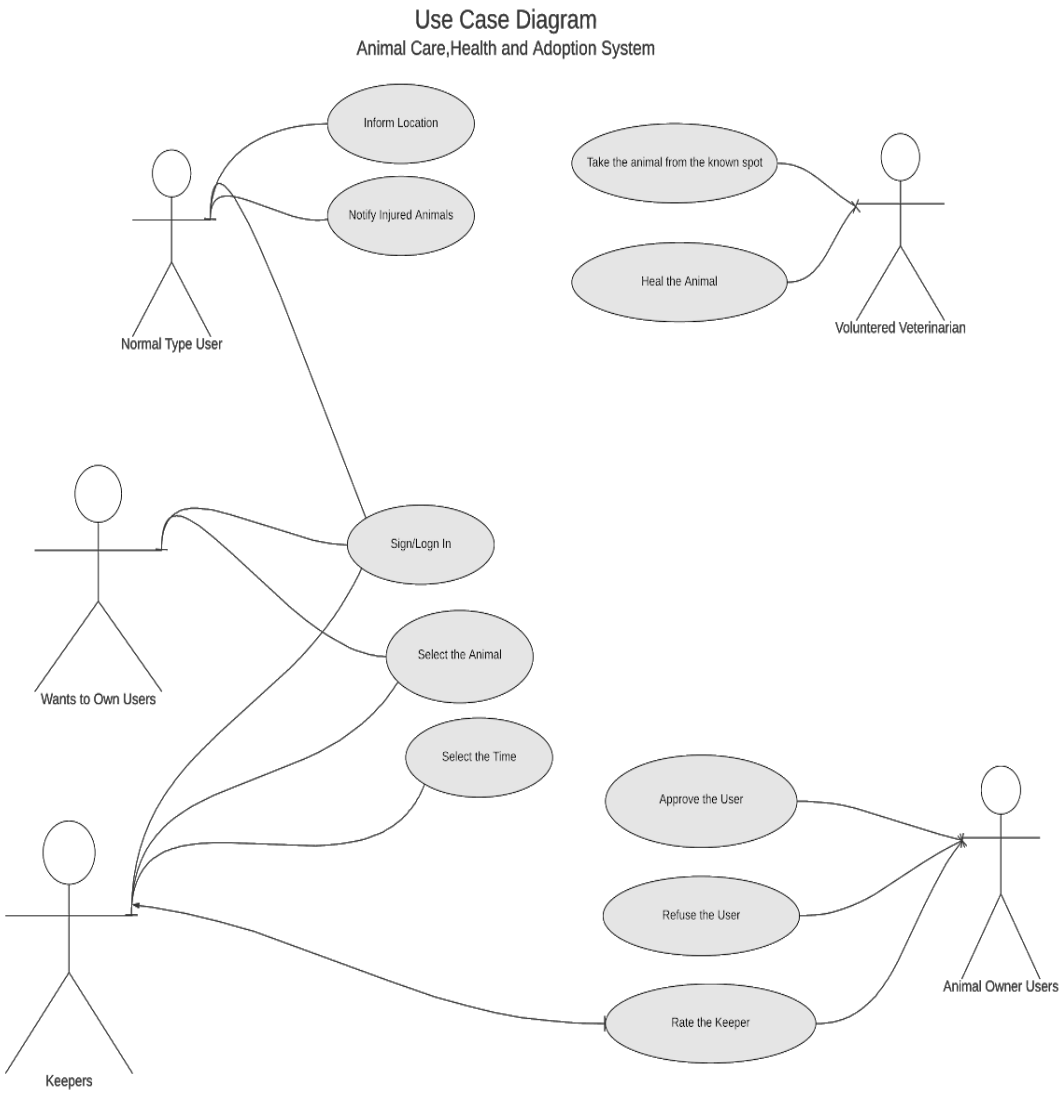
Animal Health, Care and Adoption System State Diagram



State diagrams shows transition between various objects.In our state diagram we try to explain the animal owners do when they want to give their animals. The animal owner user enters the information into the system. After personal information is entered, there is a time option to be permanent and temporary. Animal owners can give their animals permanently or temporarily.

UML Sequence Diagram
Animal Health,Care and Adoption System




Use Case Diagram
Animal Care,Health and Adoption System
Inform Location
Notify Injured Animals
Normal Type User
Take the animal from the known spot
Heal the Animal
Voluntered Veterinarian
Sign/Logn In
Select the Animal
Select the Time
Wants to Own Users
Approve the User
Refuse the User
Rate the Keeper
Animal Owner Users
Keepers

3 Project Plan

3.1 Task Descriptions

Stakeholder Meetings

Stakeholders and the software engineering team organize meetings to fully understand the problem and obtain the necessary information. Conflicts and negotiations will be held at any time during this period and throughout the project process flow.

Design Models and Mockups

Designing the models and mockups helps to provide clarity about how the project works as well as the project.Stakeholders should sit throughout during this process while the drawings are being created.

Database Creation

For database we couldn’t actually used the real database.To keep the datas about users we used very simple yet time consuming and costly way.We do this by txt files operations.For our 5 type of users there are 5 different txt files that keep the data in ordered.So when we started the software program is reading and recording the data then its start working normally.When we add other informations about other users before shutting down of the program; program is recording every data to these txt files again.So its a time consumer application for now.Also it will be costly when large data

had to be recorded.

Employee Software Creation

The software to be used by employees will be designed using Java using the guide of models and diagrams,requirements and models manual. The software will function as a simple and easy to understand user interface and stored information, including user information and animal information reports, among other functions, to 'browse' the our database.

Testing

The test will be implemented on the software. Test cases may be used to controls and guides the basic actions of people using the system. Any error or mistake occurring will be detected and resolved.

Finalization and Reports

All test and function processes are concluded at this stage. For the people who will use the system, every step must be clear and understandable, therefore reports appropriate for its purpose will be created.

3.2 Task Assignment

Assignments were distributed equally among the group assigned to the project. All three worked together in the project planning, shared the opportunity of any models and analyzed all specifications made by the owner.

All three of us created the use cases and other diagrams that will be used as a guide for the project. Also we all done equally on the given tasks and preparing report parts.

The classes and other materials have been split amongst each other we accomplished given tasks of creating the software for the company to use using Java on the Eclipse IDE.

Reports were created by all three group members throughout the process and were collected accurately and adequately to create this final report.

3.3 Deliverables and Milestones

We had three major Milestones in this project:

1. Completion of Requirements.
2. Completion of Code.
3. Completion of Testing.

All of these milestones were completed on a planned basis, and each of them provided a deliverability at the end. Our three corresponding deliverables (respectively) in this project were as follows:

1. A completed list of all stakeholders needs to be met.
2. A finished and easily navigational Java project on the java console.
3. Satisfied stakeholders and customers after demonstration and launch of software.

3.4 Project Schedule

The first month (February) of the project start date mainly created ideas for the purpose of the project and the requirements of the project were adjusted.This took approximately 11 hours (within one week) to do these. Until the last two weeks of March and the beginning of April, we created our project diagrams. We started to write the code of our project since the end of April and we allocated approximately 42 hours in total until the last week of May.Around the same time,we wrote the progressive report of the project. This total time was about 5 hours.In the last week of May we tested the project according to the use cases mentioned. This total time was about 7 hours. We then wrote a final report of the software. The time this took was about 22 hours. We finished the project in late May 26. The percentage breakdown was as follows:

Requirements: 11 hours - 30.00%

Design and code: 42 hours - 24.88%

Testing: 7 hours - 33.49%

Final Report: 40 hours - 19.14%

Demonstration and Adjustments: 10 hours -

4.78%

Total: 209 hours - 100%

4 Testing

4.1 Features to be tested

We will start by using both static and dynamic testing strategies. While static strategies will include a review of the basics of the implementation of the program dynamic testing is based on actual code execution.

The features we tested are as follows:

- ➢ To ensure that the program run itself (Dynamic)
- ➢ Logins worked efficiently and consistently (Dynamic)
- ➢ Accessing the software from multiple platforms to ensure cross compatibility (Dynamic)
- ➢ Checking the software loading time (Dynamic)

4.2 Test Cases

The following are examples of test cases we implemented:

- Accurate profile information for all user
- Search Parts for all user
- Reading and Writing cases
- Recording all the given data and record in the right order

4.3 Testing Schedule

The testing should begin right after the project itself begins. Keeping up on testing will ensure that any mistakes are caught early and corrected immediately.

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5 Conclusion

5.1 The Problem and Solution

There are basically three main problem and we try to come up with a solution that solves the problems.All problems are pointing the same subject which is animals.First problem is about injured animals and how to take them to the veterinarians clinics immediately.The second one is about the owned animals that had to be taken care of for certain days cause their owners couldn't be near to them.The last one is about animals who need owners and owners who need another owner for their animals permanently.

Since these main and subproblems are pointing the same subject we thought maybe bringing them together under a certain System could benefit many people who wants to do such a thing.So we brought them together in our software.We tried to resolve the situation for many aspects.I hope we made a difference for those who needs our help.

5.2 The Team and the SE Process

The software process we used was the waterfall method. We thought that this is the best way to proceed for our project. In this method, requirements, design, implementation , verification and maintenance are applied respectively. Performing the test at the end caused some errors to be noticed late. This caused a waste of time. But getting started by analyzing the project made progress easier. All team members performed these stages.

5.3 Engagement of Umbrella Activities

Four of the main Umbrella activities we used were as follows:

1. Software Project Management - Which was used to lead the project and ensure that the project was controlled, monitored, and on schedule.
2. Formal technical Reviews - This activity was essentially implemented for peer review.

   Having new and fresh eyes to view code and ensure that everything met the requirements.
3. Reusability Management - This activity was used to help us create flexible and generic assets that may be reused for future projects or for this project in other regions. This would cut down on cost and help with consistency.
4. Risk Management - This activity was used to assess and identify potential risks with creating the software such as assuring that not too much money be spent in assets on the project.

5.4 The Stakeholders that Benefited

After the product was launched, all of our stakeholders benefited differently from the product. aim of the project was to satisfy the customer and the user. It was also to please the animals.After the client was satisfied, the project manager was also satisfied with the sale of the project.The project team was happy that the project could be improved. The sponsor was satisfied when advertising. In short, all stakeholders benefited from the project.

5.5 The Organization's Benefits

Our organization has benefited greatly from the production of this software. Our project has reached larger masses. In this way, we shared the project requirements and content, how the system is used and the benefits of the system correctly and efficiently. Thus, the awareness of our project has increased. As it was a well-developed project, it was a project that attracted the attention of businessmen. We think that they will prefer us in their new projects.

6 User Manual

6.1 Software Description

The software will allow users to inform veterinarians about injured,needy animals and will be responsible for adoptions.Because of this software people can find keepers for their animals temporary or permanently.Also the software will help who wants to owner users to find their dream animal and when this happen this will automatically help the owner about giving away their animals.For example when their animals gave birth there will be new responsibilities and challenges that has been occured.To prevent these obstacles people can find appropriate candidates to give their animal away.So their new animals can be in good hands again and solution for the obstacles.

The workers that use this System or Software will use a user interface to view, edit and modify the user's information, and to state the animals current condition. There will be a notice section for the workers to be notified in real-time of any errors whether they need immediate action. Workers will also have the ability to search,edit and delete the users.Also they will have the ability to display the users informations.

6.2 How to Use the Software

The software designed for Animal Health, Care and Adoption System customers The menu page appears on the screen. There are user type options according to the purpose of the menu system.Veterinarians who want to use the system as a veterinarian and can help the injured animal can choose the veterinarian user type. The animal owner user type option is the option that animal owners can log in to give their animals temporarily or permanently. Animal owners can also rate the keepers they give temporarily. With the user type option that wants to have an animal, people who want to own an animal can reach their pet owners.The normal type user option is to report the status and location of the animal if the person has seen an injured animal around it.The keeper user type option is for people who want to look for animals temporarily.

After each user chooses the type of user she/he wants to use the system, a screen appears asking she/he wants to do.If the user wants to add himself/herself to the system,he/she can use the add a new user option or if he/she wants to delete himself/herself from the system, he/she can use the delete option.If the veterinarian user type wants to add, his/her name, surname,city,town,street, door number,flat number, phone number, age, gender, e-mail address, working hours information must be entered in the system.If the animal owner wants to add, his/her name, surname, address information, phone number, age, gender, whether the animal comes from shelter or human, whether he/she wants to give his/her animal temporarily or permanently and what kind of animal it is information must be entered the system. If

the user who wants to have an animal wants to add, his/her name, surname, address information, phone number, age, gender and what kind of animal she/he wants must be entered the system.When adding normal user, the must enter his/her name,surname,address information,phone number,age,and gender.When adding the keeper user, the user must enter his/her name,surname,address information,phone number, age, gender and animal type informations in the system.The users should enter their flat number,door number, phone number and age informations in number(integer) type.

The informations entered by the user is saved in the system.When the user wants to delete herself/himself, she/he can perform the deletion by entering her/his name, surname and phone number.Veterinary users can also search by entering his/her name and surname to check for injured animals and find their locations.There is also the option to return to the main menu in the menu where the user wants to do so that the users can return to the main menu and there is an option to log out from the main menu.

6.3 Troubleshooting Common Problems

The Software

- Problem: Loading incorrectly

  Maybe software could be restart.

ANNOTATION

We couldn’t do our project with swing.So it’s not an expected console application.Also we didn’t do our project as a web application or mobile application.So its basically a normal program who run in java console.