UNIVERSIDAD DE PUERTO RICO

RECINTO UNIVERSITARIO DE MAYAGÜEZ

Group Project:

Phase 1

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March 6th, 2020

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Abstract

The purpose of this document is to give the reader an overall better idea of the concept behind “Satorican”. The document is divided into four main sections: the informative, the descriptive, the analytical, and the implementation. The informative section focuses on providing an idea of the current situation, the current needs, the ideas that will help in the development of the solution and the scope of the problem. On the other hand, the descriptive section has the objective of providing a better and more clear view of the finer details of the project by presenting a rough sketch of the domain description, a domain narrative, a description of the different types of requirements, and a list of terminology used along with their definitions. The analytical section focuses on the creation of a concept analysis rough sketch, and the verification/validation of the information stated in the two sections preceding the analytical. Finally, the implementation section is where the software design is stated along with the personas that are being used as a basis, diagrams that allow for a clearer view of concepts and behaviors while also presenting the overall progress and division of responsibilities for this assignment.

Informative

Current Situation

Due to the short range of coverage animal institutions have at their disposal, there are a lot of animals without a proper home. Since most institutions don't have enough resources to maintain a substantial amount of animals, they are forced to euthanize the sick, old, and least probable to be adopted to avoid overpopulation. If the institution does not believe in euthanasia then once their facilities are at capacity they are no longer able to rescue more animals. Regardless of whether the institution euthanizes its animals or not, costs to operate and maintain these institutions running are extremely high. Especially when it's 100% financed without governmental support. Therefore the quickest solution for these institutions is for people to adopt animals.

Need

There is a clear need to make a system that eases the adoption process of an animal from an institution. There is a need for us to identify the domain for our platform and what requirements we would need to satisfy it. We would also need a proper software design and implementation so that the systems we create can have a long period of use and work as intended.

Due to the current situation described in the previous sections, a particular need is observed by the developers of this project. The two primary needs this domain encounters are the overwhelming amount of animals in institutions and very few people that adopt them. From these main needs, there can be extracted various measures for our project to be tested against. The same could be said for the requirements the program must meet. We consider this the main need for the domain because satisfying it will solve the most amount of problems in the domain.

An example could be: given to the fact that too many animals are not adopted, more and more are being euthanized in the institutions. If more people adopted animals, institutions could reduce the number of animals that are euthanized because of overpopulation in the institution. As seen, solving one of the main needs will solve other problems as well.

With regards to the overwhelming amount of animals, we chose this because no matter how many animals are adopted by people, if the number of animals that are brought to the institution does not reduce, we might as well not solve the problem at all. An analogy to understand this could be the three Rs in environmental studies, Reduce-Reuse-Recycle. We can not find a solution for the domain described by only satisfying one need alone. But what we can do is look for the ones that have the best domino effect as to solving other problems.

Ideas and Goals

The idea and goals must be focused on satisfying the needs described above. By analyzing these needs, our goal can be defined as: “increase the number of animals that are being adopted and decrease the number of animals brought to the institution”. One of the primary reasons that this goal is set up like this is because of its measurability. It focuses on numbers.

Given the explanation of the two needs observed in this domain, we conclude the achievement of this goal will satisfy those two needs, and as our hypothesis indicates, will solve many other problems encountered in the domain.

Possible ideas could be focused on a particular aspect of these two needs. An example could be: The mechanism proposed must help communicate the institutions with people that want to adopt an animal and vice versa. Given better communication between these two, adoptions can be more frequent in the institution. However, notice how this idea does not directly (we are not sure if it solves it indirectly) solve the two main needs. This idea is a good start but needs more refining. One could say that apart from facilitating communication between institutions and adoptees, we need to make sure that the animal is taken care of and has not gone astray. Our guess is that the fewer people abandon their animals and actually take care of them, the fewer animals that end up in the institutions, therefore we can reduce the number of animals brought to the institution.

Descriptive

Rough Domain Sketch

The logistics behind Animal Rescue Assistance has a structure of entities, functions, events, and behaviors. These include the acceptance of adoptees by the institutions. The browsing, searching and requesting for the adoption of different animals located in multiple institutions.The acceptance or denial of the adoptee's request for adoption. The orientation and implementation of a system for institutions to ease the adoption process. Through communication with the institutions, modifications may occur (pivots) but this will be the basis for the project. The retrieval and insertion of animal information from each institution for adoptees to browse through. Available communication channels between institutions and adoptees is necessary. Publicly available information regarding institutions should be readily available.

This domain encompasses three main objects. They would be the institutions, the adoptees, and the animals. The transaction mainly occurs between the institution and the adoptive parent. The animal is the object that is being traded (note: We refer to "animal" as an object here, but that is only as an esthetical use for the project. Our main desire is to treat them as beings themselves which should be handled with much care and not as objects). In order for this transaction to occur, a series of processes and documentation must occur. One of these processes is the search done by the adoptive parent of the animal before actually adopting it. This domain also takes into account stakeholders such as the staff members of the institution; inside the staff members, we may have, the veterinarian, his/her assistant, the institution's secretaries, and others that will be more adequately defined along with this report.

In order to be an appropriate institution, the correct documentation has to be presented to an organization. This shows that you have the licensing of having an institution. From the adoptive parent's point of view, they must present adequate representation of them being able to take care of the animal. This could be done by proof of at least having a house where the animal would live (other things can be required as well).

Descriptive Domain Terminology

- (Entity) Rescued Animal/Animal - A rescued animal is stored in a facility in wait for being adopted. If too much time has passed in the said facility and the institution does not believe in euthanasia the rescued animal will be moved to another facility to increase its odds of adoption.
- (Behavior) Euthanasia - the practice of intentionally ending a life to relieve pain and suffering. Under the domain of rescued animals, this practice is sometimes used when the animal has spent too much time in a facility and has not been adopted.
- (Entity) Catalog - a page where all participating institutions display their animals for adoption.
- (Behavior) Browsing the catalog - the action of searching without a specific goal in mind. This activity is realized by the adoptees.
- (Entity) Institution- facilities and infrastructure in charge of housing animals to be adopted. Also known as sanctuaries, rescues, pounds, etc. This is standardized due to the moral and philosophical perspectives of each type of animal adoption organization.
    - (Entity) Sanctuaries - institutions that store animals for adoption and do not believe in euthanasia. No matter how old or sick they take care of the animals.
    - (Entity) Shelters - institutions that store animals for adoption for a certain time until they are euthanized or moved to another institution for better odds of adoption.
- (Entity) Facility - buildings where the animals are stored and managed by an institution.
- (Behaviour) Real-Time Pictures/Videos - Media (photos and videos) taken directly from the applications instead of the device's camera.
- (Event) Transaction - In the context of our domain, it is defined as the action of a shelter providing the desired animal for the adoptee. For this to happen the adoptee needs to provide the necessary documentation to the shelter so that the trade can be accomplished.
- (Entity) Adoptee - a person who is looking for a specific animal to adopt.
- (Entity) Stakeholder - a person who supports and somewhat influences the institution.
- (Entity) Adoptive Parent - a person who adopts a child, in this case, a child refers to an animal from an institution.

- (Entity) Administrator - Developers who work to provide services for the institutions via the system. They provide maintenance, receive feedback, receive reports among other actions.
    - Programmers: Group of people working developing it and serving maintenance.
    - Managers: Group of people who work with client relationships and business inquiries.
- (Entity) Database: This will be the server containing all sensitive information about Users, Institutions, and Animals. Only administrators have full access.
- (Function) Cloud Service: This will be the server retrieving and sending messages and notifications to the Users. Both Staff Members and Adoptees alike.
- (Entity) App: Satorican is an application for mobile devices and PCs.

Descriptive Domain Narrative

Our domain is Animal Rescue Assistance. We will rely on a few basic notions: rescued animals authorized adoptees and institutions among others. By Animal Rescue Assistance we refer to actions taken to develop a system for animals who have been abandoned to be rescued. A rescued animal can be adopted, euthanized, stored in a facility, or moved from one facility to another.

(i) Rescued animals under our project can only be adopted by authorized adoptees. By authorized we refer to the verification process realized to confirm identity, check for a criminal record, and proof of address.

(ii) To confirm identity a government-issued identification shall be shown via a real-time picture. A valid governmentally issued identification with a photo would be a passport or driver's license.

(iii) Proof of address is a receipt for water or electrical services provided (in the case of Puerto Rico) by the government. In this document, your address shall appear. If the utility bill is under someone else's name then a picture of a written letter with the signature of that person and an ID shall be provided in addition to the receipt.

(iv) In Puerto Rico to verify if an individual has a prior criminal record it is asked that the individual present a Certificate of Good Behavior. This is a digital certificate that the adoptee can obtain online through the Puerto Rican Police Departments' website. This certificate verifies that the adoptee does not have a criminal record.

(v)The difference between an animal sanctuary and an animal shelter is that sanctuaries are institutions that do not believe in euthanasia unless recommended by the veterinarian (for medical reasons). Shelters are places that hold animals for a certain period of time in hopes of the animal being adopted. If no one decides to adopt then the animal is euthanized.

Domain Entities

1. Animal: These are the entities that will be under an Adoptee or Institution guardianship.
    - Composed with Atomic Entities such as Dogs, cats, guinea pigs, etc.
    - Each Animal has attributes: species, name, sex, age, weight, medical conditions, etc
2. User: These are people using the Satorican app with their own unique profile account.
    - Composed with Atomic Entities such as:
        - Adoptee: a User that only utilizes the system to adopt and take care of a certain amount of animals.
        - Guardian: an Adoptee who has been approved by an institution to take an animal home with them.
        - Staff Members: a User that utilizes the system to serve an institution. They evaluate adoption requests, take care of and administrate stray animals.
    - Each User has attributes: name, age, amount of pets, occupancy, residence, etc.
3. Institution: Personnel who take care of the animals and the facilities that store them.
    - Composed with Atomic Entities such as:
        - Staff Members: a User that utilizes the system to serve an institution. They evaluate adoption requests, take care and administrate stray animals.
        - Facilities: a location that will contain a number of domestic animals ready to be adopted.
    - Each Institution has attributes: name, location, amount of animals, Working hours, etc

Domain Functions

- Institution Add Animal to Catalog
    - Once a homeless animal is rescued all its essential data is collected (size, weight, age, eye color, coat color(s), medical issues/history, etc.) and a photo is uploaded to the institutional page. An animal profile is created and added to the catalog of other animals in that institution.
- Institution Removes Animal from Catalog
    - An animal profile is removed from the catalog making it unavailable to the adoptees.
- Institution approves an adoptee turning them in an approved adoptee who can take an animal home
    - The institution looks at the adoptee's documentation which is available in their profile. If the adoptee complies with all of the institutional demands they can now adopt an animal.
- Institutions can communicate via text-messages with the approved adoptee.
- Institutions can deny or accept adoption requests for animals from their catalog.
- Institutions can communicate among themselves via direct text-messaging.
- Institutions can submit transfer requests to other institutions.
- Institutions can accept or deny transfer requests from other institutions.
- Institutions can access an easy-to-use list of all their animals and details.

- An animal is sent to another institution. Therefore they are moved from one catalog to another.
- Adoptee browses for animals per institution
    - Adoptees go to the list of institutions and choose the one they desire. Then they are redirected to the Institution's page where they can see the animals up for adoption.
- Adoptee filters catalogs based on preferences (animal type, animal size, animal color, animal age, etc.)
    - Animals when registered have keywords added to their account. This helps the adoptees search for animals with specific characteristics. Once filtered all the animals who share this characteristic will appear as a list.
- Adoptees can browse for animals per specific institution, type of animal, preference, and/or distance from the adoptee.
- An adoptee can submit an adoption request for an animal
    - Adoptees can enter a specific animal's profile and request to adopt it. The institution will be notified that an adoptee is interested and waits to become a guardian (accepted request) or receive a denied request.
- Adoptees must create a profile and upload all their necessary documentation.

Domain Events

1. Adoptee
   - Adoptee found an Institution: The adoptees can now have access to the selected Institution's profile.
     Formal Presentation: Adoptee found an Institution
   - Adoptee found an Animal: The adoptee has no access to information about the selected animal.
   - Adoptee received approval on its adoption request: the adoptee is now the owner of the animals requested. The adoptee can now pick up its new animal.
   - Adoptee received a decline on its adoption request: the adoptee cannot claim guardianship on the requested animal with reasons found on their profile.
2. Institution
   - The institution received an Adoption Request: A staff gets a notification that tells them an Adoptee is interested in adopting one of their animals. Now the responding staff can view the requesting Adoptee's profile and decide whether to accept or decline their request.
   - The institution received an Animal Transfer Request from another Institution: A staff member gets a notification about the request. Now the responding staff can view the animal's profile and decide whenever to accept or decline the request.
   - The institution received a List of Animals Transfer Request from another Institution: A staff member gets a notification about the request. Now the responding staff can view each animal's profile and decide whether to accept or decline the request.
   - The institution received an Animal Transfer Request from Adoptee: A staff member gets a notification about the request. The responding staff gets to view the animal's profile and decides whether to accept or decline.

Domain Behaviors

1. Adoptee
    - Adoptee adopting an animal from a selected Institution: Adoptees are most likely to look for an animal to own. Therefore, they will eventually be interested in adopting an animal.
    - Adoptees transferring their pet to an Institution: Some Adoptees may regret or be unable to take care of their pets. Therefore, they will take their pet to an institution.
    - Adoptee adopting an animal from another Adoptee: Some Adoptees may regret or be unable to take care of their pets. Furthermore, they will put their pets available for adoption.
2. Institutions
    - Institutions transferring animals to another institution: Some may be unable to take care of a certain amount of animals. Another conflict would be that some institutions may be too full of animals. Their best option could be sending some animals to another institution that is able to take care of them.
3. Adoptees & Institutions
    - Adoptees or Institutions proving the animal is dead in the app. Every animal is mortal and is most likely not going to outlast its owners. They will have to submit the death certificate to justify classifying an animal as dead.

Domain Requirements

- Adoptees must have a residence with power and water, a certificate of good behavior, and governmentally issued identification with a photo.
- Adoptees must upload to their profile the animal’s photos and a 20-second video every three months.
- Adoptees must maintain their accounts active as long they have a registered animal in their profile.
- Institutions must be certified with documents from the government to register.

Interface Requirements

- The database must always have the latest update from each account.
- The navigation system must display a map in the User’s current location and the most optimal route between the User and the selected Institution.
- The navigation system must locate and display Institutions near the User's current location.
- Satorican must have access to the internet in order to operate.
- Satorican must display a list of available adoption animal photos and profiles that are near to the User’s residence. While the User must swipe left or right on each photo to decide which are the animals they are interested in adopting.
- Satorican must only save videos and photos taken in real-time.
- Cloud Service must connect between Users to allow them to send messages and requests to each other.
- Cloud Service must send notifications to Users about requests, messages, and reminders.
- Administrators must keep maintenance after realizing Satorican.

Machine Requirements

- Satorican must be compatible and downloadable to mobile devices, PCs, and laptops.
- Devices using Satorican must-have cameras to capture real-time photos and videos.

Analytical

Inconsistencies

In the process of defining the goals needed to make this application succeed, almost inevitably, inconsistencies were found. The main focus of our application is to serve as an intermediate between the potential client who's interested in adopting an animal, and the animal institution that will provide the client with the product they desire (in this case, the animal of his/her choosing). What we have defined as the "satisfied customer stage", is that moment where the entire process is completed and the customer is now the proud owner of the pet he just adopted. Now, the word "owner", might serve as a contradiction, since some might not have any issues in seeing the customer as the owner of the pet adopted from the Institution, but others might. Even though we define "owner" as the person now in charge of taking care of the pet, others might disagree saying animals are "free-spirited" and can never be "owned".

Even though we only intend to have satisfied customers who achieve what they expected to achieve and perhaps more, we understand how "ownership" can be debated between different sectors, and have no choice, but to highlight it as an inconsistency in our application.

Concept Analysis of Rough Domain Sketch

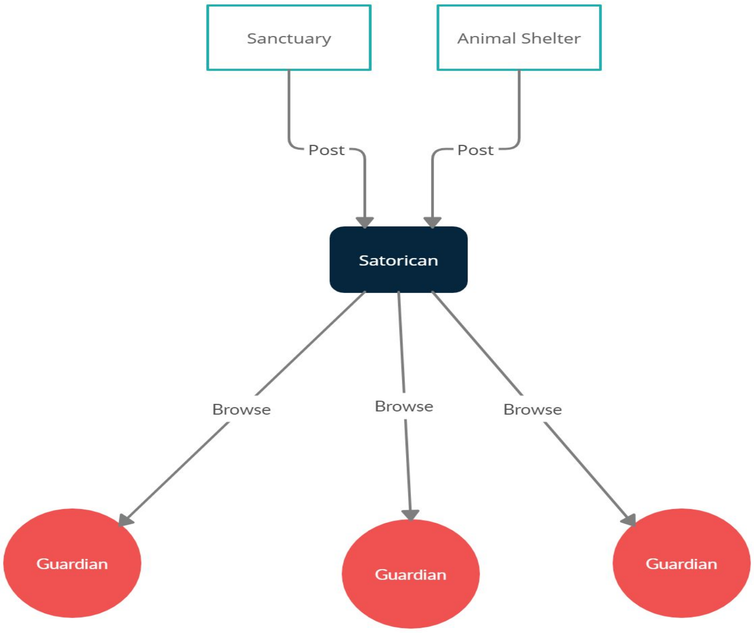
Regarding the acceptance of users into the system, this should be done in a legal matter. A paper trail should be established to exempt us from legal repercussions. The basic concept for the system is to create a catalog where the user can look at all the available animals from multiple institutions from all over Puerto Rico. This activity can be divided into subcategories: browsing and searching. Those who browse simply look through all the available animals in all the institutions. While searching implies that keywords regarding specific characteristics of the animal are desired. Be it physical traits or location, the user is looking for something specific. For the orientation and implementation of the system meetings (which contents shall be saved in a logbook) with institutions that desire our services should first be established. Giving us an opportunity to further understand the domain. Once that initial meeting is set the orientation (pitch) process can occur to commence the implementation of the system.

For the retrieval and insertion of the animal's information into the system to occur seamlessly a profile for the institutions must be created so they may upload the animal's information to their page. After the user, be it through browsing or searching, finds an animal they wish to adopt a request through the animal's page must be submitted to the institution that has it. It is then the institution's job to establish communication and evaluate the user to then decide if they are able to adopt the animal. This communication can happen through a messaging feature in our system or directly between the institution and the user. The acceptance or denial of the request must be processed through our system.

Implementation

Software Design

To better grasping how the design of this application will work, the group decided to present the interaction of the two types of main users: the Institution and the person looking to adopt an animal (guardian). Look at the following figure. At the top are the users responsible for adding the available animals to their facilities. This includes adding all information that is important for the guardian to analyze so he/she can make the decision to adopt or not the animal (this information is explained in the following sections). This is *posted* onto the Satorican application where the guardians can *browse* all the available options for adopting an animal. Satorican will work as a mediator between these two users.



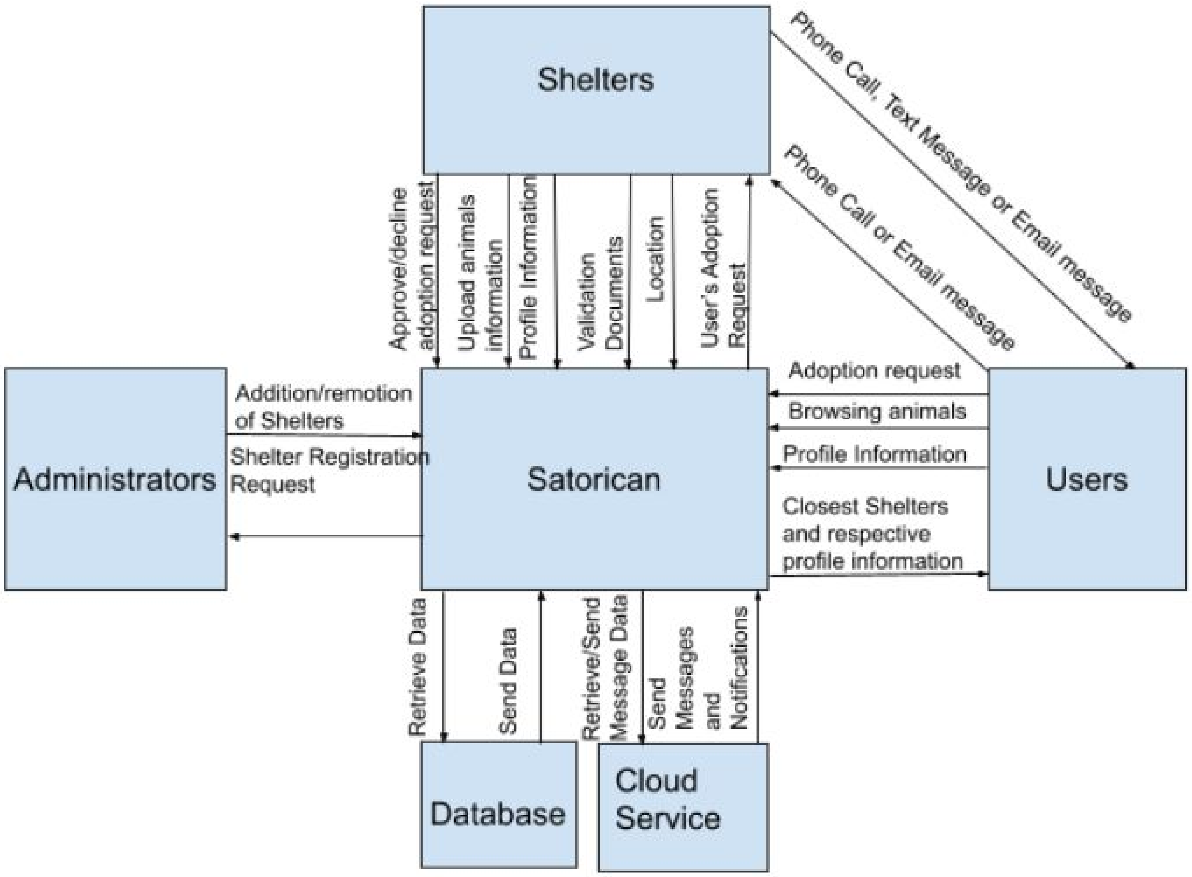
Personas

To adequately measure our target client, our group will have to create a persona. This persona is our current goal as to the needs and characteristics of an everyday client for our application. The group will base most of its primary functions and user interface on the needs this developed persona will have. It is important to note that since this is the start of the project, the following persona description is not written in stone, meaning that it can be changed in the future as we progress with the project.

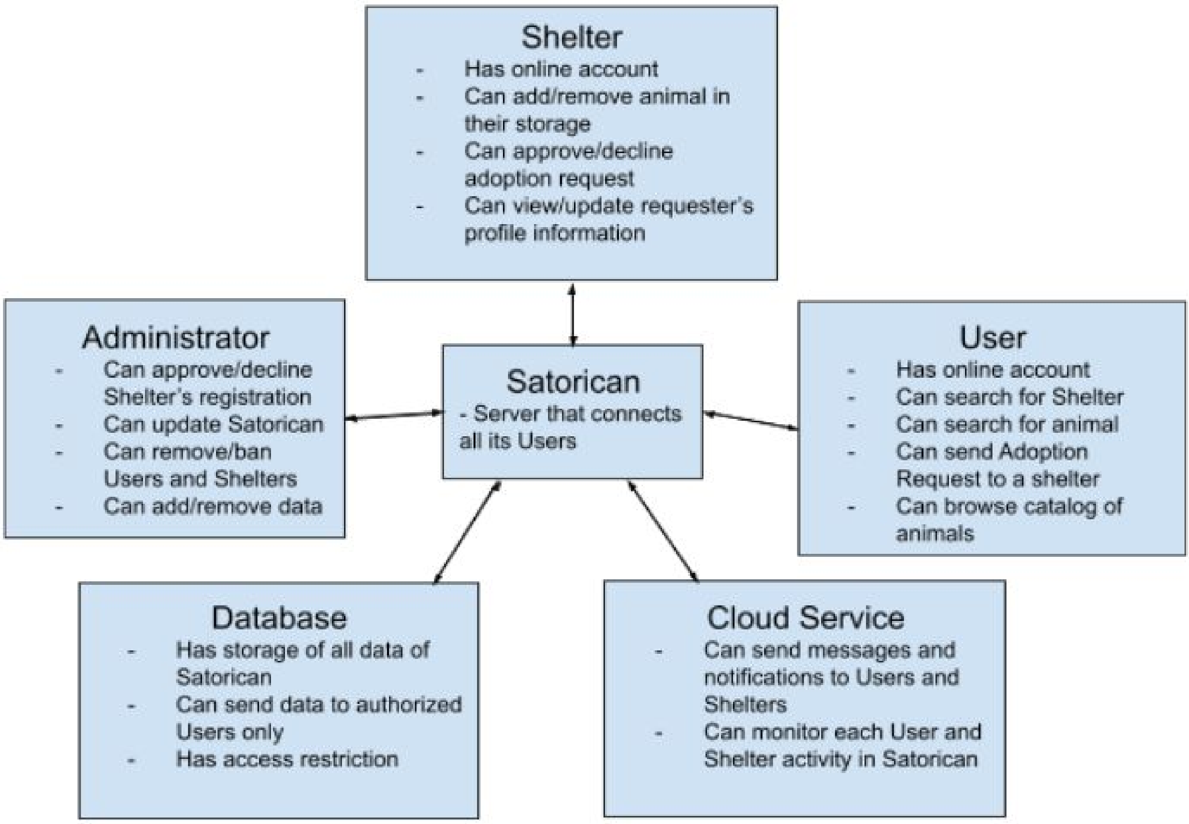
Our project's personas are two: the animal Institution and the guardian (user) willing to adopt an animal. The animal Institution persona is described as someone who has too many animals in their institution. They desperately need a way for more people to adopt their animals. If not adopted at a certain time, due to overpopulation in the institution, some animals are euthanized. The Institution persona must also make sure that the new caretaker of the animal does not abuse it nor abandon it, otherwise, what is the point of having more people adopt animals.

The guardian persona is looking for a way to find the perfect animal for the family. This person does not want to have to go to all the Institutions available in his city (or the ones very far away) just so when he arrives he may be disappointed that the animal they wanted is not there. The guardian wants to find a way that he/she can be certain of the type of animal he/she will buy/adopt that will be available in the Institution. What this person needs is a centralized way to look for the animal he/she wants, compare all the institutions that have it, and adopt the animal with the least amount of problems.

Software Architecture Design


Shelters
Phone Call, Text Message or Email message
Phone Call or Email message
Approve/decline adoption request
Upload animals information
Profile Information
Validation Documents
Location
User's Adoption Request
Administrators
Addition/remotion of Shelters
Shelter Registration Request
Satorican
Adoption request
Browsing animals
Profile Information
Closest Shelters and respective profile information
Users
Retrieve Data
Send Data
Retrieve/Send Message Data
Send Messages and Notifications
Database
Cloud Service

Software Component Design



Shelter

- Has online account
- Can add/remove animal in their storage
- Can approve/decline adoption request
- Can view/update requester's profile information

Administrator

- Can approve/decline Shelter's registration
- Can update Satorican
- Can remove/ban Users and Shelters
- Can add/remove data

Satorican

- Server that connects all its Users

User

- Has online account
- Can search for Shelter
- Can search for animal
- Can send Adoption Request to a shelter
- Can browse catalog of animals

Database

- Has storage of all data of Satorican
- Can send data to authorized Users only
- Has access restriction

Cloud Service

- Can send messages and notifications to Users and Shelters
- Can monitor each User and Shelter activity in Satorican

Test Plan/ Test Proposal

The main idea of our application Testing plan is to discover and resolve potential defects/bugs at each specific level in the development process. In addition, we want to prioritize different tests to make them consistent with our web application requirements and estimate a timeframe for their implementation. This is why we will focus on white box testing it first to study the internal functions of the system. This will be done together with the Unit test. For this process, we intend to isolate impactful methods or classes to verify that the returns are as required or intended for this project. At the same time during this process, we intend to analyze the most effective way that the method or class runs. Once the methods are proven that they work in the most effective way, we will proceed to do a “Bottom-Up Approach” as an integration test method with all units combined. This way we can test the interface and structure of our module and most importantly have a better understanding of where the problem might be if the integration were to fail. These tests are planned for the early stages of our web application development.

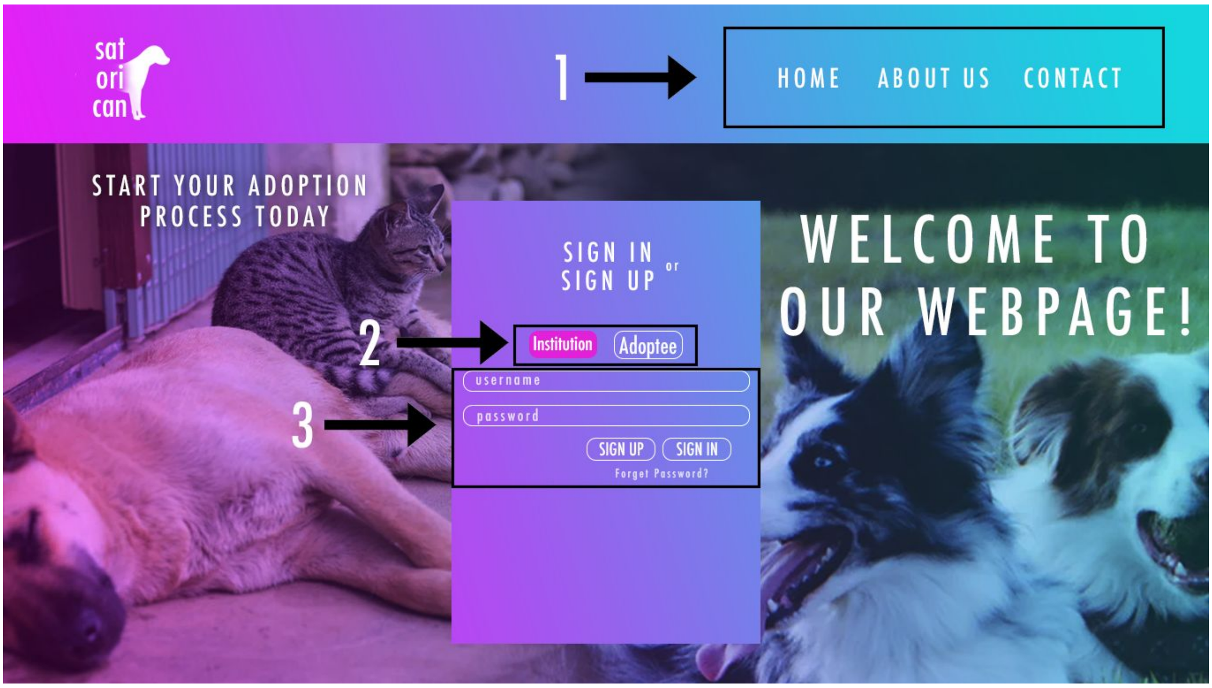
Another priority is to conduct Documentation testing before and during the implementation process to track established requirements, domain, execution progress, software design, etc. Integration testing is planned for the second phase of our web application implementation. Once our diverse components are working properly, this test will help prove how they work together. At the same time, the Database test will also verify the integration of the Web application database, data consistency, whether the query is executed correctly, and whether the data is correctly retrieved and updated.

As part of the final stage of testing, Black box testing will be used to determine how the system responds to a given specific input, its response time, usability issues, and reliability issues. Also, we plan to perform Retesting and Regression testing for each of the mentioned levels to ensure that every detail is implemented properly and that the entire process is consistent with our end goal.

Our future interest and ultimate goal are to enable end-users to perform various testing methods (such as Acceptance testing, Usability testing, and Performance testing) on our web application. In this way, we can corroborate that our application exceeds user needs and demands.

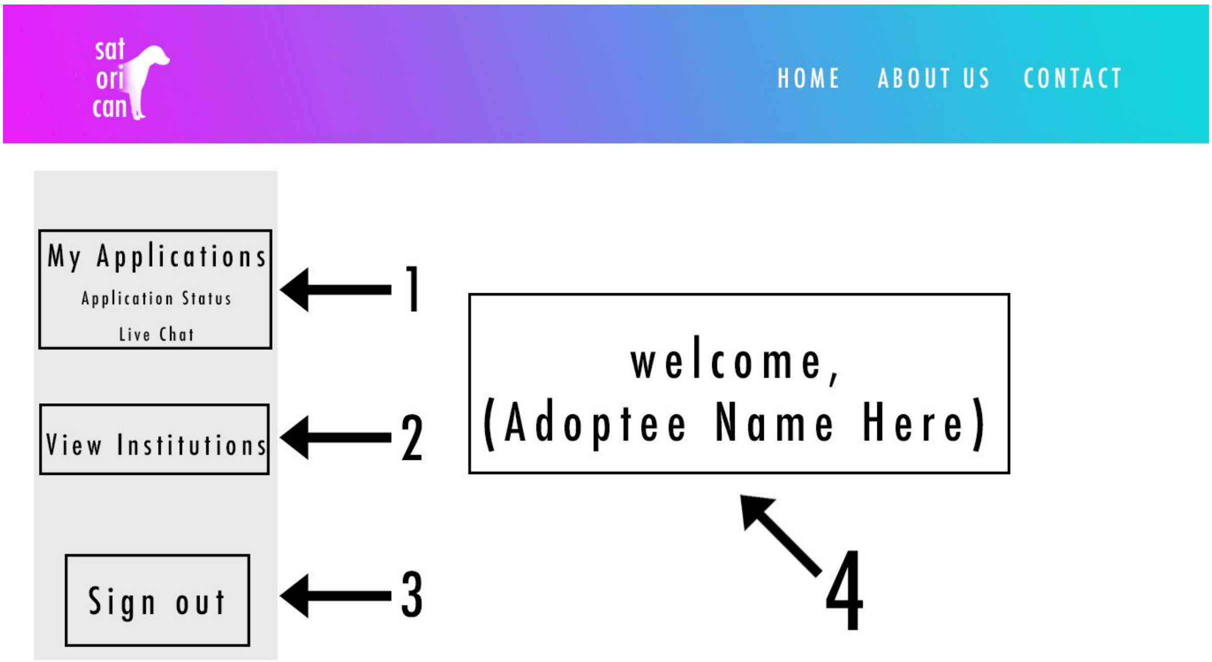
UI Design Sketch

Log In Page:



1. Here, we have the usual header options where the user can go "Home", learn more "About Us" and furthermore, "Contact" us for any questions or problems.
2. "Institution" and "Adoptee", are both buttons. Here, "Institution" has been clicked, which means, a person from an institution is attempting to log in. Similarly, if the "Adoptee" button was pressed, it means a regular user is attempting to log in, be it to look for potential pets for adoption or to check on the status of an application he/she might've submitted if he found a pet he was interested in adopting.
3. Last, we have the usual "email" and "password" sections for the user to enter and the "Sign Up" button in case of a first-time user visiting our website.

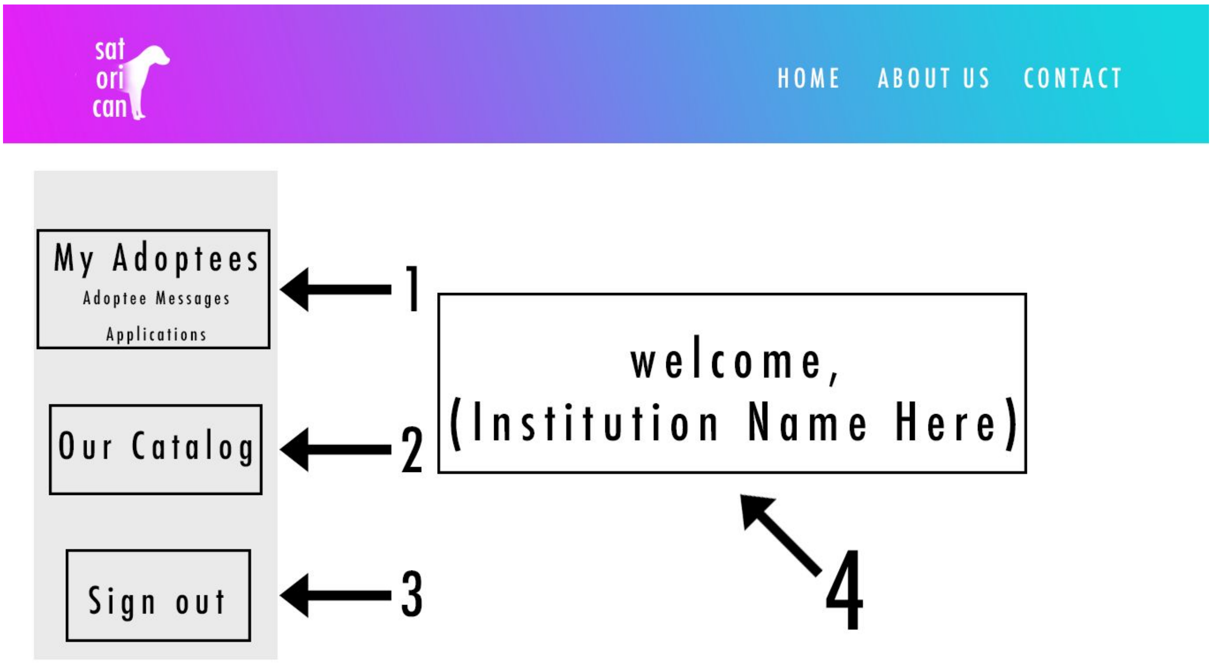
Homepage (Adoptee Perspective):



Once the Adoptee has successfully logged in, he will be redirected to this page we denominate as the “Main Page”. On the left, we find a sidebar in which each line of strings consists of a button that leads somewhere else. We explain in detail what we mean.

1. Here, the main button appears called “My Applications”. If the user clicks on this, he will be redirected to a page containing his “Application Status” and a “Live Chat”. However, he might choose the last two directly, without taking the first step. Either way, once he finds himself in the “Application Status” section, if he had previously submitted an application regarding the adoption of a pet, such application will appear and the status should be visible as well (be it: Under Revision, Approved, or Denied). A “Live Chat” is a section we have prepared where the adoptee can chat with different institutions about the application he submitted or any other questions he might have.
2. This “View Institutions” section will show the adoptee the institutions registered to the system and once they click on one, an animal catalog will appear, where the user will be able to see every pet said the institution has for adoption.
3. Lastly, a “Sign Out” button appears if the user is done with his search and wants to end his session.
4. The purpose of this section is to display a welcome message once the adoptee signs in.

Homepage (Institution Perspective):



welcome,
(Institution Name Here)

Once the Staff Member has successfully logged in to the Institution's page they will be redirected to this page we denominate as the "Main Page". On the left, we find a sidebar in which each line of strings consists of a button that leads somewhere else. We explain in detail what we mean.

1. First, we find a "My Adoptee" button, where each client with a pending application, will appear. Once clicked, the Institution will be redirected to a page containing "Adoptee Messages" and "Applications". The institution can skip this step and go directly to any of the two previously mentioned sections, be either pressing on "Adoptee Messages", or on "Applications", which we find just below "My Adoptees". The "Adoptee Messages" section will contain messages from any clients that are currently in the process of adopting and will contain any questions they may have. "Applications", contains all applications submitted by adoptees. The institution will be able to review those and determine whether or not they are going to approve the said application.
2. "Our Catalog", is a section made so that the Institution is able to edit what the adoptee will see. Here, they may add/remove animals, edit information about themselves, and make other changes visible to adoptees.

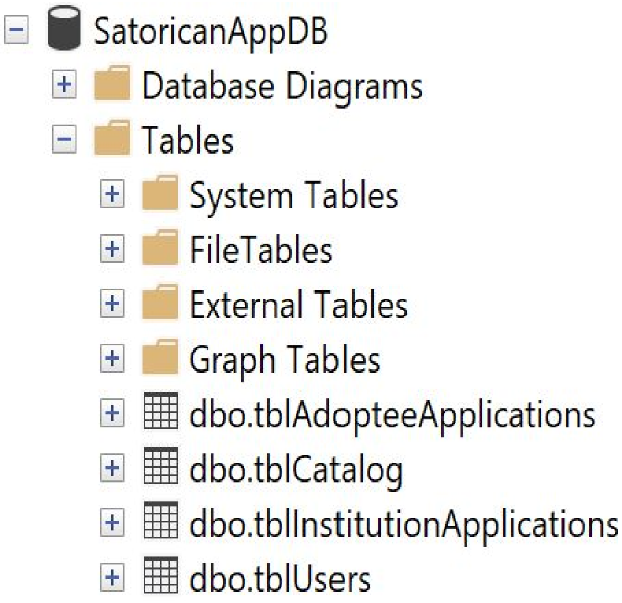
3. Lastly, a “Sign Out” button appears if the institution is done and wants to end its session.
4. The purpose of this section is to display a welcome message once the institution signs in.

Satorican Database:

In this part of the implementation, the Satorican Web application database was created.As shown in the image, the first four tables (tblUsers,tblCatalogs, tblInstitutionApplications,tblAdopteeApplications) added to the database (SatoricanAppDB) are the main tables for our application functionality.

Objectives of the tables:

- **tblUsers-** saves the user information of the application, and filters users by Adoptee or Institution.
- **tblCatalogs-** saves the information about the pets that the agency has for adoption.
- **tblInstitutionApplications-** contains all the applications of adoption of the institution and keeps track of their status.
- **tblAdopteeApplications-** contains all applications in a catalog and tracks their status.



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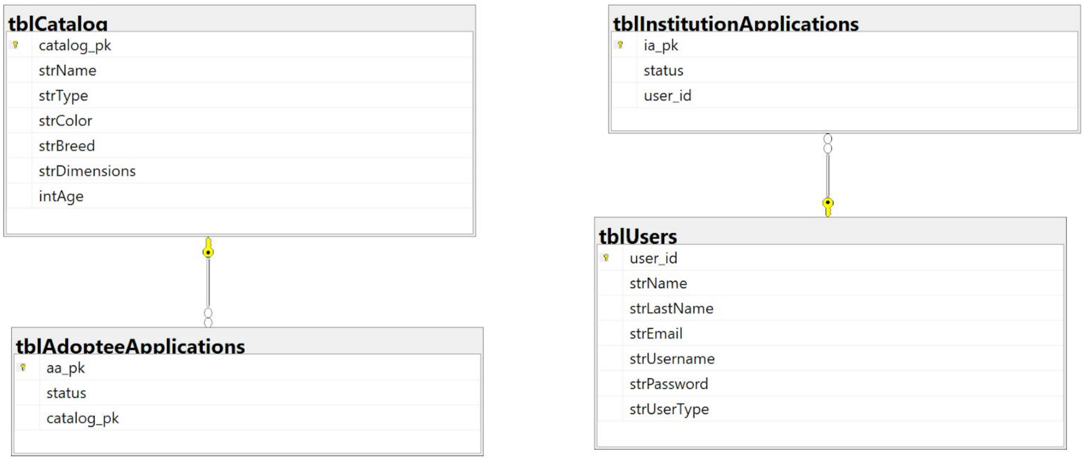
⊟ SatoricanAppDB
  ⊞ Database Diagrams
  ⊟ Tables
    ⊞ System Tables
    ⊞ FileTables
    ⊞ External Tables
    ⊞ Graph Tables
    ⊞ dbo.tblAdopteeApplications
    ⊞ dbo.tblCatalog
    ⊞ dbo.tblInstitutionApplications
    ⊞ dbo.tblUsers
```

The entity-relationship diagram (ERD) created for these tables (shown below) illustrates how these entities are related to each other and maps the flow of information we plan to process in the application. Database tables and ERD are implemented using SQL Server with SQL Server Management Studio (SSMS).



tblCatalog
- catalog_pk
- strName
- strType
- strColor
- strBreed
- strDimensions
- intAge

tblAdopteeApplications
- aa_pk
- status
- catalog_pk

tblInstitutionApplications
- ia_pk
- status
- user_id

tblUsers
- user_id
- strName
- strLastName
- strEmail
- strUsername
- strPassword
- strUserType

Roles:

- **Luis D. Gonzalez** - Front End / UI Design
- **Victor M. Baez** - Front End / UI Design
- **Zulmarie Jiménez** - Back End / Database integration
- **Arnaldo Villarrubia**- Back End / Database integration
- **Efraín Oliveras** - Back End
- **Angel Ortiz** - Back End