MIDDLE EAST TECHNICAL UNIVERSITY
NORTHERN CYPRUS CAMPUS

Computer Engineering Program

CNG 495

FALL – 2023

TERM PROJECT PROPOSAL

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Project Title: METU NCC Pet Adoption Platform

Aim:

A cloud-based project called the Pet Adoption Project for Campus Animals aims to improve and expedite the adoption procedure for animals on campus. The goal of the initiative is to establish a comprehensive platform that links adoptable animals on campus with prospective adopters. The project will hold a centralized database with profiles of the available animals complete with comprehensive details about their temperament, health, and history using cloud technologies. By enabling smooth communication between adopters, caregivers, and animal shelters, this platform will guarantee effective coordination and information exchange. The application process will be streamlined, sensitive information will be managed in a safe environment, and real-time updates on animal availability The ultimate objectives are to raise the percentage of college animals that are adopted, enhance their general wellbeing, and promote a feeling of community involvement in animal welfare on campus will be made possible via the cloud infrastructure.

Project Objectives:

- Developing a user-friendly web or mobile platform that connects animal lovers with adoptable homeless animals.

- Enabling users to create profiles, browse animals, submit adoption applications, and interact with other users.

- Establishing a robust database infrastructure to securely store and track homeless animals.

- Ensuring high performance and scalability through cloud-based computing.

Cloud Delivery Models (SaaS, PaaS, IaaS):

Our web page for animal adoption on campus can be optimized by strategically utilizing different cloud delivery models that are customized to meet our needs. This is a summary of the various applications for which cloud service models can be used:

Software as a Service (SaaS): By implementing a SaaS model for the user-facing application, prospective adopters will be able to interact with the platform, view profiles, and submit adoption applications with ease. Installing this application locally is not necessary because it can be accessed through web browsers.

Server Management: AWS (Amazon Web Services) can be utilized.

Database: We can choose to use a managed database service to store data relating to available animals. For this, services like A secure and scalable PostgreSQL database on AWS RDS (Relational Database Service) offer effective options.

Platform as a Service (PaaS): PaaS can be extremely important for the creation and implementation of our application. Using a platform that comes with databases, development tools, and other necessary resources allows our development team to focus on functionality and coding rather than the complexities of the underlying infrastructure.

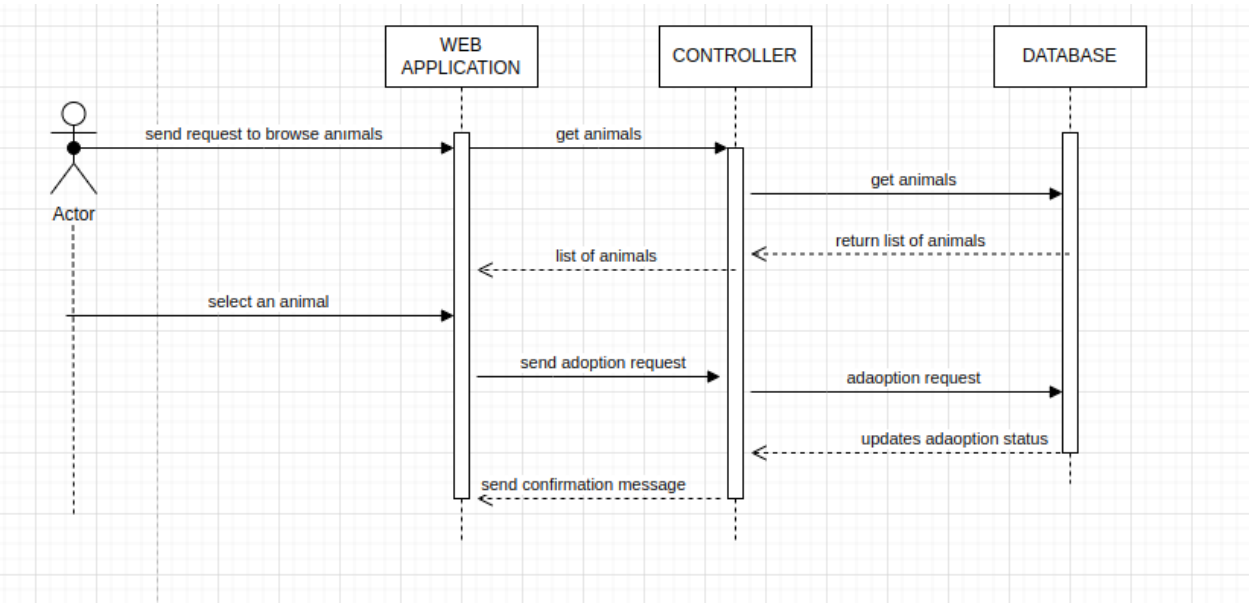
Containers: Taking use of containerization through services like Docker,Amazon Elastic Container Service might improve our application's scalability and management while offering a more efficient deployment environment.

Infrastructure as a service (IaaS): IaaS can play a key role in providing the project with the database, storage, and processing resources it needs. This paradigm makes it possible to scale resources as needed, guaranteeing that the platform will always be dependable and responsive even during periods of high usage.

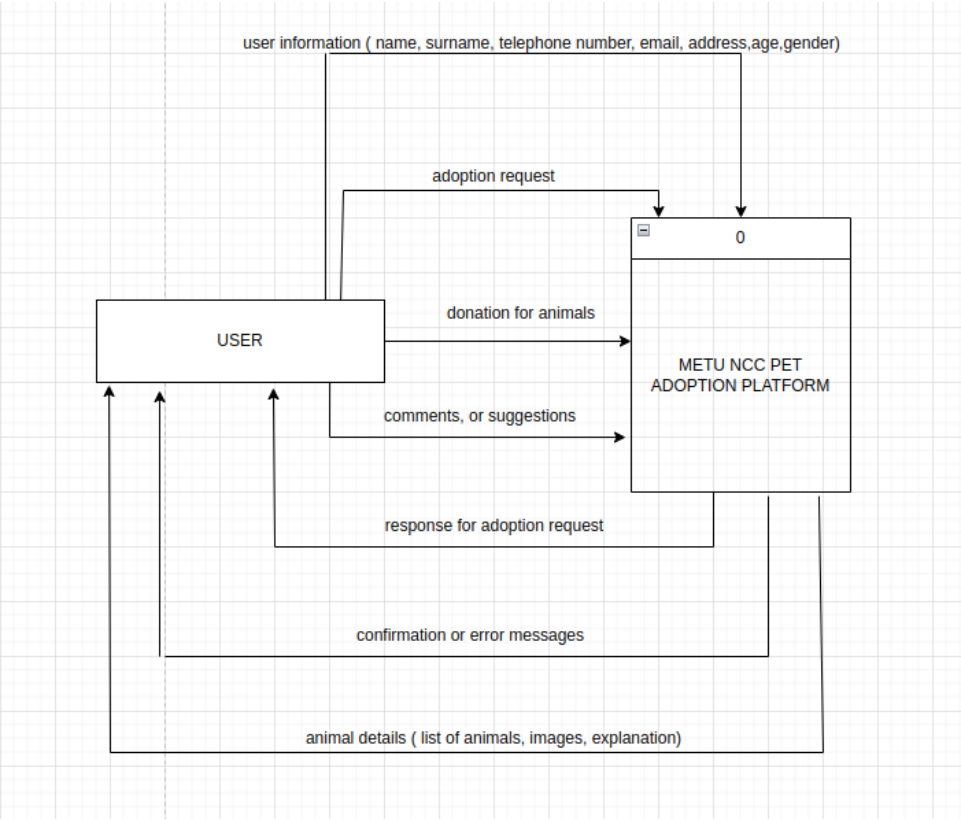
Content Delivery Network (CDN): We might think about putting in place a CDN service like Amazon CloudFront to improve the speed and availability of our website. By decreasing latency, optimizing overall page responsiveness, and caching content at edge points, this improves user experience.

Front-End Development:A web interface developed using React.js.

Client-Server Interaction:



Data Flow Level 0 Diagram:



Data Types:

Different types of data, such as binary and text, can be used to store and manage different kinds of information on METU NCC Pet Adoption Platform. These data types could be used in the following ways:

Binary Data:

Pictures and Multimedia: Pictures of animals up for adoption are frequently stored in binary data. The visual data of the animals is represented by a binary blob in each image file. When the animal profiles are displayed on the webpage, these images can be saved in a binary format (JPG, PNG, etc.) and retrieved.

Files and Documents: Documents pertaining to adoption procedures, such as PDFs with forms, adoption guidelines, or animal health records, can be stored in binary data.

Text Data:

Animal profiles: Text data can be used to store details about individual animals, such as their name, age, description, and other details. As a result, it is simple to retrieve and display on the webpage.

User Data: When prospective adopters submit applications, text data is necessary to store user data like names, contact details, and adoption preferences.

Web Page Content: Text data is used to store the textual content of the web page, such as instructions, descriptions, and any educational resources.

Results and Expected Benefits:

Upon completion of this project, the process of finding homes for animals in campus shelters will become more efficient, improving the living conditions of these animals. Simultaneously, the adoption process will become more accessible for potential pet owners, including students and campus staff, facilitating a quicker and safer transition for campus animals into new homes.

Project Stages:

Analysis and Planning: All team members will be work on this part.

-Assess the needs of existing animal shelters and caregivers on campus.

-Understand and identify opportunities to improve pet adoption processes.

Technological Infrastructure Development: Şevval Serra Kantar and Esra Nur İmdat will be focus on this part.

-Choose an appropriate cloud service provider (AWS, Azure, Google Cloud, etc.).

-Establish technical infrastructure for databases, security measures, and scalability.

User Interface Development: Zeycan Demirdağ will be focus on this part.

-Integrate animal shelters, caregivers, and pet owners into the platform by designing a user-friendly web interface.

Enhance Communication: All team members will be work on this part.

-Increase user interaction by adding features such as live chat, notifications, and interaction tools.