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## **2. INTRODUCTION**

In today's fast-paced digital world, mobile applications have become an essential part of daily life, simplifying tasks and bringing services to users' fingertips. **Empetz** is a mobile application developed with the aim of creating a dedicated platform for **buying, selling, and adopting pets.**

The app serves as a virtual marketplace where pet lovers and pet owners can conveniently connect. It allows individuals to list pets for sale, browse available pets based on categories like dogs, cats, birds, and fish, and directly communicate with sellers or buyers. Empetz also promotes animal welfare by providing a special section for pet adoptions, helping homeless animals find loving families.

This project was undertaken to address the lack of a specialized, user-friendly, and reliable platform for pet transactions in the local market. The app is designed with a clean and intuitive interface to ensure a seamless user experience, making it easy for users of all age groups to navigate and manage pet listings.

With features like **user registration, pet category browsing, search and filter options, and wishlist creation**, Empetz aims to become the go-to app for pet enthusiasts.

The development of Empetz incorporates modern mobile development technologies, offering a secure and efficient environment for pet trade and adoption, ultimately contributing to better care and responsible pet ownership in the community.

## **2.1 purpose**

The primary purpose of the **Empetz** mobile application is to provide a dedicated, user-friendly, and reliable platform for **buying, selling, and adopting pets**. The app is designed to simplify the process of pet transactions by connecting pet owners, buyers, breeders, and animal lovers in a single digital space.

Empetz aims to:

- Help pet owners easily list their pets for sale or adoption.
- Enable users to browse and search for pets based on categories, breed, age, location, and price.
- Promote responsible pet ownership and animal welfare through a dedicated **pet adoption section**.
- Provide a secure and convenient environment for users to connect, communicate, and exchange pet-related information.

By bringing together pet buyers and sellers, Empetz not only facilitates pet transactions but also supports the well-being of animals by ensuring they find suitable and caring homes.

## **2.2 scope**

The **Empetz** mobile application is designed to serve as a digital platform that connects pet buyers, sellers, and adopters in a single, user-friendly environment. The scope of this app extends across various functions and opportunities within the pet care and animal welfare sector.

- Buying and Selling Pets:**

Empetz enables users to easily list and browse pets for sale, categorized by species, breed, age, and price. This eliminates the need for physical pet markets and makes pet transactions more convenient.

- Pet Adoption:**

The app offers a dedicated section for pet adoption, where animal shelters or individuals can list pets available for free adoption. This encourages responsible pet ownership and helps reduce stray animal populations.

- **User Registration and Profile Management:**  
Empetz provides a secure platform where users can create profiles, manage their pet listings, view favorites, and track communication with potential buyers or sellers.
- **Search and Filter Options:**  
Users can efficiently search for pets based on specific filters like pet type, breed, location, age, and price, making the pet discovery process faster and more effective.
- **Direct Communication:**  
The app allows buyers and sellers to communicate directly through an in-app messaging feature, ensuring safe and hassle-free interactions before transactions.
- **Location-Based Listings:**  
Users can view pet listings based on their geographic location, allowing for easy access to nearby sellers and breeders.
- **Promoting Animal Welfare:**  
Empetz contributes to animal welfare by providing a platform for ethical pet sales and promoting pet adoptions, ensuring animals are placed in caring homes.

## **2.3 objectives**

The primary objective of **Empetz** is to develop a user-friendly and efficient mobile application that acts as a digital platform for buying, selling, and adopting pets. The app is designed to simplify pet-related transactions while promoting responsible pet ownership and animal welfare.

### **Main Objectives:**

- 1. To provide a dedicated platform for pet buying, selling, and adoption**

Establish a centralized mobile application where pet owners, breeders, buyers, and adopters can connect conveniently.

- 2. To simplify the process of pet listing and discovery**

Allow users to easily post pet listings with details like breed, age, price, and images, and enable buyers to search for pets based on specific filters.

- 3. To promote pet adoption and animal welfare**

Include a special section for free pet adoptions to support animal shelters and encourage the adoption of homeless animals.

- 4. To ensure secure and direct communication between buyers and sellers**

Integrate a chat feature to facilitate safe and private conversations before completing transactions.

**5. To provide location-based pet listings for easier access**

Help users find pet sellers and breeders in their local area through location-aware services.

**6. To develop a user-friendly and accessible mobile application**

Design an intuitive interface that can be easily navigated by users of all age groups and technical backgrounds.

**7. To support ethical and responsible pet ownership practices**

Promote awareness about animal care, adoption, and ethical pet sales through app features and content.

**8. To create a scalable and secure digital platform for future enhancements**

Build a flexible application infrastructure that can be expanded in the future to include additional services like pet healthcare, grooming, and accessories.

## **3.FUNCTIONAL REQUIREMENTS**

**Functional requirements** are the specific features, services, and actions that a system or application must perform to fulfill its intended purpose. They describe **what the system should do** — the core functionalities that users expect when interacting with the application.

### **3.1 Primary actors of the system**

**Actors** in a system are the people, groups, or external systems that interact with the application. In **Empez**, the primary actors are the main users and entities directly involved in performing actions within the app.

#### **List of Primary Actors:**

##### **1. Buyer**

- A user who uses the app to browse pet listings, search for specific pets, add favorites, contact sellers, and adopt pets.

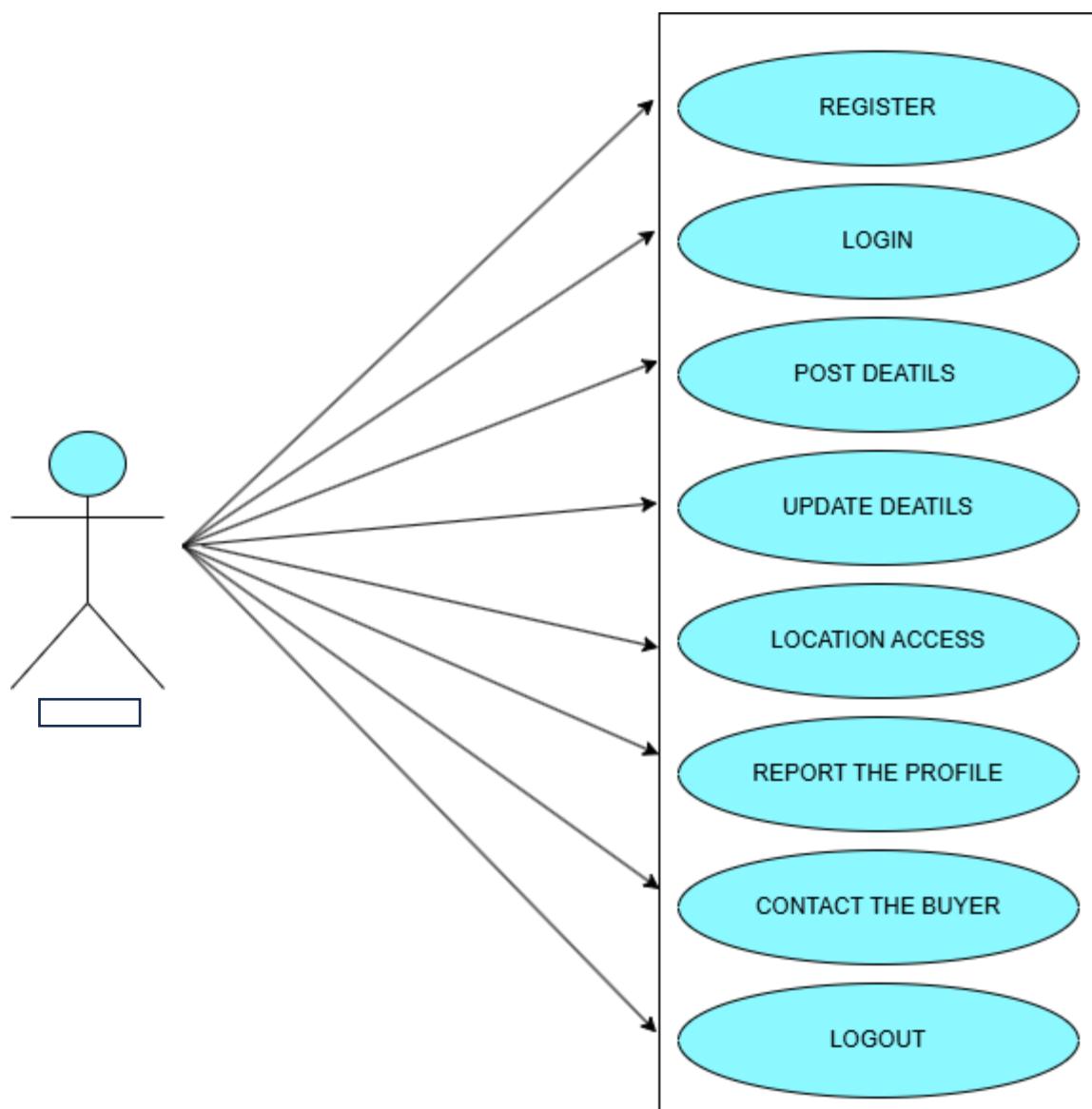
##### **2. Seller**

- A user who uses the app to post new pet listings, edit existing listings, delete listings, and communicate with potential buyers or adopters.

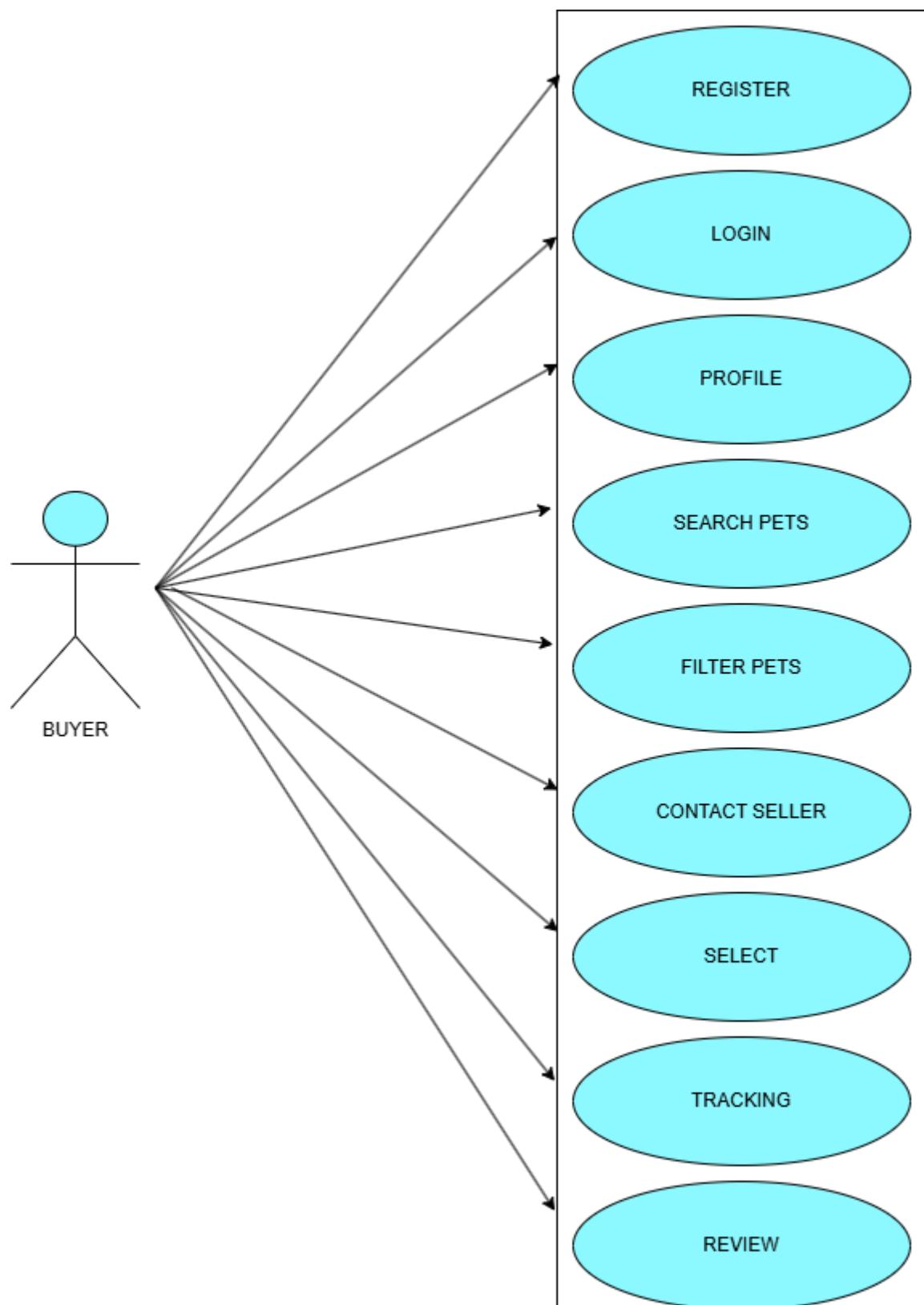
## 3.2 Use case Diagrams

A **Use Case Diagram** is a visual representation that shows the **interactions between the users (actors)** and **the system (your app)**. It illustrates **what actions or functions users can perform** in the system.

### 3.2.1 seller



### 3.2.2 Buyer



## **3.3 User Stories**

**User stories** are short, simple descriptions of a feature told from the perspective of an end-user or stakeholder of the system.

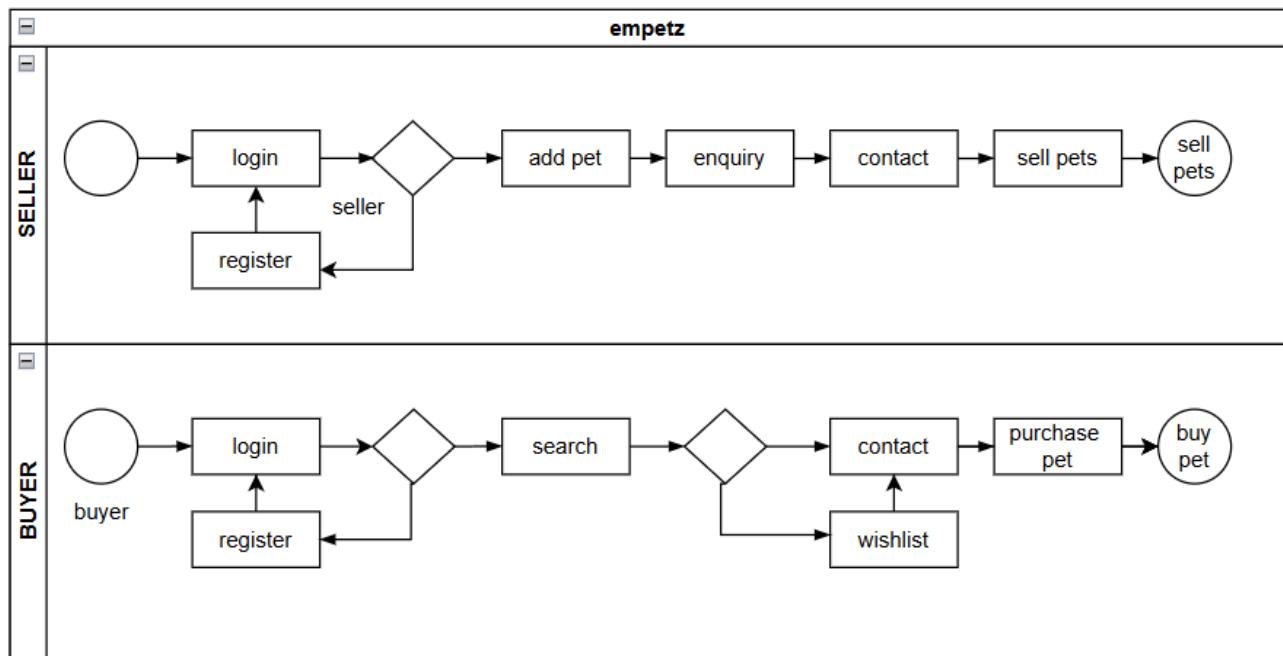
### **3.3.1 Buyer**

AS A [TYPE OF USER]	I NEED TO [DO SOME WORK]	SO THAT I CAN [GET SOME RESULT]
Pet buyer	Register into the application by entering details	Register in to application
Pet buyer	Login to the application by entering details	Able to use the application
Pet buyer	Search pets	Get various pet details
Pet buyer	Filter pets	Get details the pets i want
Pet buyer	Select the pet and breed	Get the detailed information about the selected pet
Pet buyer	Contact the seller	Contact the seller and make price negotiation and confirm order
Pet buyer	Tracking	Track the location of the order I placed
Pet buyer	Review option	Post a review about the order for better experience

### 3.3.2 Seller

AS A [TYPE OF USER]	I NEED TO [DO SOME WORK]	SO THAT I CAN [GET SOME RESULT]
Pet seller	Register into the application	I can able to use the application
Pet seller	Login into the application	the app recognizes and gives access to registered account
pet seller	post the details of pet for selling	buyer can view the pet details
Pet seller	Update the details of pet	Update the vaccination,dispatch details of dog
pet seller	add location to the application	so buyer can easily got the location
Pet seller	Report the profile	Any spam account detected
Pet seller	Contact the buyer	For communication
Pet seller	Logout from application	Logout from all the accounts
Pet seller	Register into the application	I can able to use the application
Pet seller	Login into the application	the app recognizes and gives access to registered account

## 3.4 Business Process Diagram



## 4. NON-FUNCTIONAL REQUIREMENTS

These requirements focus on the performance, security, reliability, usability, and other aspects that define the **overall experience of using the application**.

### List of Non-Functional Requirements:

#### 1. Performance Requirements

- The application shall load pet listings and search results within **3–5 seconds**.

- The app shall be capable of handling **multiple users simultaneously without crashing**.

## 2. Security Requirements

- The application shall provide **secure user authentication** for login and registration.
- User data and personal information shall be **stored securely and protected against unauthorized access**.
- Only registered users shall be able to **add, edit, or delete pet listings and chat with other users**.

## 3. Usability Requirements

- The application shall have a **simple, clean, and intuitive user interface** that is easy to navigate for all age groups.
- The app shall provide **clear instructions, labels, and icons** to guide users through various actions.
- The application shall be **compatible with both Android and iOS devices**.

## 4. Availability Requirements

- The application shall be available for use **24/7 without interruptions**, except during planned maintenance.

- The system shall notify users in advance about **scheduled maintenance periods**.

## 5. Reliability Requirements

- The application shall **Maintain data consistency** even in the event of unexpected shutdowns.
- The app shall recover gracefully from minor system failures without losing critical data.

## 6. Scalability Requirements

- The application shall be designed to handle an **increasing number of users and pet listings** without performance degradation.
- The system architecture should allow for the **future integration of additional services** like veterinary appointments, pet grooming, and pet accessories sales.

## 7. Maintainability Requirements

- The application code shall be **well-documented and modular** to allow easy updates, bug fixes, and feature additions.
- Future enhancements should be implementable with **minimal changes to the existing system**.

## 8. Notification Requirements

- The system shall send **timely push notifications** for new messages, pet listing approvals, adoption requests, and important updates.

## 5.TECHNICAL REQUIREMENTS

Processor	AMD Ryzen 5 5600H with Radeon Graphic
Installed RAM	8.00 GB
System Type	64-bit operating system, x64-based processor
OS	Windows 11
Front end	Flutter SDK
Backend	Visual studio with ASP.NET
Database	Microsoft SQL server
Testing	Android Studio

## 6.CONCLUSION

The **Empez mobile application** was developed to address the growing need for a dedicated, user-friendly, and reliable platform for **buying, selling, and adopting pets**. In a generation where digital platforms have transformed everyday transactions, Empetz offers pet lovers and pet owners a convenient way to

connect, communicate, and engage in pet-related transactions from anywhere, at any time.

The application successfully integrates essential features such as **user registration, pet listing management, search and filter options, adoption services, direct messaging, and location-based listings** within a simple, clean, and intuitive interface. By providing a dedicated **adoption section**, Empetz also contributes to **animal welfare** by helping homeless pets find loving homes.

The project demonstrates how modern mobile technology can be leveraged to create solutions that are not only commercially useful but also socially responsible. With future expansions like veterinary services, pet accessories sales, and grooming bookings, Empetz holds potential to grow into a comprehensive pet care platform.

In conclusion, **Empetz serves as an effective and practical tool for pet owners, buyers, and animal welfare organizations**, making the process of pet transactions seamless, safe, and accessible in the digital age.

