EMPETZ

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1. Table of Contents

2. Introduction

EMPETZ is a user-friendly mobile application designed to connect pet lovers with pet sellers in a trusted and convenient digital marketplace. The platform facilitates seamless interactions between Buyers, Sellers, and the Platform Admin, creating an organized system for pet adoption and sales

Whether you're a pet owner looking to sell or rehome a pet, EMPETZ provides all the essential tools for secure communication, smooth listings, and hassle-free transaction management.

2.1 Purpose

- To create a trusted platform for buying and selling pets.
- To simplify pet rehoming and adoption through digital means.
- To ensure secure communication between buyers and sellers.
- To support responsible pet ownership and sales.

2.2 Scope

- Buyer registration, login, dashboard, pet search, wishlist, and direct calling features.
- Seller registration, login, dashboard, pet listing (image, name, breed, price), and buyer request handling.
- Admin functionalities for user verification, listing management, and complaint/report monitoring.
- Support for all common pet categories (dogs, cats, birds, etc.).
- Accessible through Android mobile devices.

2.3 Objectives

- To provide a secure and easy-to-use pet marketplace.
- To allow buyers to search and connect with sellers easily.
- To help sellers manage pet listings and communicate with interested buyers.
- To enable the admin to verify users and approve listings.
- To reduce fraudulent activity through admin control and monitoring.
- To offer a smooth user experience for all users (buyers, sellers, admin).
- To ensure each transaction is transparent and traceable.

3 .Functional Requirements

3.1 Primary actors of the system

Buyer,Seller,Admin

1. Buyer (Pet Lover / Adopter)

The Buyer is an individual seeking to adopt or purchase a pet through the app. This user interacts with the system to explore pet listings, communicate with sellers, and complete the adoption or purchase process.

Key Interactions:

- Register and log in to their account
- Search and filter available pets
- View detailed pet profiles
- Add pets to wishlist
- Chat with sellers
- Place adoption or purchase requests
- Track order or adoption status

2. Seller (Pet Owner / Breeder / Rescue Center)

The Seller is a user who lists pets for adoption or sale on the EMPETZ platform. This actor manages pet listings, communicates with buyers, and updates pet availability.

Key Interactions:

- Register as a seller
- Create and manage pet listings
- Upload pet images and information
- Respond to buyer queries
- Accept or decline adoption/sale requests
- Update status of pets (available, adopted, sold)
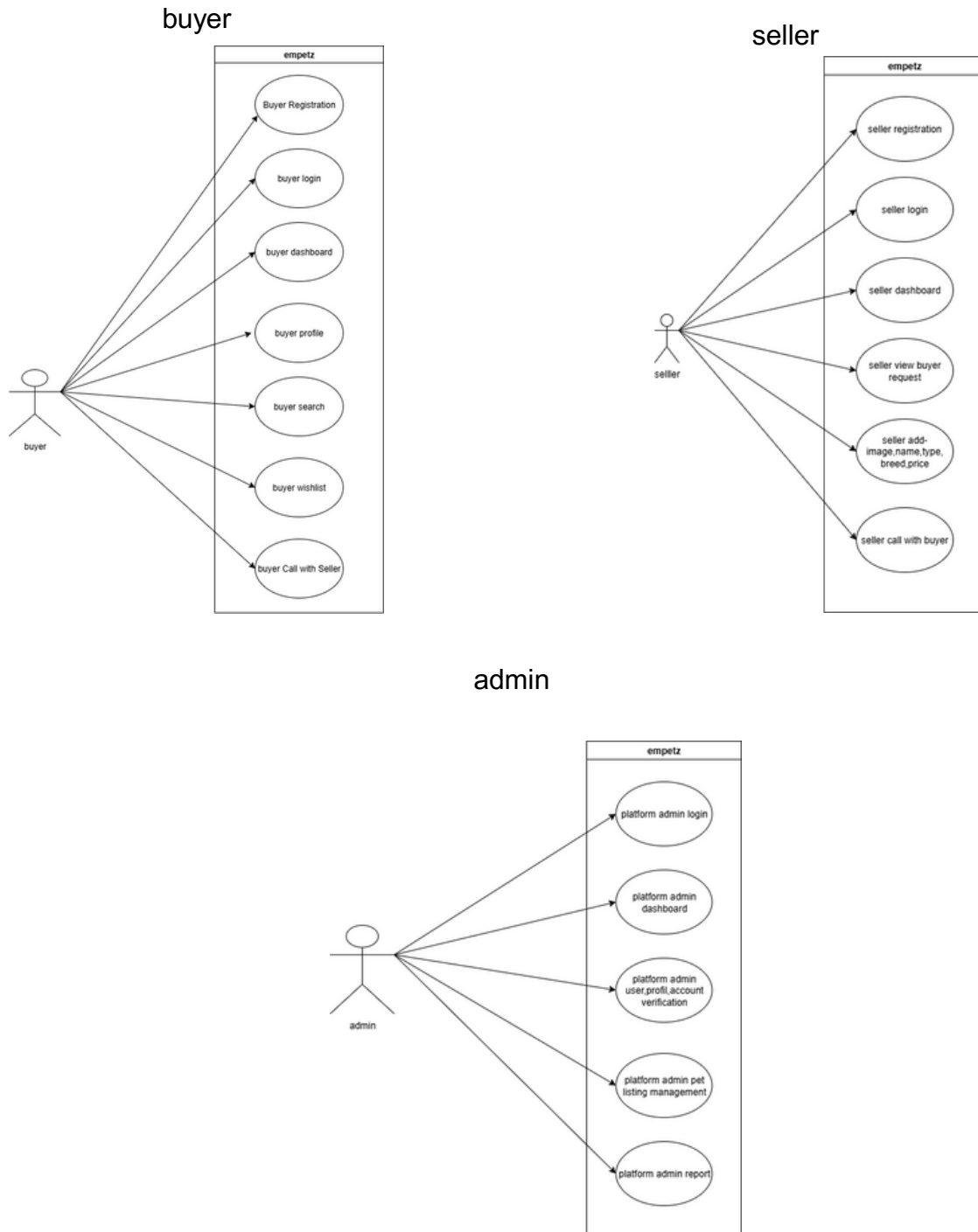
3. Admin (System Administrator)

The Admin oversees and manages the entire platform. This actor ensures that all activities on the app adhere to policies and that both buyers and sellers operate responsibly and safely.

Key Interactions:

- Manage user accounts (buyers and sellers)
- Verify seller identities and pet listings
- Moderate reports and handle user complaints
- Remove inappropriate content or suspend users
- Monitor system usage and performance
- Generate platform analytics and reports

3.2 USE CASE DIAGRAM

The EMPETZ platform connects pet buyers and sellers through a secure and interactive mobile application. It involves three main actors: Buyer, Seller, and Platform Admin, each with specific functionalities and roles in the system.

buyer

seller
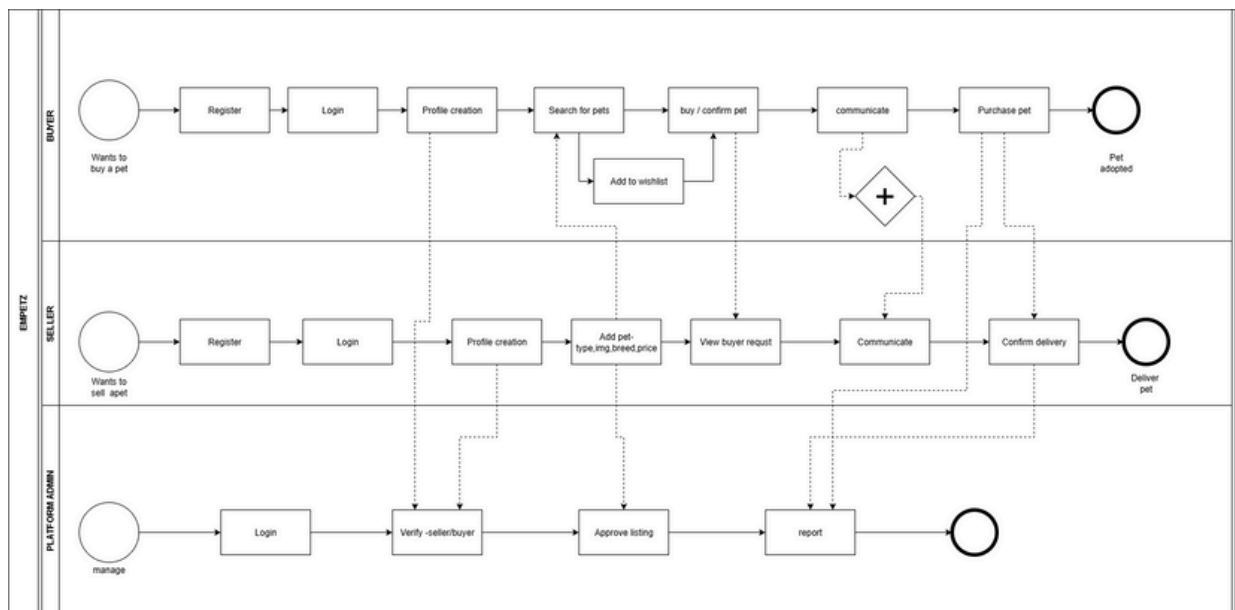

admin

3.3 User Stories

As a	I need to	So that i can
buyer	Register an account.	Start using the app to browse and buy pets.
buyer	Log in to my account	Access my dashboard and features securely.
buyer	Access the buyer dashboard.	View my wishlist, messages, and past activities
buyer	Create and update my profile.	Let sellers know my preferences and build trust.
buyer	Search pets by type, breed, etc.	Find the perfect pet for my needs
buyer	Buy a pet or send a request to the seller.	Begin the purchase process and secure the pet
buyer	Add pets to my wishlist.	Save pets I'm interested in forfuture purchase
buyer	Chat with sellers directly.	Ask questions and negotiate before buying
seller	Register an account.	Jointhe platform to list pets forsale.
seller	Log in to my account.	Access my seller dashboard and manage listings.
seller	Access the seller dashboard.	View buyer requests, manage listings, and chat.
seller	View and respond to buyer	Connect with interested

	requests.	buyers and sell pets.
seller	Add pet listings with images, name, type, breed, and price.	Attract buyers with detailed pet information.
seller	Chat with buyers.	Clarify doubts, negotiate prices, and close deals.
Platform admin	Log in to the admin panel.	Securely access the admin tools.
Platform admin	Access the admin dashboard	Monitor user activity, listings, and reports.
Platform admin	Customize search filters.	Improve user experience for buyers and sellers.
Platform admin	View and respond to reports.	Take action against inappropriate or fake listings.
Platform admin	Manage pet listings.	Approve, reject, or edit listings to maintain quality.

Platform Admin	Manage users and their profiles.	Suspend, verify, or review accounts as needed.
Platform Admin	Verify user identities/accounts.	Ensure only real users and legitimate sellers are on the platform.

3.4 Business Process Diagram

In the Empetz BPMN process, the Buyer and Seller perform a series of user tasks within their respective pools—starting from registration and login—where the Buyer searches for pets, adds to wishlist, and performs purchase tasks, while the Seller adds pet listings, waits for listing approval by the Platform Admin (service task), views buyer requests, and confirms delivery, with message flows facilitating communication between participants and the Platform Admin handling verification and approval through service and manual tasks to ensure process completion via appropriate end events.

4.Non-Functional Requirements

1. Speed & Performance
   - The app should open quickly and load pet listings without delay.
   - All screens (search, profile, wishlist, etc.) should work smoothly.
2. User-Friendly Design
   - The app should have a simple, clean, and easy-to-use interface.
   - Users should be able to understand and use all features without confusion.
3. Reliability
   - The app should work properly without crashing or freezing.
   - Features like login, search, and wishlist should work every time the app is opened.
4. Security
   - User information (like name, phone number, etc.) must be kept private and protected.
   - Only the correct user should be able to access their account.
5. Compatibility
   - The app should work well on most modern Android and iOS phones.
   - It should fit properly on different screen sizes.
6. Availability
   - The app should be available to use at all times (24/7), without frequent downtime.
7. Maintainability
   - The app should be easy to update in the future (like adding new features or fixing bugs).
8. Data Accuracy
   - All pet details (breed, age, price, etc.) shown to users should be correct and up to date.

5. Technical Requirements

Frontend:
- Framework: Flutter (Dart)
- Platforms: Android & iOS
- Libraries: provider/bloc, image_picker, flutter_svg, fluttertoast

Backend (Option A – Firebase):
- Auth: Firebase Auth
- Database: Firestore
- Storage: Firebase Storage
- Logic: Cloud Functions

OR Backend (Option B – Custom):
- Framework: Node.js / Django
- Auth: JWT
- DB: MongoDB / MySQL / PostgreSQL
- Hosting: Heroku / Render / AWS

Database Collections/Tables:
- Users, Pets, Wishlist, Purchase Requests, Reports

Auth & Roles:
- Buyer, Seller, Admin with role-based access

APIs & Integration:
- Phone Auth (OTP), Email (SendGrid), Google Maps (optional), URL launcher

Deployment & DevOps:
- GitHub, CI/CD (GitHub Actions / CodeMagic), Store deployment

Testing:
- Unit, Widget, Integration (flutter_test, mockito)

Monitoring:
- Crashlytics, Firebase/Google Analytics

6.Conclusion

The EMPETZ App provides a complete and user-friendly platform for pet adoption and sales, connecting pet lovers with responsible sellers in a safe and efficient manner. Through dedicated features for buyers, sellers, and administrators, the system ensures transparency, convenience, and platform integrity. This project has successfully addressed the need for a streamlined and trustworthy pet marketplace. Future improvements may include integration of vet services, payment gateways, and enhanced user feedback systems to further enrich the user experience.