

Petly: Virtual Pet Web Application

Summary

Petly is a modern web-based virtual pet platform that reimagines the classic Tamagotchi experience for today's users. This application enables users to adopt, nurture, and bond with digital pets through an intuitive, accessible interface. Built with cutting-edge web technologies, Petly addresses the growing demand for engaging, persistent virtual pet experiences while providing a seamless cross-platform experience.

Problem Statement

Current virtual pet applications face several limitations:

- Lack of persistence across browser sessions
- Poor optimization for modern web platforms
- Limited accessibility features
- Minimal social integration capabilities

Petly's Solution

Technical Architecture

- Frontend: Next.js with Zustand for efficient state management
- Backend: Firebase for reliable, scalable data storage
- Design Philosophy: Mobile-first, responsive design supporting all devices

Core Features

1. Petly Care System
 - Hunger Meter: Track your pet's physical well-being
 - Happiness Meter: Monitor your pet's emotional state
 - Tidiness Meter: Maintain your pet's living environment
2. Interactive Care Actions
 - Feeding: Multiple food options for your pet
 - Cleaning: Keep your pet's space tidy
 - Play: Build bonds through interactive activities
3. Growth Journey
 - Hatching Stage: Watch your egg develop
 - Baby Stage: Nurture your newly hatched companion

Project Deliverables and Goals

Primary Deliverables

1. Petly Web Application featuring:
 - Secure user authentication
 - Comprehensive pet care mechanics
 - Persistent data storage
 - Engaging animations
 - Responsive, accessible design

SMART Goals

1. Specific: Launch Petly MVP with all core features

- 2. Measurable: Implement full set of basic pet interactions
- 3. Achievable: Focus on essential features for initial release
- 4. Relevant: Create an engaging, user-friendly experience
- 5. Time-bound: Complete development within course deadline

Required Resources

Technical Infrastructure

- Next.js development environment
- Firebase backend services
- Git version control
- Figma for design assets

Petly Database Schema

Main Table (Petly)

Field	Type	Purpose
User ID	uuid	Unique user identifier
Pet Name	string	Pet's given name
Pet Type	int	Species/variant identifier
Level	int	Growth progression
Hunger	int	Health status tracker
Happiness	int	Satisfaction measure
Tidiness	int	Cleanliness tracker

Friend System Table

Structure: Key (UserID) → Value (Object of UserIDs [Friends List])

Conclusion

Petly represents a modern take on virtual pet companionship, combining engaging gameplay mechanics with contemporary web technologies. By focusing on core features while maintaining scalability, we ensure a solid foundation for future growth. The project demonstrates best practices in full-stack development while creating an accessible, enjoyable experience for users across all devices.