Torto Smart Home - Project Documentation

# 1. Mission

To build an affordable, compatible, and user-friendly smart home ecosystem with a focus on elderly-friendly usability.

# 2. Vision

To become a leading smart home brand recognized for inclusivity, reliability, and seamless integration across devices using Matter and Wi-Fi.

# 3. Fundamentals of Torto

- Affordability: Low-cost, high-value solutions  
- Compatibility: Matter + Wi-Fi ensures cross-brand interoperability  
- Usability: Simple interfaces and panic switch for emergencies  
- Reliability: Tested hardware (ESP32, Raspberry Pi)

# 4. Market Capabilities of this Segment

The smart home market is projected to grow at 10-12% CAGR globally, with India emerging as a strong market due to increasing adoption of IoT devices. Affordable and user-friendly products for elderly care remain an underserved niche.

# 5. Future of this Segment

The segment is evolving towards AI-powered decision making, seamless interoperability via Matter, and cloud-independent edge devices for privacy and speed.

# 6. Current Stage of the Project

Research has been conducted on IoT protocols such as Zigbee, Thread, and Wi-Fi. Matter was chosen as it is backed by leading companies (Apple, Google, Amazon) and ensures cross-compatibility. ESP32 was selected for prototyping due to its reliability, Wi-Fi support, cost-effectiveness, and community support. Future scope includes AI-based decision making via Raspberry Pi as a hub.

# 7. Current Prototypes and Future Prototypes

Current Prototype: Panic switch with ESP32 that sends notifications to family members via a mobile app.  
Future Prototypes: Smart switchboard, central hub (Raspberry Pi + AI), and integrations with third-party devices.

# 8. Phase 1 Explanation

Phase 1 (Day 1-14): Research IoT protocols, select ESP32, order hardware, learn Matter + Wi-Fi integration, and build the first panic switch prototype. Also, design the mobile app MVP for notifications.

# 9. Phase 2 Explanation

ESP32 will act as the Rabbit (actuator/edge device), while Raspberry Pi will act as the Torto Shell (hub). The hub will serve as a central device for APIs, database management, and AI inference. This allows scaling into a full-fledged smart ecosystem with intelligence and cross-device compatibility.

# 10. Additional Notes

- Revenue Model: Initial hardware sales + subscription for premium AI features  
- USP: Elderly-focused usability (panic switch, simplified UI)  
- Investor Ask: Seed POC funding to build working prototypes and demo units  
- Long-term Roadmap: Full suite of smart devices (lighting, energy management, safety sensors)