Clean Microservice Demo

Description:

A modular FastAPI microservice demonstrating clean software architecture, minimal unit testing, and reproducible service design.

Methodology:

REST API endpoints with Pydantic validation

In-memory database for state persistence

Minimal unit tests for functional verification

Focused on modular design and engineering discipline

Outcomes:

Showcases software engineering principles and system architecture

Demonstrates readiness for MSc-level applied software projects

Architecture Diagram:

Client → API Endpoints → Service Logic → In-Memory Storage → Response

Microservice Architecture

Client Request → API Endpoints → Service Logic → Response

Literature / Research Context:

Exemplifies modular service-oriented design

Reinforces reproducibility and test-driven development in software engineering

Future Work:

Extend microservice to include persistent database storage

Add additional service endpoints and inter-service communication

Integrate with other microservices for full-stack deployment