AgenticArchitect

Technical Documentation & Architecture

Introduction

AgenticArchitect is a local-first multi-agent system designed to transform raw requirements into production-ready AI and Data solutions. It leverages state-graph orchestration to automate the Software Development Life Cycle (SDLC).

Technical Stack

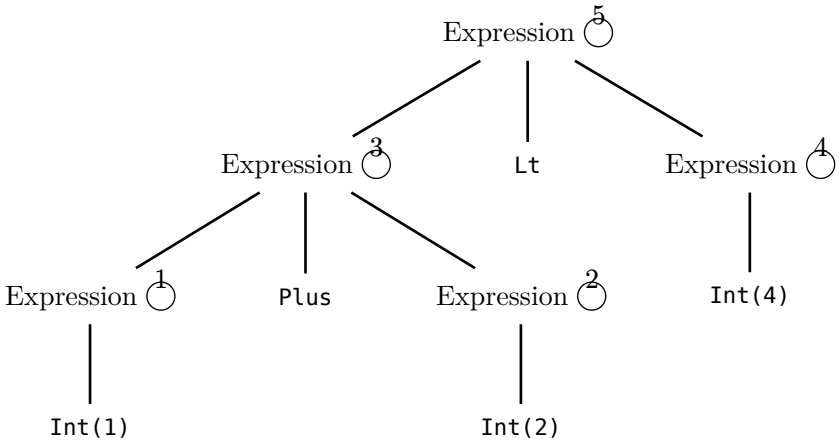
The infrastructure, managed via `devbox.json`, ensures high performance and data sovereignty:

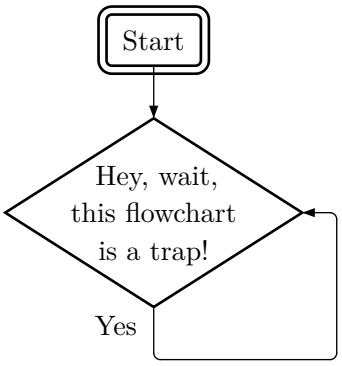
- **Orchestration**: `K3d / K3s` for local Kubernetes clusters.
- **Development**: `Skaffold` for hot-reloading and `UV` for Python management.
- **AI Framework**: `Pydantic AI` for agent logic and `Ollama` (Gemma 3:270M) for local inference.
- **Observability**: `Arize Phoenix` for tracing agentic workflows.

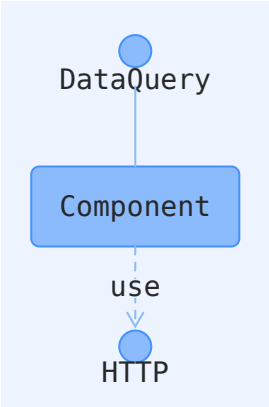
Agentic Workflow

The system operates through four specialized roles:

1. **Project Manager Agent**: Validates SMART criteria and identifies gaps.
2. **Data Analyst Agent**: Handles EDA (Exploratory Data Analysis) and synthetic data generation.
3. **Architect Agent**: Designs C4 Diagrams and Architecture Decision Records (ADR).
4. **Engineer Agent**: Implements SOLID-compliant code using TDD principles.







Quick Start

To initialize the development environment:

```
# Install tools and deploy the cluster
make install && make cluster && make setup-dev

# Start the pipeline with hot-reload
skaffold dev
```

Key Service Endpoints:

Architect App : `http://localhost:8080`

Phoenix UI : `http://localhost:6006`

Ollama API : `http://localhost:11434`

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