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## Workshop Introduction

### Building Intelligent Assistants with Contextual Knowledge

- Welcome and goals of the workshop
  - What we'll build today: an AI agent that answers Thai cooking questions
  - Live demo preview
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# What Are AI Agents with Knowledge?

- AI agents can reason, retrieve, and respond with context
- Combine curated data (like PDFs) with dynamic search tools
- Real-world use case: Thai cuisine assistant using a recipe knowledge base + web search

# Tech Stack Overview



Tool	Purpose
Agno	Agent framework with native support for knowledge bases and tools
LanceDB	Vector DB for fast embedding-based search
OpenAI GPT-4o	Powerful chat model for reasoning and natural responses
OpenAI Embedder	Semantic embedding model ( <code>text-embedding-3-small</code> )
DuckDuckGoTools	Web search plugin when local data isn't enough
PDFUrlKnowledgeBase	Pulls recipes directly from a public Thai recipe PDF
Gradio	Simple, browser-based UI to interact with the agent

# Why Agno over LangGraph?

- Agno is great for quick prototyping with high-level abstraction
- LangGraph is better for **complex agent orchestration**, workflows, and memory state control (but heavier)

Feature	Agno	LangGraph
✓ Quick to set up	✓	✗ (more config-heavy)
✓ Prebuilt tools like search, PDF KB	✓	✗ (needs manual setup)
✓ Opinionated, batteries-included	✓	✗ (more control but complex)
✓ Gradio-ready workflows	✓	✗
✓ Ideal for solo devs and educators	✓	✗

# Why These Libraries?

PDFUrlKnowledgeBase: Pulls structured content (e.g. recipes)

OpenAIEmbedder: Cost-effective, quality embeddings

LanceDB: Lightweight, serverless vector database

DuckDuckGoTools: Real-time augmentation

Gradio: Clean demo interface

# Architecture Diagram

User Query



[Gradio UI]



[Agent]

├─> KnowledgeBase (ThaiRecipes.pdf → LanceDB)

├─> Web Search (DuckDuckGo)



[GPT-4o Response]




Display Output (Gradio)

# Live Demo

- Ask: “How to make Tom Yum?”
- Ask: “Can I substitute galangal with ginger?”
- Agent responds with structured + web-backed info

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## Bonus: Extend This Agent

- Replace PDF with company knowledge base (docs, manuals)
  - Add memory for chat history
  - Add tools: APIs, image gen, task execution
  - Use LangGraph for memory/state tracking workflows
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# Conclusion

- We built a powerful agent using:
  - Agno for fast orchestration
  - A knowledge base (PDF)
  - Web tools for augmentation
- Use this pattern to build your own AI experts