

# 2-Day Workshop on

## Agentic AI: Building Autonomous AI Systems

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### Day 1: The Anatomy of an Agent (6 Hours)

#### Module 1: Foundations & Setup (1.5 Hours)

- **The "Agency" Concept:** Why a Chatbot is a ghost in a box, but an Agent is a ghost with a toolkit.
- **The 2026 Tech Stack:** Quick install of **Ollama** (for local models), **Python 3.11+**, and **VS Code**.
- **API vs. Local:** When to use Cloud (Gemini/OpenAI) vs. Local (Llama 3/Mistral).
- **Hands-on:** Running your first local LLM via terminal and making it output "Structured Data" (JSON) instead of poetry.

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#### Module 2: Reasoning Patterns (1.5 Hours)

- **Chain-of-Thought (CoT):** Forcing the model to "think step-by-step."
- **ReAct Logic:** Building the "Reasoning + Acting" loop from scratch.
- **Hands-on:** Coding a simple Python loop that takes a user's math word problem, breaks it into steps, and executes it.

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#### Module 3: Giving AI "Hands" (2 Hours)

- **Function Calling:** How to map an LLM's "intent" to a Python function.
- **The Model Context Protocol (MCP):** Using the new 2026 standard to connect AI to your computer's file system.
- **Hands-on:** Build a "**File Manager Agent**"—The student writes a Python script where the AI can create, move, and rename folders based on a voice or text command.

## Module 4: Day 1 Wrap-Up (1 Hour)

- **Prompt Injection 101:** Why you shouldn't let an agent "Delete System32."
- **Assignment:** Optimize a prompt to make the agent 100% accurate at a specific task.

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## Day 2: Multi-Agent Swarms & Real-World Apps (6 Hours)

*Goal: Orchestrating a team of specialized AI "workers."*

### Module 5: The Multi-Agent Concept (1.5 Hours)

- **Why many agents?** The "Swiss Army Knife" vs. "Specialized Tools" debate.
- **Intro to CrewAI & LangGraph:** Understanding "Roles," "Backstories," and "Tasks."
- **Hands-on:** Defining a "Researcher" agent and a "Writer" agent.

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### Module 6: Building the "Automated Newsletter" (1.5 Hours)

- **Agentic Search:** Teaching agents to browse the web for technical news.
- **Integration:** Connecting agents to a real-time Search API (like Tavily or Google Search).
- **Hands-on:** Build a team that finds the top 3 news stories in "Quantum Computing" and writes a 1-page summary.

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### Module 7: The Capstone – "The AI Software Squad" (2 Hours)

- **The Challenge:** Build a 3-agent team to solve an engineering problem:
  1. **Agent A (The Architect):** Designs a Python script for a "To-Do List" app.
  2. **Agent B (The Coder):** Writes the actual .py code.
  3. **Agent C (The Tester):** Runs the code, finds the bugs, and gives feedback to Agent B.
- **Success Metric:** The code must run without the student touching the keyboard.

## Module 8: The Future & Career Path (1 Hour)

- **The 2026 Job Market:** Why "Agentic Engineering" is replacing "Prompt Engineering."
- **Portfolio Building:** How to host your agents on GitHub.
- **Final Demo:** Students showcase their "Software Squads."

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## Module 8: The Future & Career Path (1 Hour)

- **The 2026 Job Market:** Why "Agentic Engineering" is replacing "Prompt Engineering."
- **Portfolio Building:** How to host your agents on GitHub.
- **Final Demo:** Students showcase their "Software Squads."

## Workshop charge:

2-day workshop Fee	Rs. 1500/-per Participant
	<ul style="list-style-type: none"><li>• Fee does not include GST</li></ul>

## Workshop Requirements

We would require the following facilities from the hosting institution to organize any workshop

- A seminar hall or classroom with sufficient capacity to conduct hands-on sessions for all participants.
- A good quality public address system, ideally with two cordless microphones.
- A projector, screen, and a black/white board for teaching and presentation purposes.
- To organize any workshop, we require a minimum of 60 participants
- Accommodation for one training expert.

## Contact Details - Team EduX Labs

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