At a Glance

Build a customer support chatbot using the PydanticAI framework in this practical, hands-on project. Learn how to create schema-driven agents that can structure, validate, and manage real AI interactions. Designed to sharpen your applied AI skills, this project helps you build reliable, adaptive systems through real-world support scenarios—preparing you to build smarter AI tools and innovate confidently in the field of AI development. PydanticAI has one simple aim to bring that FastAPI feeling to GenAI app development.

Regular chatbots often get confused with complicated questions or give unpredictable replies. This can lead to poor customer experiences and missed opportunities to resolve issues effectively. Traditional approaches rely heavily on prompt tuning and still don't guarantee consistent outputs, making it hard to trust AI in real business scenarios.

With PydanticAI, you can guide the AI to always respond in a clear, organized format — like assigning a ticket category, setting its urgency, and suggesting a helpful reply. By using schema-based validation, the chatbot only returns structured and meaningful data that you define ahead of time. This makes it much easier to process, store, and act on AI responses in your support system.

This project walks you through building a smart customer support chatbot using PydanticAI. You'll learn how to turn free-text questions into structured responses, prioritize support tickets, and escalate important cases — all within a clean, easy-to-maintain Python setup. It's perfect for developers who want to bring AI into customer service in a reliable and developer-friendly way.

A Look at the Project Ahead

After completing this lab you will be able to:

- Understand the core concepts of AI agentic systems and their applications.
- Learn how to use Pydantic for data modeling, validation, and serialization within agent frameworks.
- Define and implement modular, structured AI agents using the Pydantic Agentic Framework.
- Orchestrate multi-step reasoning and decision-making processes in agents.
- Integrate external tools and APIs to enhance agent capabilities.
- Design agents that are scalable, interpretable, and maintainable for real-world use cases.

What You'll Need

Let your learners know what technology and skills they'll need prior to starting this guided project. Remember that the IBM Skills Network Labs environment comes with many things pre-installed (e.g. Docker) to save them the hassle of setting everything up. Also note that this platform works best with current versions of Chrome, Edge, Firefox, Internet Explorer or Safari.