Course Overview

Hello, and welcome to the **Develop Generative AI Applications: Get Started** course.

This course is designed for aspiring AI developers, machine learning engineers, data scientists, and AI researchers. It equips you with the knowledge and skills to develop and integrate generative AI solutions. You'll explore core prompt engineering techniques, such as in-context learning, and learn to create and manage prompt templates using frameworks like LangChain.

As you progress, you'll master key LangChain concepts, including chains, tools, and agents, to build smarter AI applications. Through hands-on labs, you'll experiment with AI model configurations and develop functional AI-powered applications. By the end, you'll have the expertise to design and implement generative AI solutions effectively.

This course is part of the **IBM RAG and Agentic AI Professional Certificate**, designed to provide you with the practical skills and knowledge to excel in developing advanced AI applications that leverage retrieval-augmented generation (RAG), multimodal AI, and agentic AI systems.

Prerequisites

Python programming skills and experience are required, as the course emphasizes coding and application development. Additionally, fundamental knowledge of AI and web development is highly recommended. A strong foundation in generative AI is recommended but not required.

Objectives

After completing this course, you will be able to:

- Examine foundational concepts of generative AI and the LangChain framework, focusing on how prompt engineering and in-context learning enhance AI interactions
- Apply prompt templates, chains, and agents to create flexible and context-aware AI applications using LangChain's modular approach
- Develop a generative AI web application with Flask, integrating advanced features such as JSON output parsing for structured AI responses
- Evaluate and compare different language models to select the most suitable option for specific use cases, ensuring optimal performance and reliability