Course Name : **LangChain for Python: Building LLM Applications**
Duration : **2 Days (Physical Classroom / Virtual Live Instructor)**
Skill Level : **Beginner**

COURSE DESCRIPTION:
Embark on a transformative journey into the realm of natural language processing and artificial intelligence with our beginner-friendly course, "LangChain for Python: Building LLM Applications" This comprehensive program begins with a Python crash course, providing participants with the fundamental skills needed to delve into the world of programming and AI development. Led by industry experts Harrison Chase, the creator of LangChain, and renowned AI researcher Andrew Ng, this course introduces participants to the LangChain framework, empowering them to harness the power of language models for application development.

Throughout this one-hour course, participants will explore essential topics such as models, prompts, and parsers, gaining hands-on experience in calling language models, managing memories, and constructing chains of operations. By the course's end, participants will not only have a solid understanding of LangChain's capabilities but also possess the skills to develop their own intelligent applications, paving the way for exciting opportunities in the ever-evolving field of artificial intelligence.

WHAT WILL YOU LEARN?
In this course, participants will acquire essential skills in utilizing the LangChain framework to develop sophisticated language model applications with Python. Through a Python crash course, they will grasp foundational programming concepts before delving into LangChain's functionalities, including model invocation, prompt provision, and response parsing. Participants will also explore the implementation of memories for conversation storage, the construction of sequential operations chains, and the application of language models for document-based question answering. By the course's conclusion, learners will emerge equipped with the knowledge and proficiency to create intelligent applications leveraging LangChain, thereby unlocking exciting possibilities in AI-driven development.

PREREQUISITE:
Beginners. We cover the Python Fundamentals.

METHODOLOGY:
This program will be conducted with interactive lectures, PowerPoint presentations, discussions, and practical exercises. This course can be conducted as instructor-led (ILT) or virtual instructor-led training (VILT).

JOB SCOPE:
Upon completion of this course, candidates may pursue the following career paths:

- AI Developer
- Chatbot Developer
- LLM Developer
- NLP Engineer

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MODULE 1: PYTHON CRASH COURSE

- Welcome
- Introduction to Python: Fundamentals
- Variables, Data Types, and Operators
- Control Flow: Conditionals and Loops
- Functions and Scope
- Lists, Dictionaries, and Sets
- File Handling and Exception Handling
- Introduction to Libraries: Importing and Using Modules

MODULE 2: INTRODUCTION TO LANGCHAIN FOR LLM APPLICATION DEVELOPMENT

- Welcome and Course Overview
- Understanding the LangChain Framework
- Exploring the Use Cases and Capabilities of Language Models in Application Development

MODULE 3: MODELS, PROMPTS, AND PARSERS

- Calling Language Models (LLMs) with LangChain
- Providing Prompts for Model Input
- Parsing Model Responses for Desired Outputs

MODULE 4: MEMORIES FOR LLMS

- Implementing Memories to Store Conversations
- Managing Limited Context Space for Improved Performance

MODULE 5: CHAINS: SEQUENCES OF OPERATIONS

- Creating Chains to Execute Sequential Operations
- Building Complex Workflows with Chained Operations

MODULE 6: QUESTION ANSWERING OVER DOCUMENTS

- Applying Language Models to Proprietary Data
- Utilizing LLMs for Document-based Question Answering

MODULE 7: AGENTS: LLMS AS REASONING AGENTS

- Exploring the Concept of LLMs as Reasoning Agents
- Harnessing the Power of LLMs for Intelligent Decision Making

MODULE 8: CHALLENGES AND SOLUTIONS

- Super Challenge: Implementing RunnableSequence
- Solution Walkthrough for Super Challenge
- Wiring up the User Interface: Connecting Frontend with LangChain Backend

CONCLUSION

- QA
- Recap of Key Concepts Covered in the Course

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