

Introduction to the Course

Instructor

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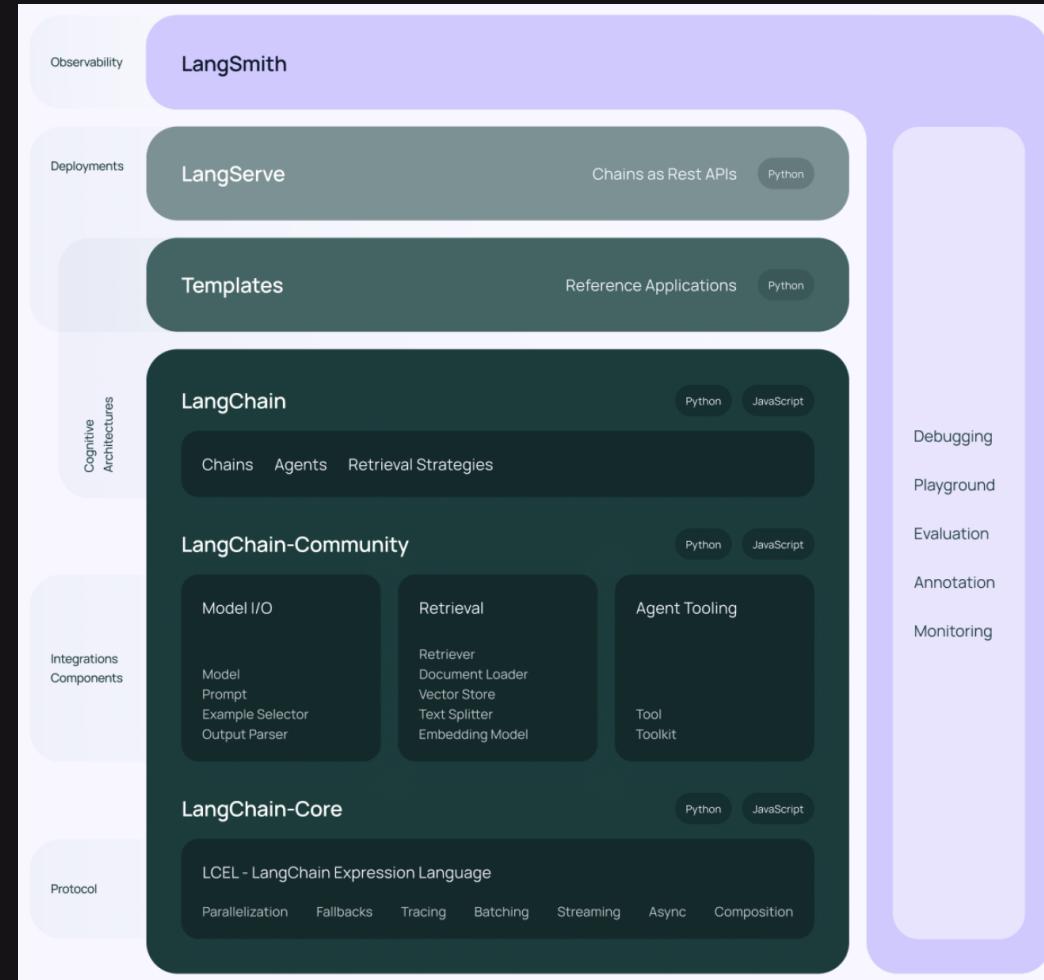
Course Outline

- Explore the LangChain Ecosystem
- Discover Langchain Libraries
- Set Up the Development Environment
- Cover Key Topics
- Focus on core Aspects of the Course

Course Objectives

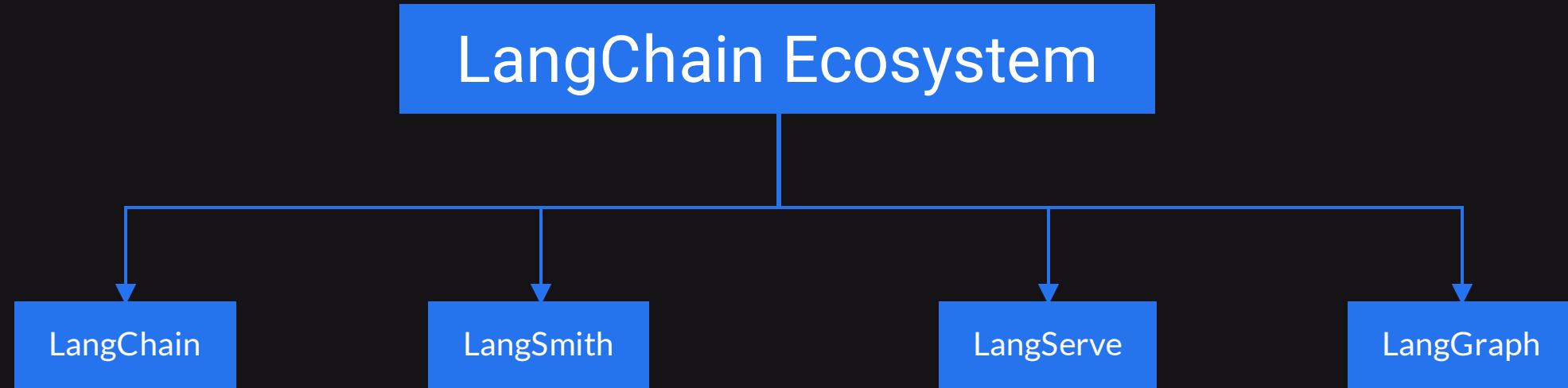
- Overview: Understand the LangChain Ecosystem
- Setup: Configure LangChain for LLM Application Development
- Evolution: Compare LangChain Then vs. Now
- Understanding Core Components of LangChain
 - Handling LLM Input / Output
 - Retrieval
 - Legacy and LCEL Chains and Their Applications
- Deployment and Monitoring

The LangChain Ecosystem



The complete LangChain Ecosystem

The LangChain Ecosystem



Connect, Prompt, and
build applications and agents

Monitor and evaluate LLM applications

Deploy and serve
LLM applications

Build language
agents as graphs

Quick Peek into LangChain Libraries

langchain-core

Contain key components, functions, and chains to build LLM applications, tools and agents

langchain-openai
langchain-google-genai
langchain-aws
langchain-google-vertexai
langchain-anthropic

Access commercial LLMS

langsmith
langserve
langchain-cli

Deploy, evaluate, and monitor LLM applications

langgraph

Combine multiple chains and agents as graphs

langchain-community

Access Open LLMS, Vector DBs and more

Development Environment



Google Colab or a Python environment for running your code just like JupyterLab



Key Topics

- Handling LLM Input \ Output
 - How to interface with LLMs
 - Prompt templates and inputs
 - Formatting outputs with output parsers
- Retrieval
 - Document loaders
 - Document splitters and chunker
 - Embedding models
 - Vector Databases
 - Retriever

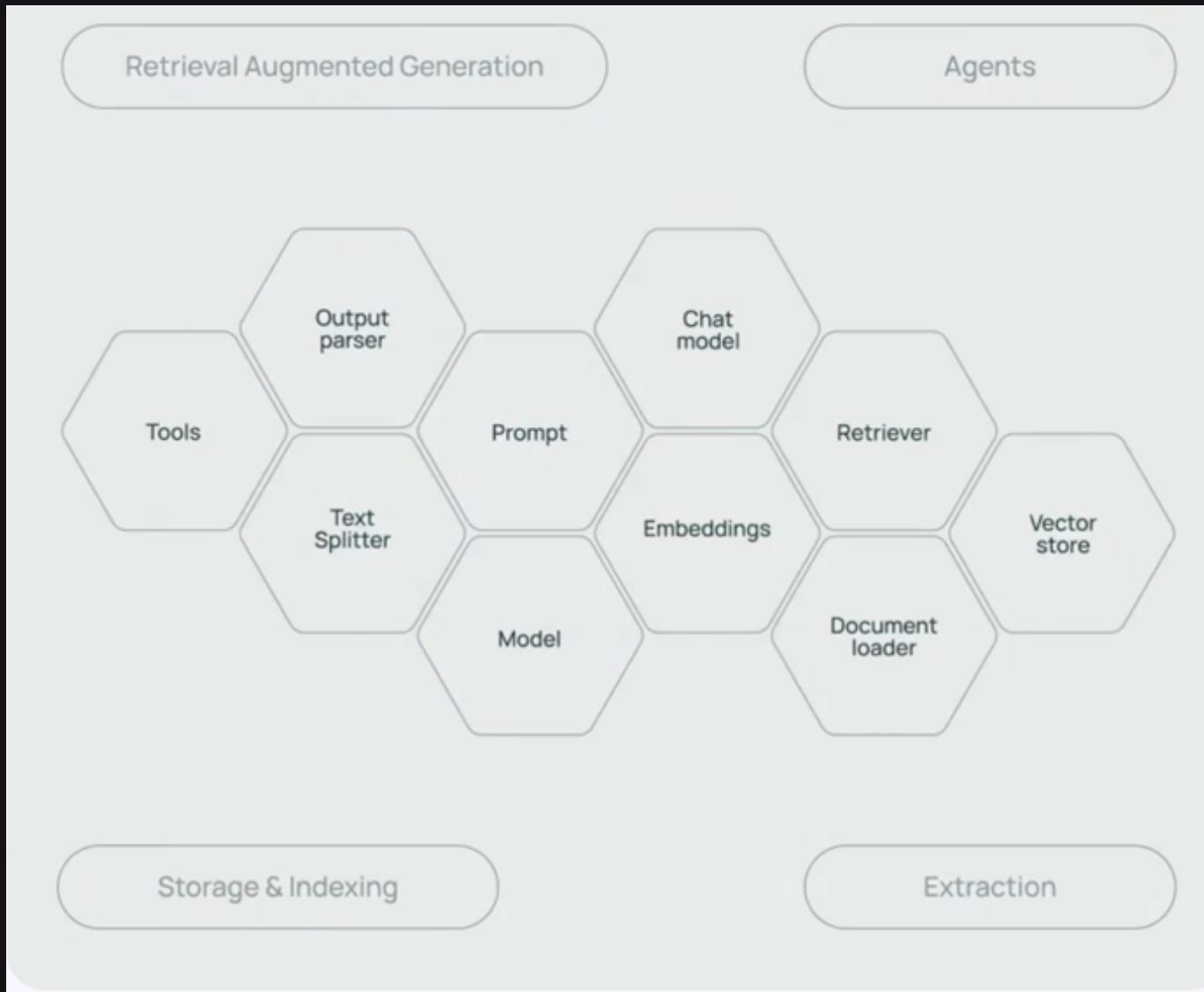
Key Topics

- Tools and Agents
 - LangChain Tools
 - LangChain Agents
 - Agents with LangGraph
 - Building AI Agents
- Chains
 - Legacy Chains
 - LCEL Chains
 - Simple and Conversational Chains
 - QA RAG Chain
 - Linking, routing, branching, merging, and moderating chains

Key Topics

- Deployment and Monitoring
 - Deploy LLM as a service with LangServe
 - Monitor and evaluate LLMs with LangSmith
 - End-to-End LLM app development

Key Topics



Key Takeaways

- Understand the key components of the LangChain Ecosystem
- Learn how to effectively interface with LLMs using appropriate inputs and outputs.
- Master interfacing with vector databases, and embeddings, and build robust search and retrieval systems.
- Gain skills in building AI tools and agents using LangChain and LangGraph.
- Discover how to combine various components to build comprehensive LLM chains.
- Learn the deployment and monitoring processes of LLMs using LangServe and LangSmith.

Thank You
