

# Introduction to LangChain



LangChain is a powerful framework for building applications that combine LLMs with external data, tools, and workflows. It simplifies the creation of intelligent agents by managing prompts, memory, retrieval, and chains in production-ready pipelines.

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## What is Framework

A framework is a **ready-made structure or set of tools** that helps you build something faster and in an organized way.

Example: Building a house

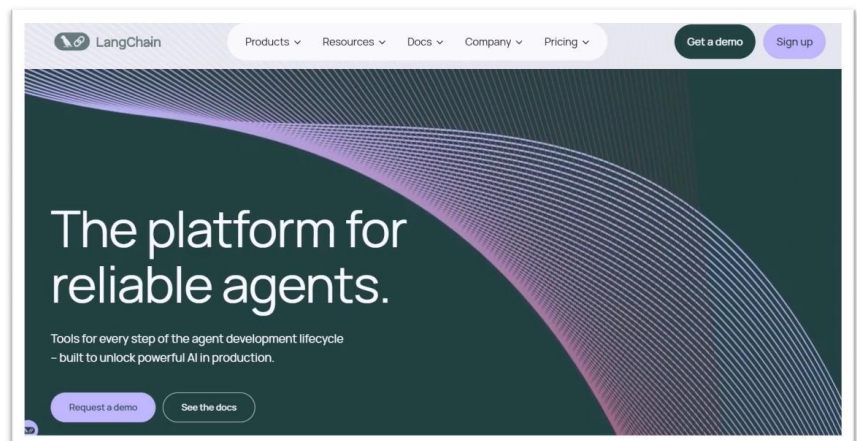
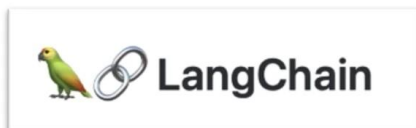
A framework is like a **pre-built scaffolding + toolkit** that helps you build faster (instead of starting from zero with bricks and cement).



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# What is LangChain

LangChain is a **framework** that helps developers build applications using **Large Language Models (LLMs)** like Chat GPT, Claude, and others



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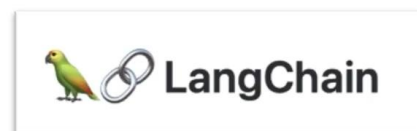
## Why do we need LangChain

Imagine:

You want to build a **chatbot** that can read PDF files.  
Or an **AI app** that can **search Google + summarize + send an email**.

Doing this **from scratch** is **hard** because:

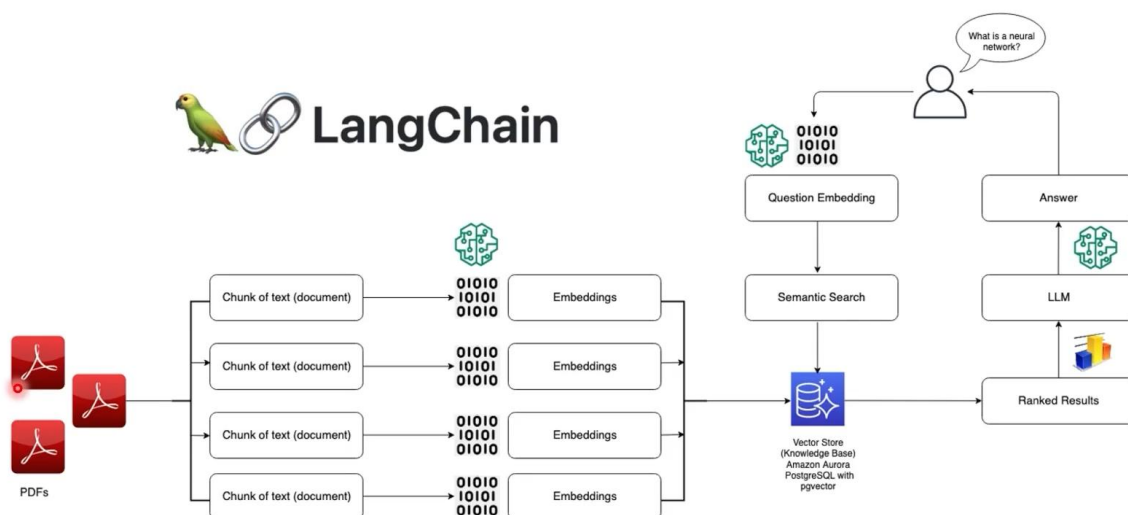
- ☐ You need to **connect many tools**,
- ☐ Handle **memory & context**,
- ☐ And **manage LLM conversations**.



**LangChain makes all this easier!**

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# Why do we need LangChain



# Benefits

Benefit	Description	Use Case Example
Tool Integration	Connects LLMs with external tools like APIs, web search, calculators, etc.	Ask "What's the weather in Delhi?" → LLM calls weather API
Memory Support	Maintains short-term and long-term memory for continuity in conversation	Personal AI tutor remembers past questions
Document Q&A	Enables LLMs to read and answer questions from PDFs, Word files, or databases	Upload resume → Ask "What skills are missing?"
Modular Design	Reusable components (chains) for faster, structured development	Chain: Prompt → Tool → Output pipeline
Agent Framework	Creates autonomous agents that can reason and choose actions/tools dynamically	Agent plans: Search → Extract → Respond

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# Benefits

Benefit	Description	Use Case Example
Ecosystem & Integrations	Supports OpenAI, HuggingFace, Pinecone, Chroma, SQL, and many others	Build vector search over internal documents
Rapid Prototyping	Build apps quickly using pre-built chains and templates	Demo chatbot in under 10 minutes
Open-source & Community	Active community with examples, docs, and plugins	Contribute, customize, or learn from existing examples
Real-world Applications	Applicable in customer support, legal, education, reporting, and more	Automated business report summarizer

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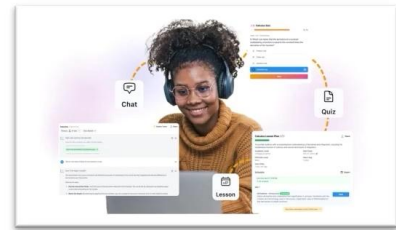
# What can you build



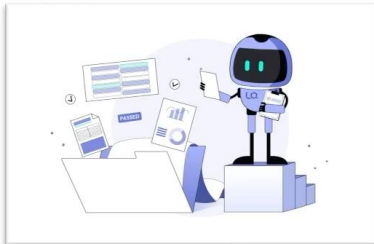
AI Chatbots



AI Agents



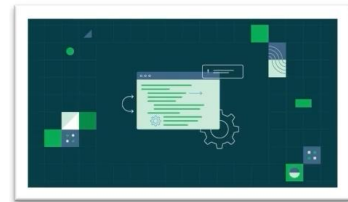
Personal AI Tutors



Document QA Systems



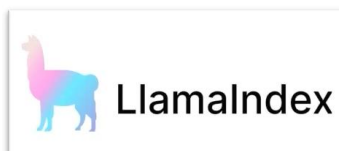
Voice-Activated Assistants



Custom LLM Apps

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## Alternatives



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