

LLMs' Agentic Applications

DAY 2/7 Introduzione al framework LangChain

DataMasters

Recap

LLMs Agentic Application – 1/7

- Introduzione ai Large Language Models
- Tokenizzazione
- Vettori di Incorporamento
- Fine-tuning di LLMs
- Utilizzo pratico di modelli in Cloud e in Locale (OpenAI - Ollama – LMStudio)

LLMs Agentic Application - 2/7

→ Concatenazione task con LangChain

- Memoria (conversazionale) Sequenziale
- Prompt Templating
- OutputParser
- (*Runnables*)

→ Use case: **Chatbot conversazionale con analisi e log delle conversazioni con LangChain e Gradio**

→ Focus su Runnables in LangChain

Iniziamo dalla fine

The image shows two side-by-side screenshots of a web-based AI application interface, likely demonstrating the LangChain framework.

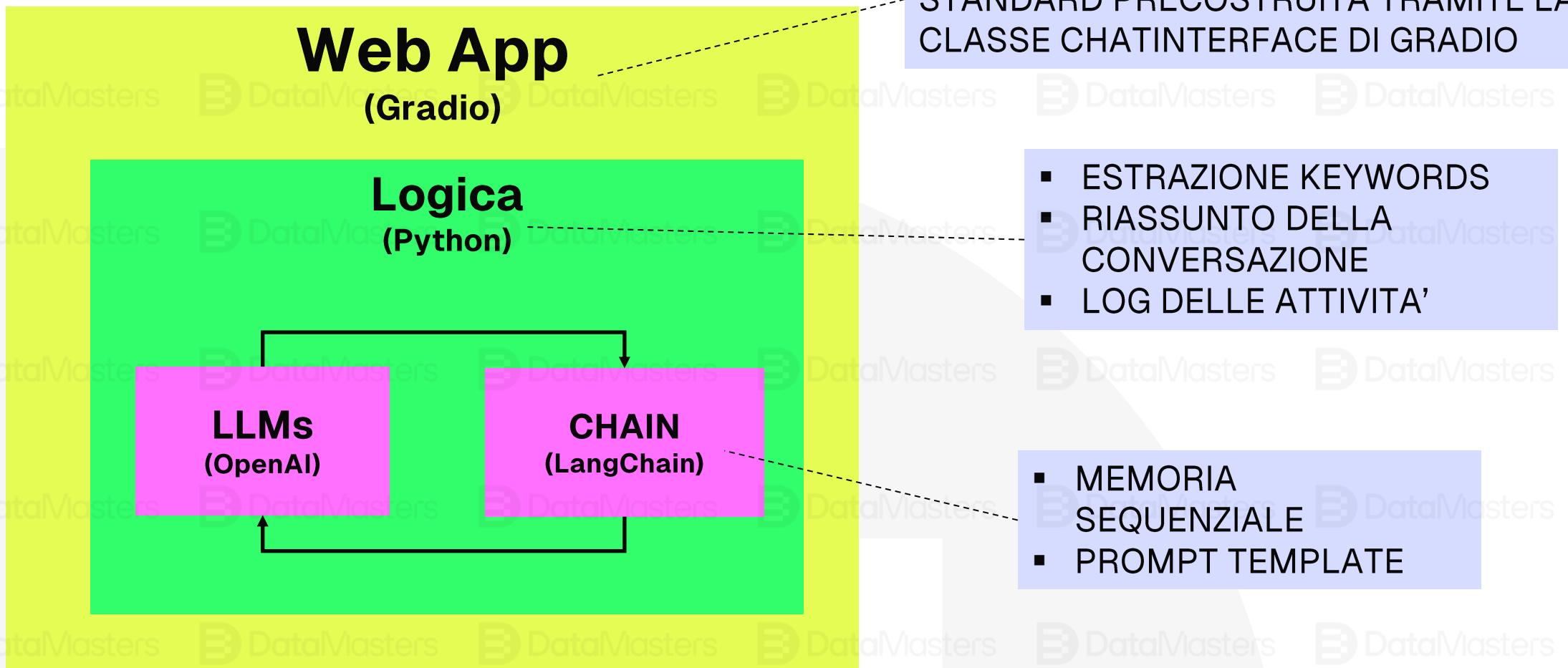
Left Screenshot (Standard Gradio Interface):

- Header:** Shows the Gradio logo and a red header bar with the URL "127.0.0.1:7860".
- Chatbot Panel:** A sidebar labeled "Chatbot" containing a message about the beauty of data science and its ability to tell stories.
- User Input:** An orange input field asking "Scrivi il nome di un frutto del colore che mi piace".
- Response:** A message from the AI suggesting oranges due to their color and nutritional value.
- Text Area:** A large text block explaining the AI's reasoning and providing a list of fruit suggestions.
- Buttons:** "Retry", "Undo", and "Clear" buttons at the bottom.
- Footer:** "Use via API" and "Built with Gradio".

Right Screenshot (Modified Interface with Green Border):

- Content Area:** The main content area is enclosed in a green border, highlighting the AI-generated text.
- Text Content:** The AI response is identical to the left screenshot, discussing the color preference and suggesting various fruits like oranges, mangoes, and kiwi.

Architettura



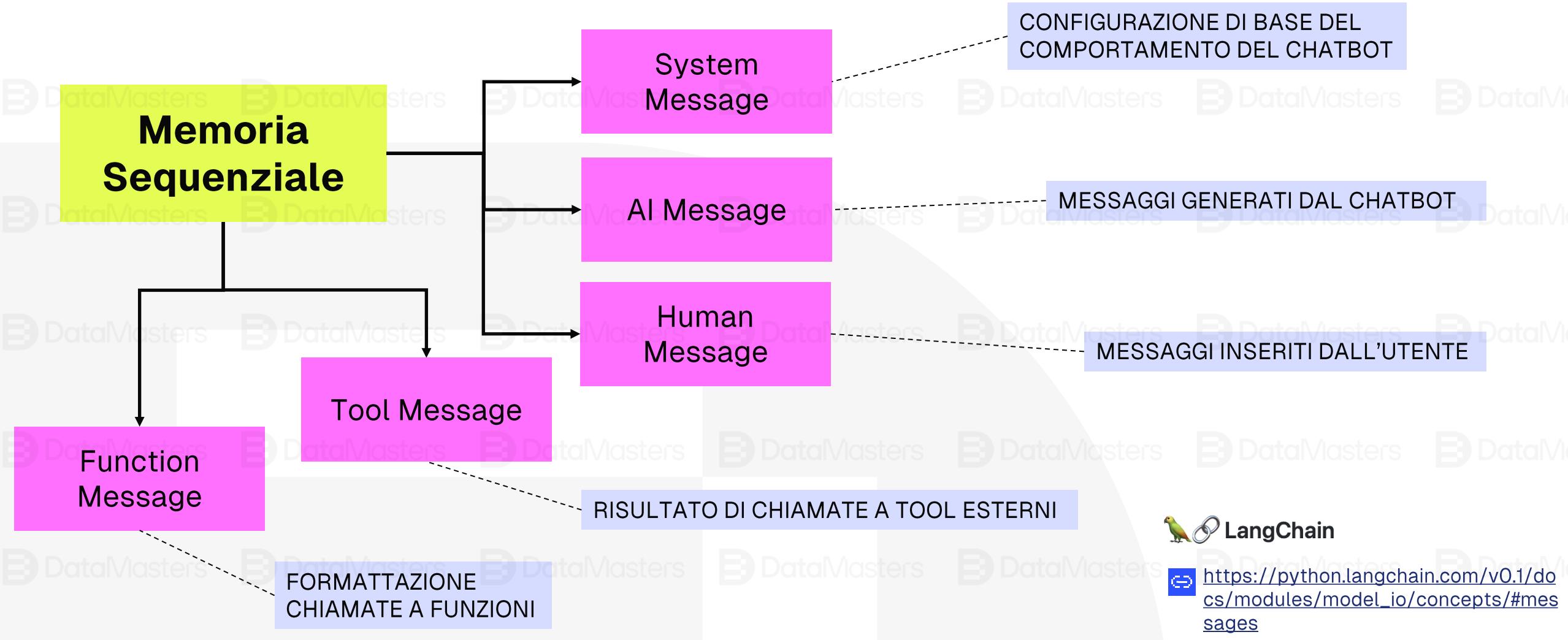
LangChain

→ Framework per sviluppare applicazioni che sfruttano LLM

→ Componenti principali:

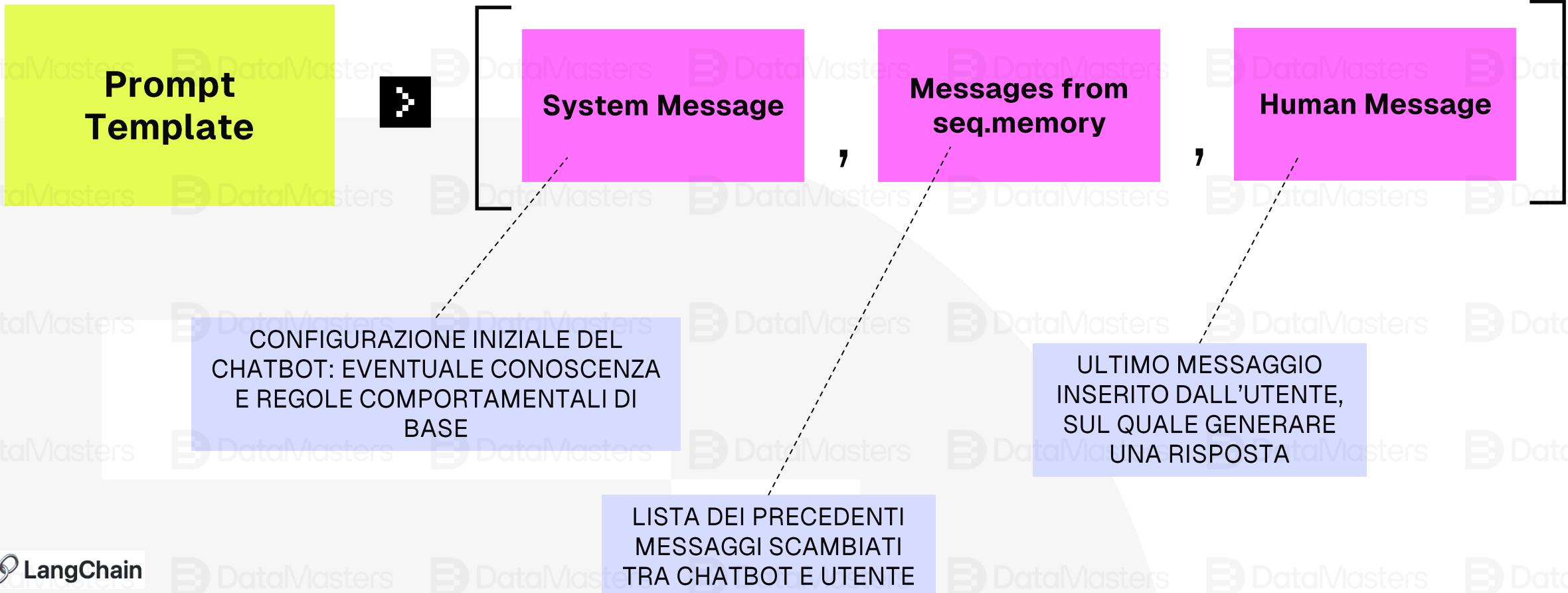
- # Model I/O
- # Chains
- # Memory
- # Retrieval (RAG)
- # Agents
- # Callbacks

Memoria sequenziale



https://python.langchain.com/v0.1/docs/modules/model_io/concepts/#messages

Prompt template



https://python.langchain.com/docs/how_to/#prompt-templates

Intro a LangChain

Hands on

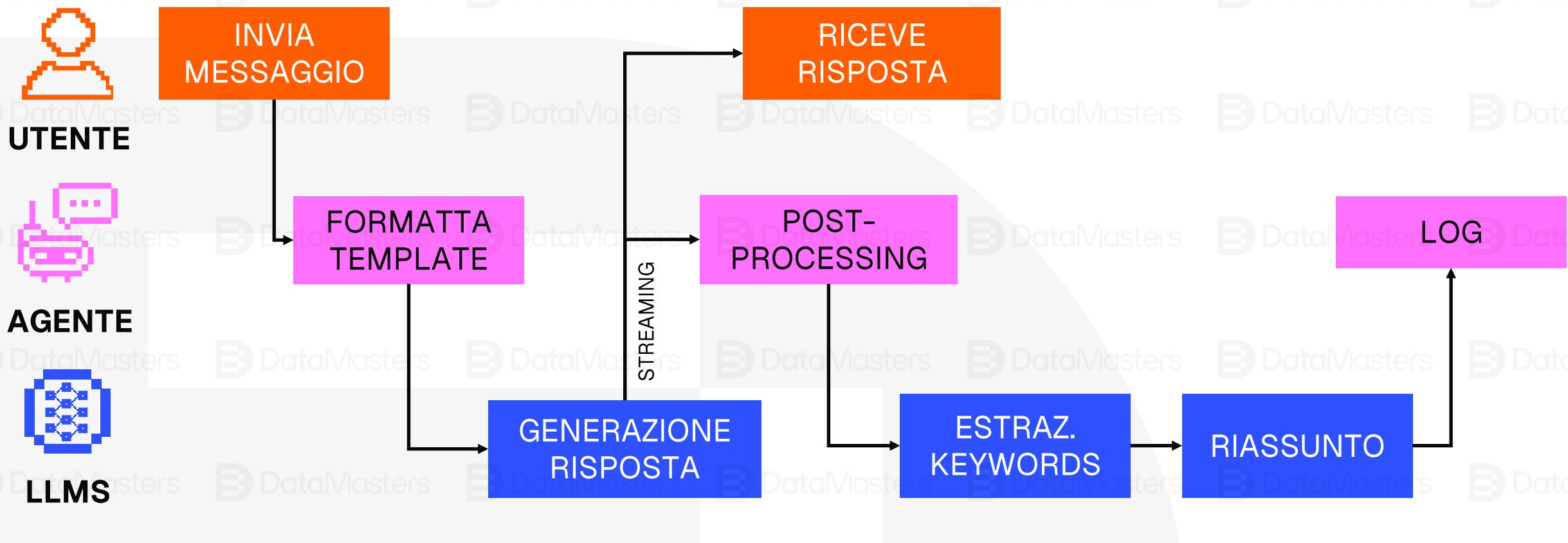
→ Prompt-templating

→ Memoria conversazionale sequenziale

→ Parserizzazione degli output

- Stringhe di testo
- Oggetti Pydantic
- JSON

Demo Chatbot: funzionamento



Demo Chatbot Hands on

Chatbot conversazionale con:

→ Memoria conversazionale

→ Estrazione keywords

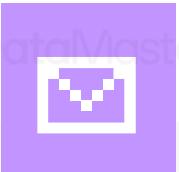
→ Generazione riassunto

→ Log interazione utente

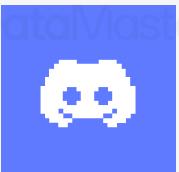
Approfondimento Hands on

→ Interfaccia Runnable e RunnableParallel in LangChain

Supporto



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<https://datamasters.it/community-discord>



<https://corsi.datamasters.it/login>