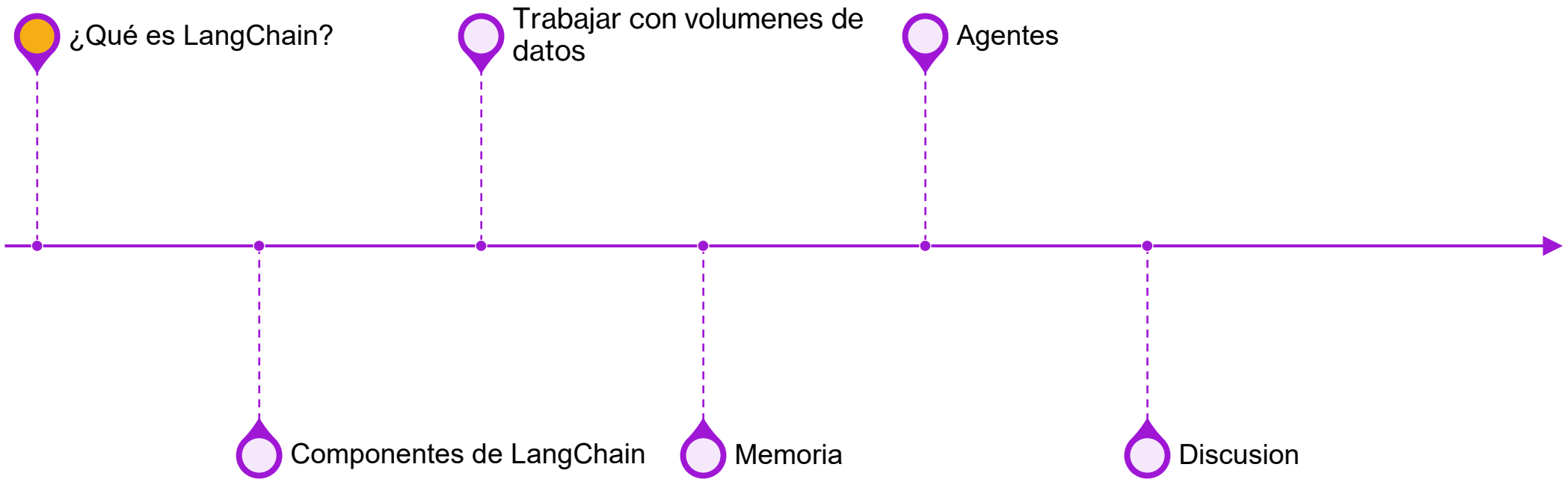
Indice


¿Qué es LangChain?
Trabajar con volumenes de datos
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¿Que hace un LLM?

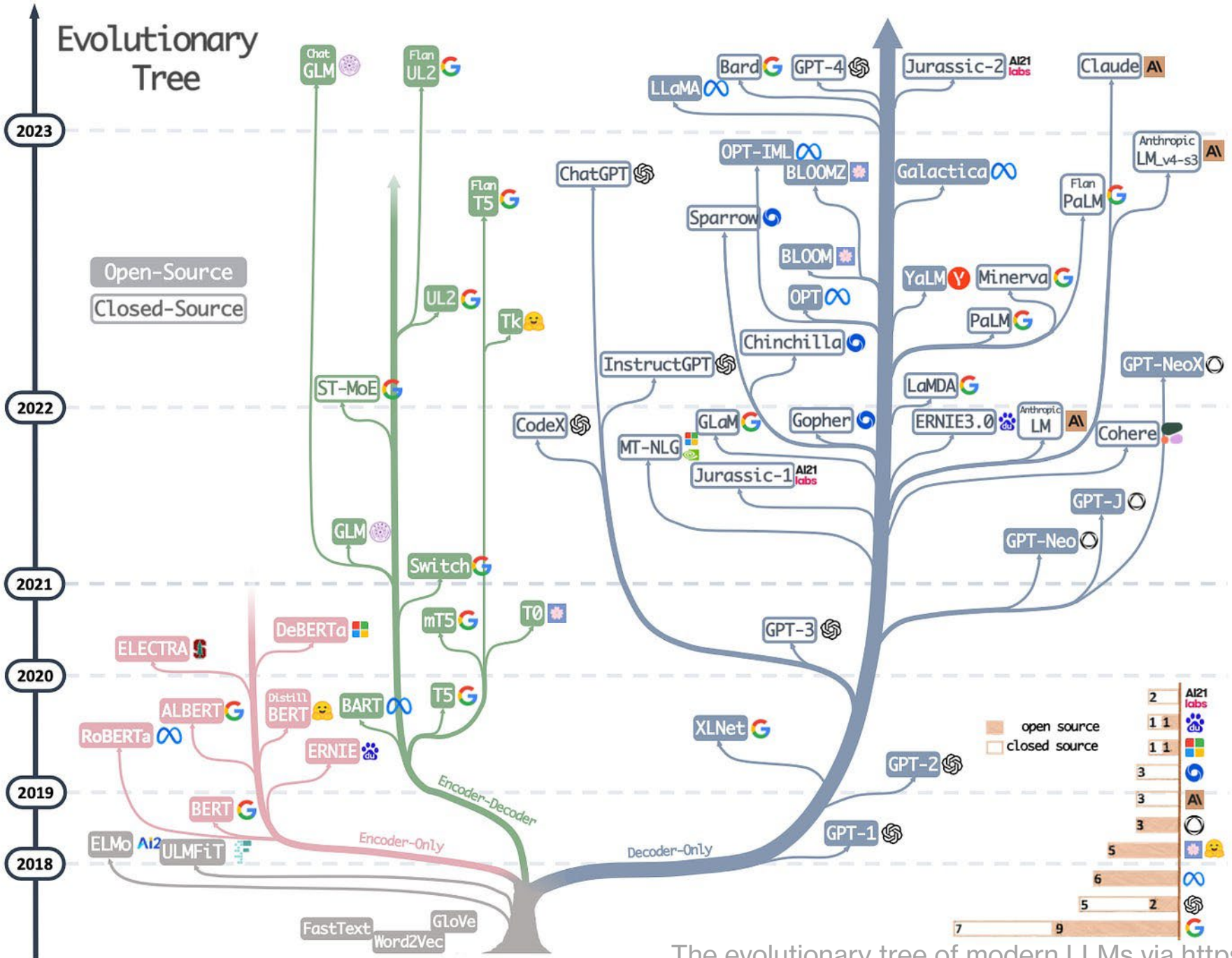
Encoder:

- vectores com significado semántico.

Decoder:

- continuar un texto dado

¿ CUALES HAY?



The evolutionary tree of modern LLMs via https://arxiv.org/abs/2304.13712.

OPEN SOURCE

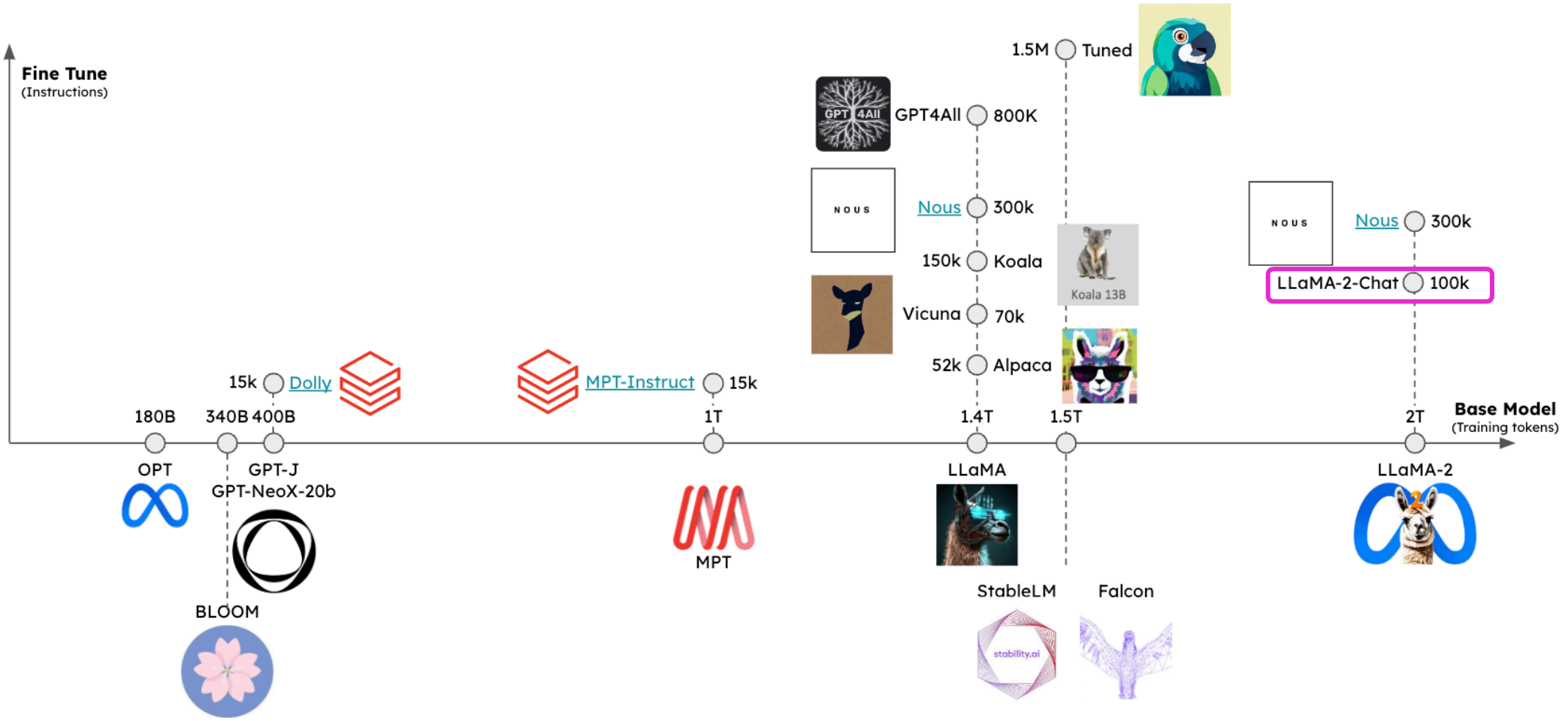
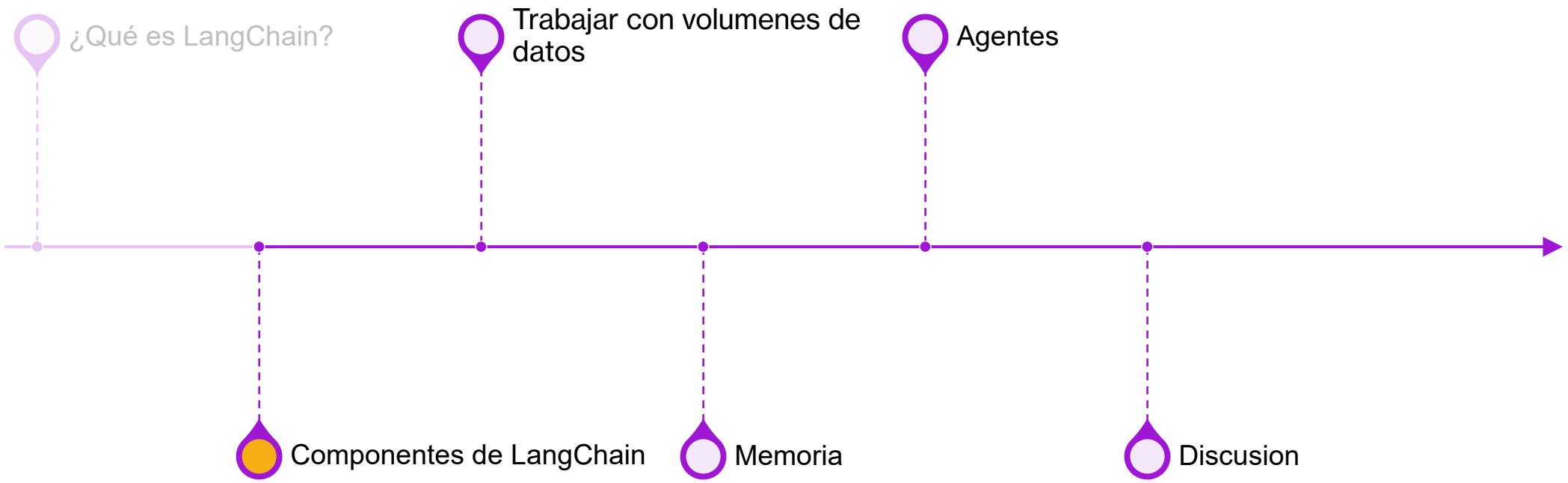


Imagen de la documentación de LangChain https://python.langchain.com/docs/guides/local_llms

LLama 2

- Publicado el 18 de julio de 2023 con licencia open-source.
- Entrenado en la generación de texto y en modo chat.
- Tres tamaños
  - Pequeño (7b): 7 Billones de parámetros
  - Mediano (13b): 13 Billones de parámetros
  - Grande (70b): 70 Billones de parámetros
- Disponble en HuggingFace

Indice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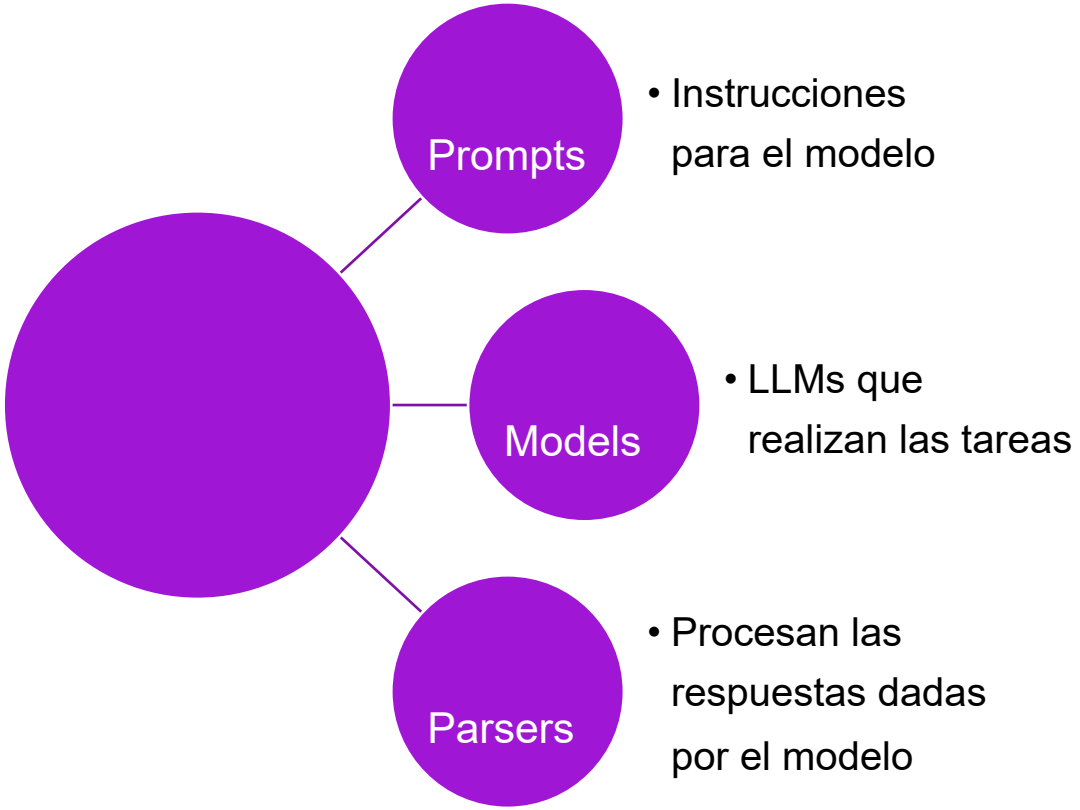
Componentes básicos de LangChain



Consejos prompt engineering

- Es un proceso muy artesanal
- Depende del modelo, conoce sus limitaciones
- Incluye ejemplos
- Divide las tareas en etapas
- Da hueco al modelo para que razone
- Se especifico con la salida

Ejemplo

```
The following is a paragraph extracted from the chapter {chapter} of the book '{book_title}'
{docs}

Your task is to identify and list all the main characters that appear in the paragraph. A main
   character is a living being that appears several times throught the harry potter story. Use your
   knowledge of the Harry Potter universe to identify the main characters. For example, 'Harry
   Potter', 'Rubious Hagrid' and 'Albus dumbledore' are a main characters. However,'cat', 'group of
   people', 'man' and 'woman' are not main characters. A main character must always perform an
   action in the paragraph. Ignore characters that only appears in the scene. A main character must
   have a first name, a surname and a race (human, elf, gnome... etc). If neccesary, use your
   knowledge of the Harry Potter universe to fill the main character first name, surname or race.
   Include a physical description of the character (10 words maximum). If any of these criteria are
   not met do not include the character in the list. If no main character appears in the section,
   you should return an empty list ('characters':[]). NEVER INCLUDE A CHARACTER THAT DO NOT APPEAR
   IN THE PARAGRAPH

Perform the task in three steps:
First: list the main characters that appear in the paragraph
Second: list other characters that appear in the paragraph but are not main characters.
Third: return a JSON document with only the main characters using the next format.
Enclose the document with the tag <json> and </json>
{characters_format}
```

Ejemplo: especificar salida

```
The following is a paragraph extracted from the chapter {chapter} of the book '{book_title}'
{docs}

Your task is to identify and list all the main characters that appear in the paragraph. A main
   character is a living being that appears several times throught the harry potter story. Use your
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Enclose the document with the tag <json> and </json>
{characters_format}
```

Ejemplo: pon ejemplos

```
The following is a paragraph extracted from the chapter {chapter} of the book '{book_title}'
{docs}

Your task is to identify and list all the main characters that appear in the paragraph. A main
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   have a first name, a surname and a race (human, elf, gnome... etc). If neccesary, use your
   knowledge of the Harry Potter universe to identify the main character first name, surname or race.
   Include a physical description of the character (50 words maximum). If any of these criteria are
   not met do not include the character in the list. If no main character appears in the section,
   you should return an empty list (like this: []). NEVER INCLUDE A CHARACTER THAT DO NOT APPEAR
   IN THE PARAGRAPH

Perform the task in three steps:
First: list the main characters that appear in the paragraph
Second: list other characters that appear in the paragraph but are not main characters.
Third: return a JSON document with only the main characters using the next format.
Enclose the document with the tag <json> and </json>
{characters_format}
```

```
{
  'characters': array of
   {
     'first_name': string,
     'surname': string,
     'description': string,
     'race': string,
     'main: bool
   }
}
```

Ejemplo: pon ejemplos

```
The following is a paragraph extracted from the chapter {chapter} of the book '{book_title}'
{docs}

Your task is to identify and list all the main characters that appear in the paragraph. A main
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Third: return a JSON document with only the main characters using the next format.
Enclose the document with the tag <json> and </json>
{characters_format}
```

Ejemplo: Divide la tarea

```
The following is a paragraph extracted from the chapter {chapter} of the book '{book_title}'
{docs}

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   character is a living being that appears several times throught the harry potter story. Use your
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   IN THE PARAGRAPH

Perform the task in three steps:
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Second: list other characters that appear in the paragraph but are not main characters.
Third: return a JSON document with only the main characters using the next format.
Enclose the document with the tag <json> and </json>
{characters_format}
```
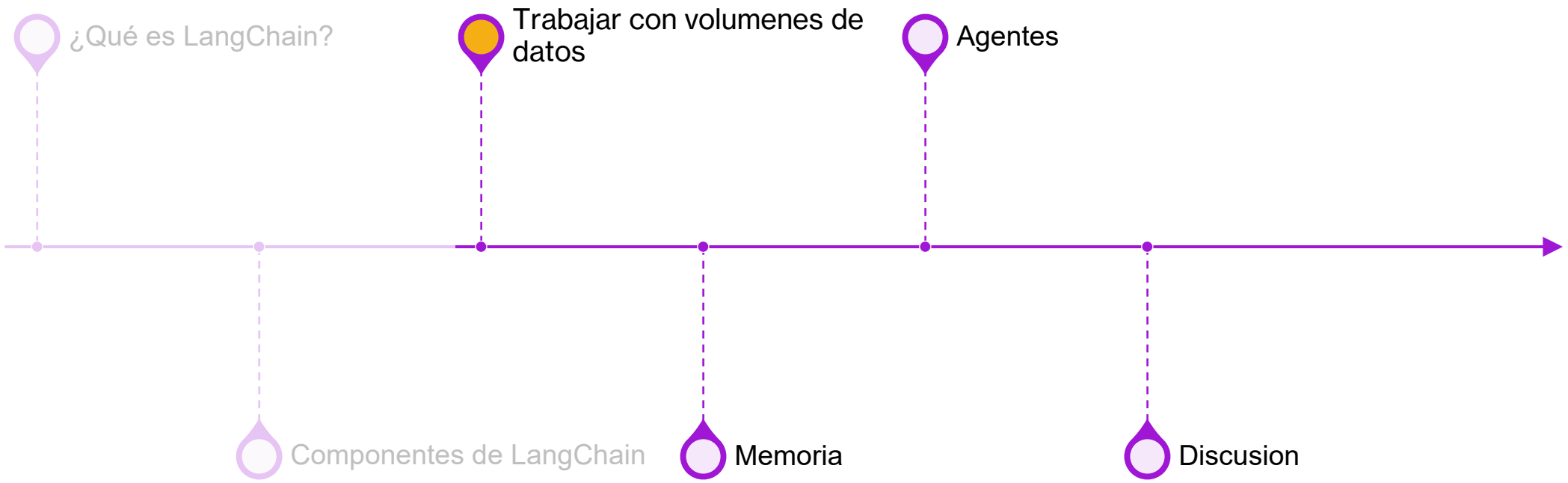

Limitaciones: Ventana de contexto

- Los LLM tienen un número máximo de texto que pueden procesar.
- Ventana de contexto = Nº
- LLama2 ventana 4000 tokens

Indice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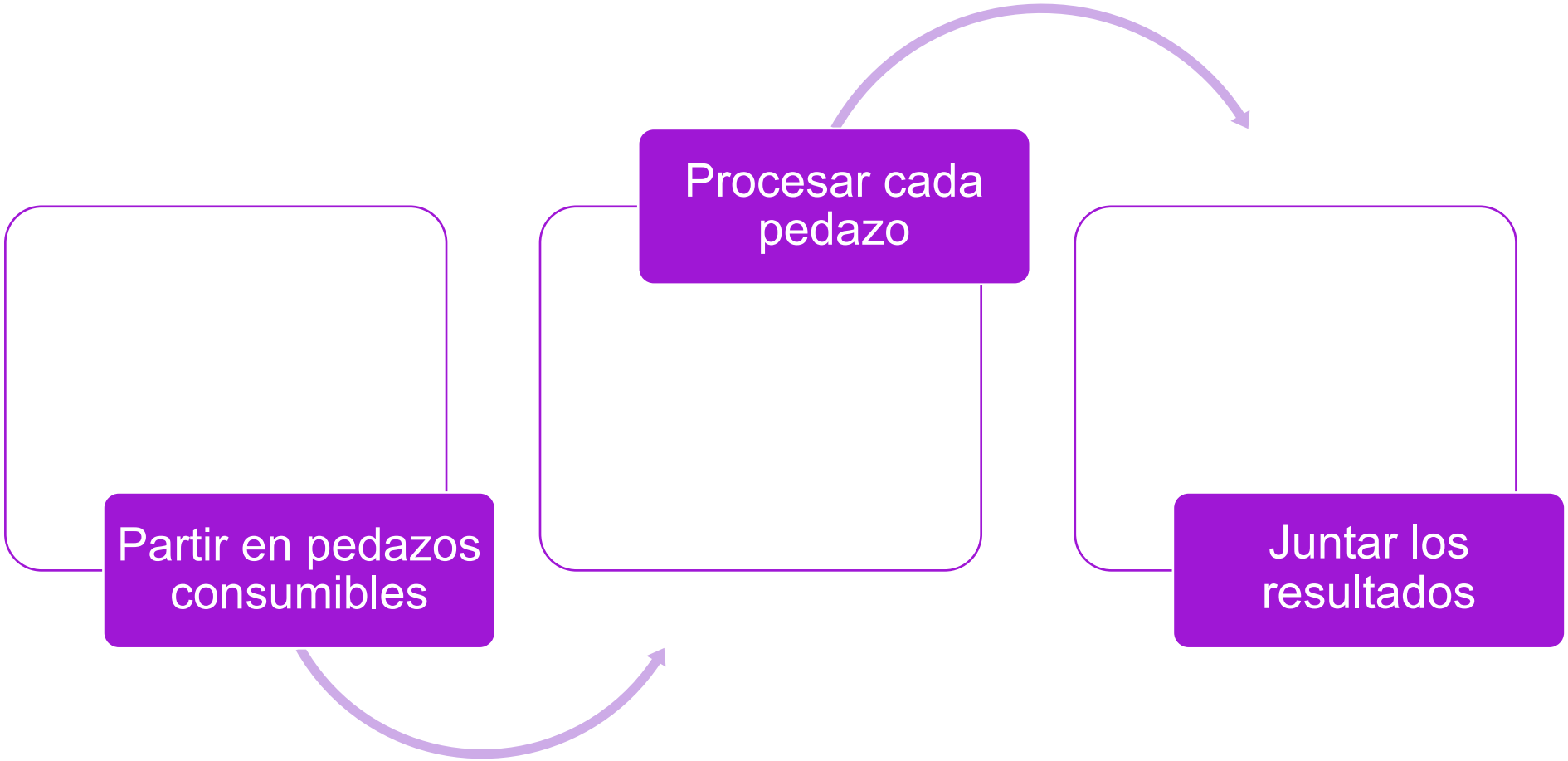
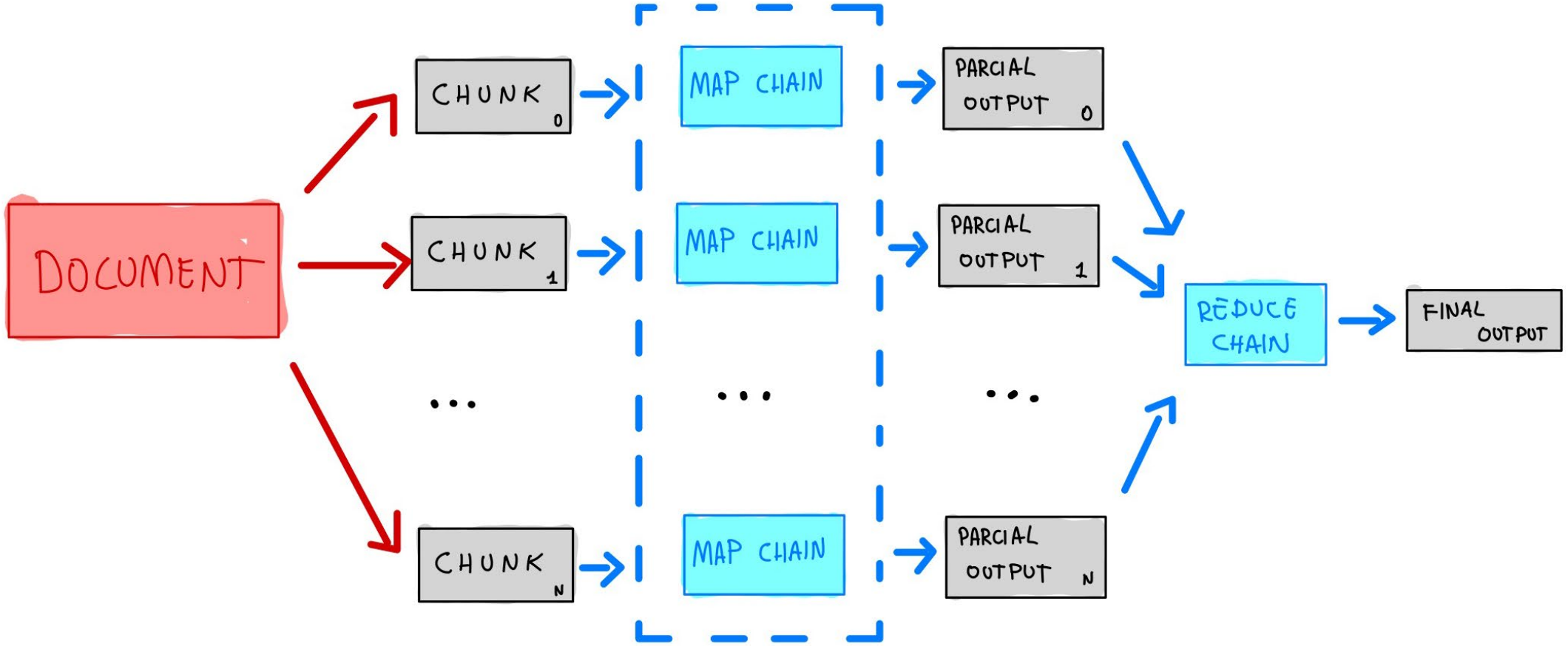
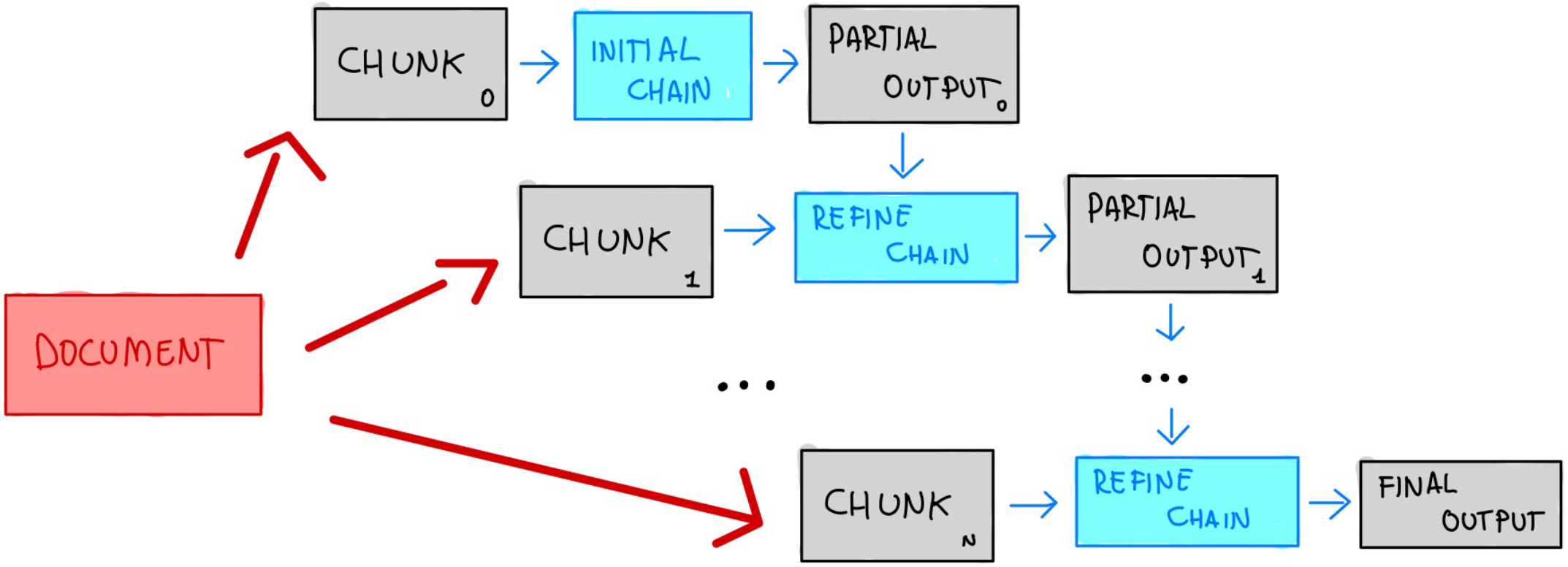
Solventar limitacion



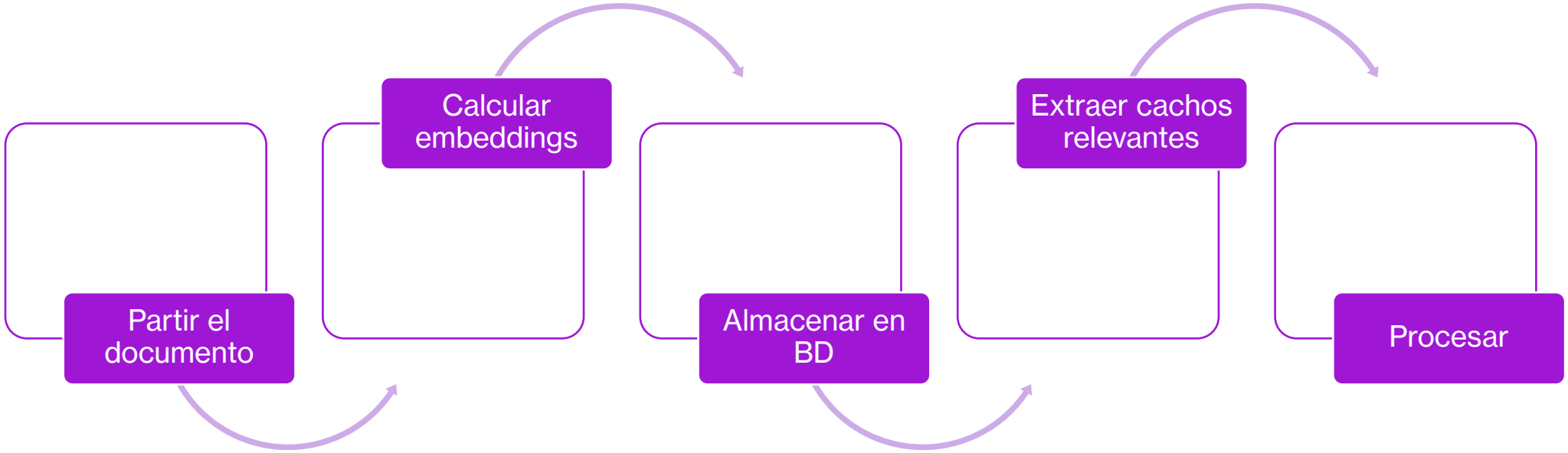
Juntar los resultados: Map - Reduce



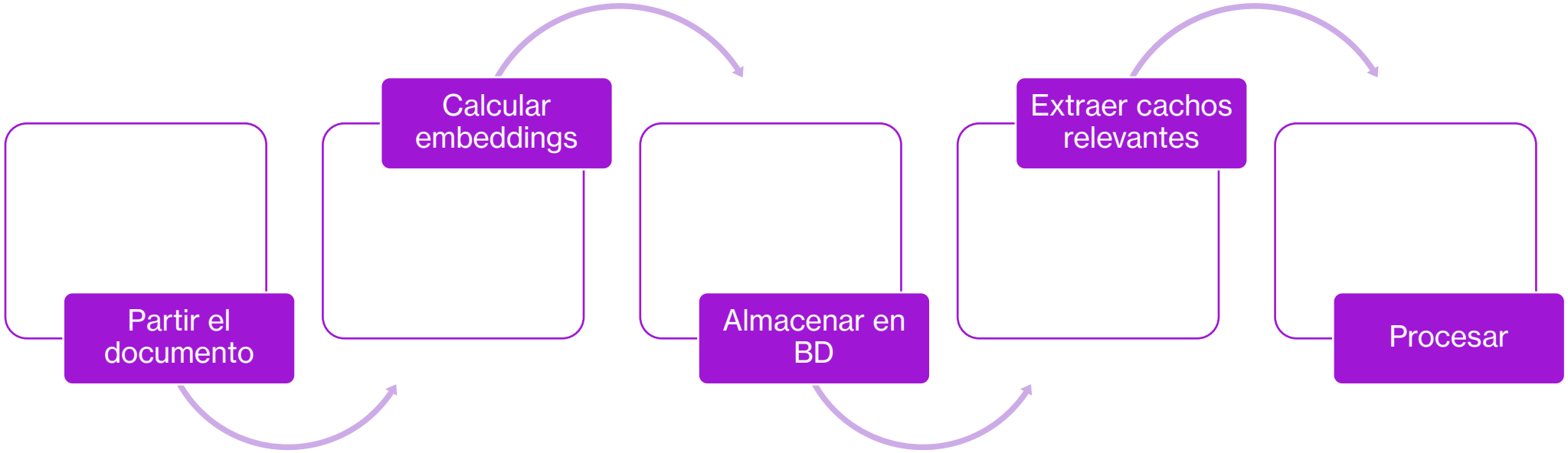
Juntar los resultados: refine



Interactuar con un documento



Procesar partes de un documento



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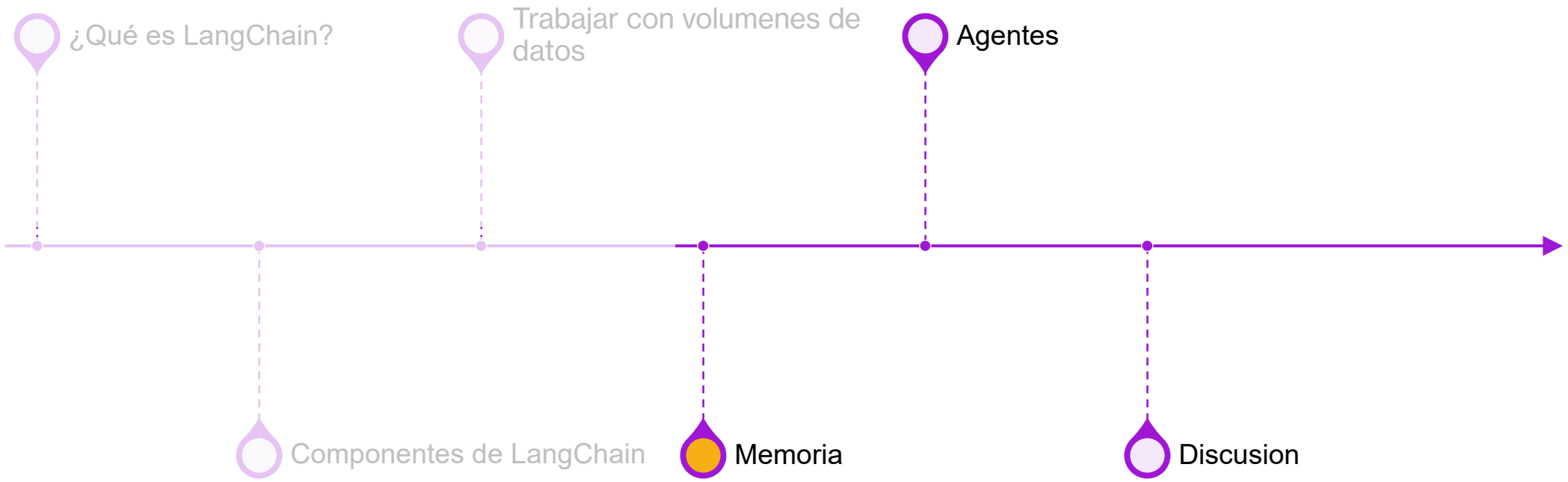
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Cómo funciona

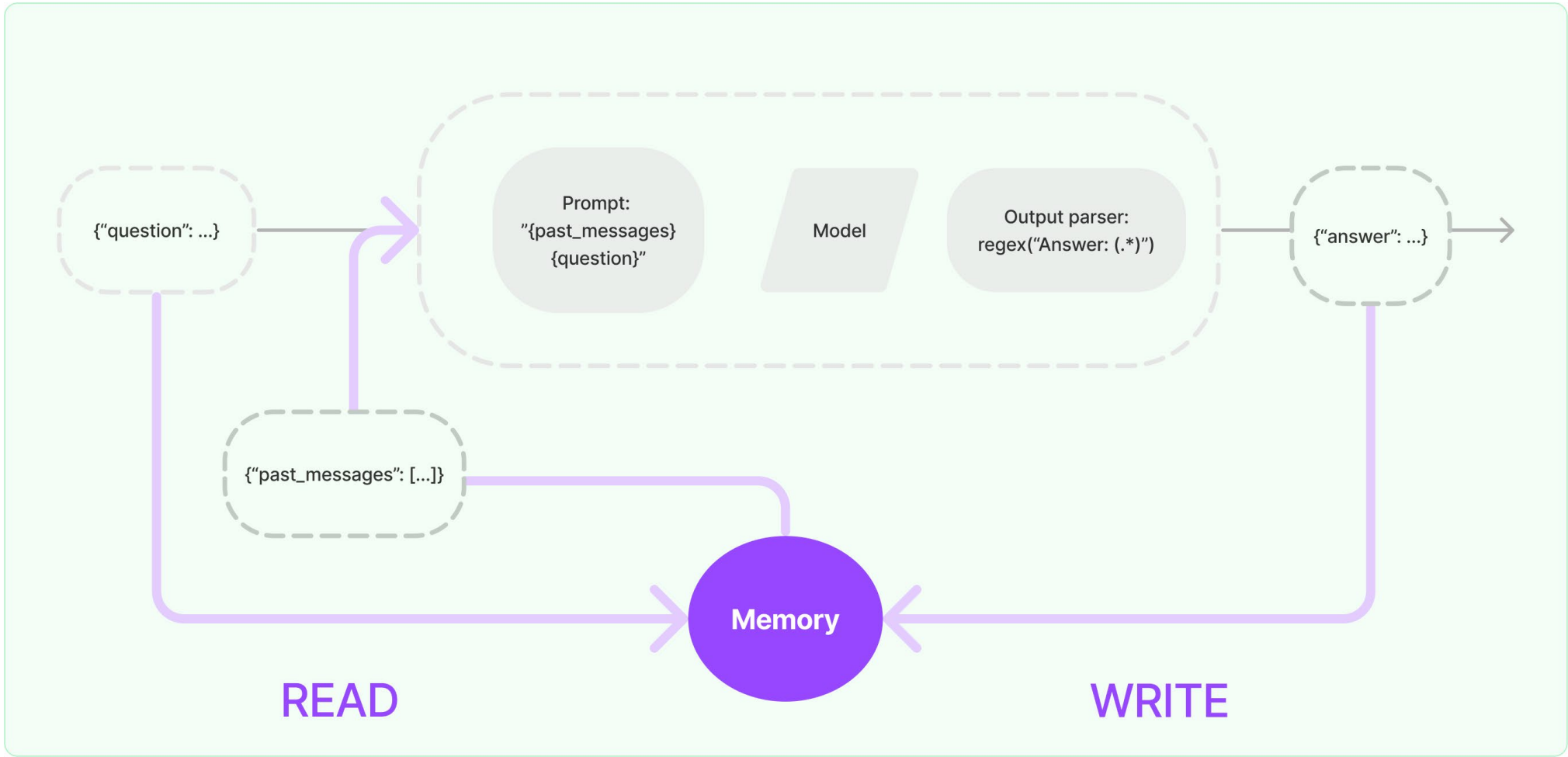

Imagen de la documentación de LangChain https://python.langchain.com/docs/modules/memory/

Tipos de memoria

Conversation Buffer

- Almacena una lista con todos los mensajes hasta el momento.

Conversation Buffer Window

- Almacena una lista con los últimos K mensajes.

Conversation Summary Buffer

- Almacena una lista con los últimos K mensajes y mantiene un resumen de K+1 para atras.

Vector Store

- Utiliza una base de datos de vectores para almacenar las conversaciones.

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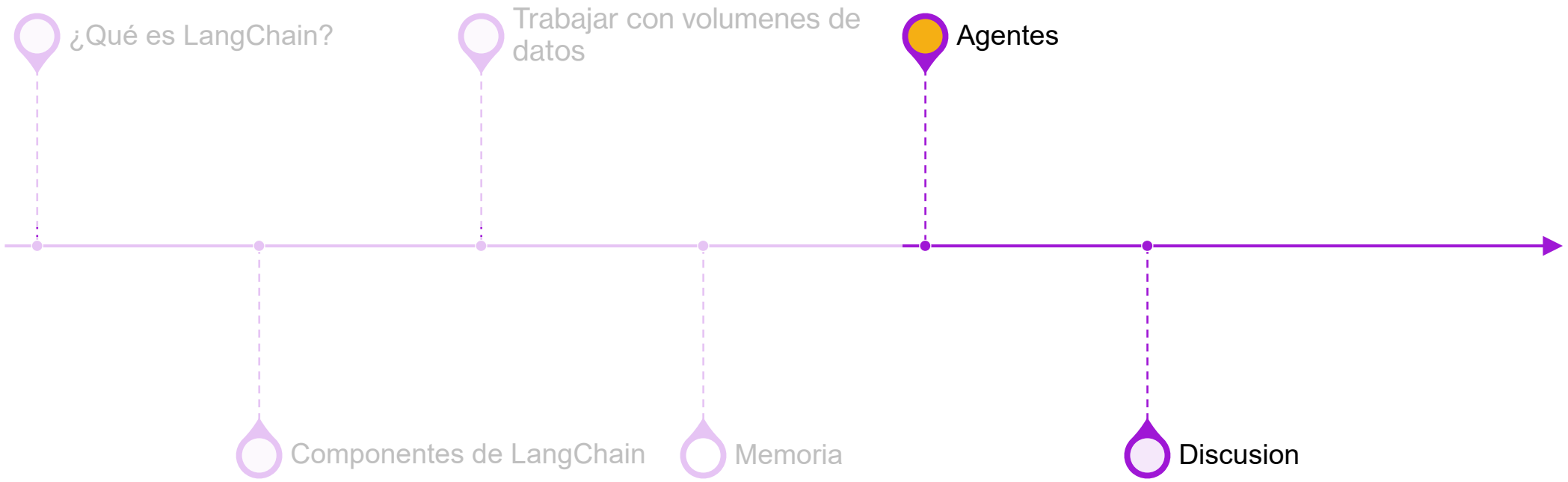
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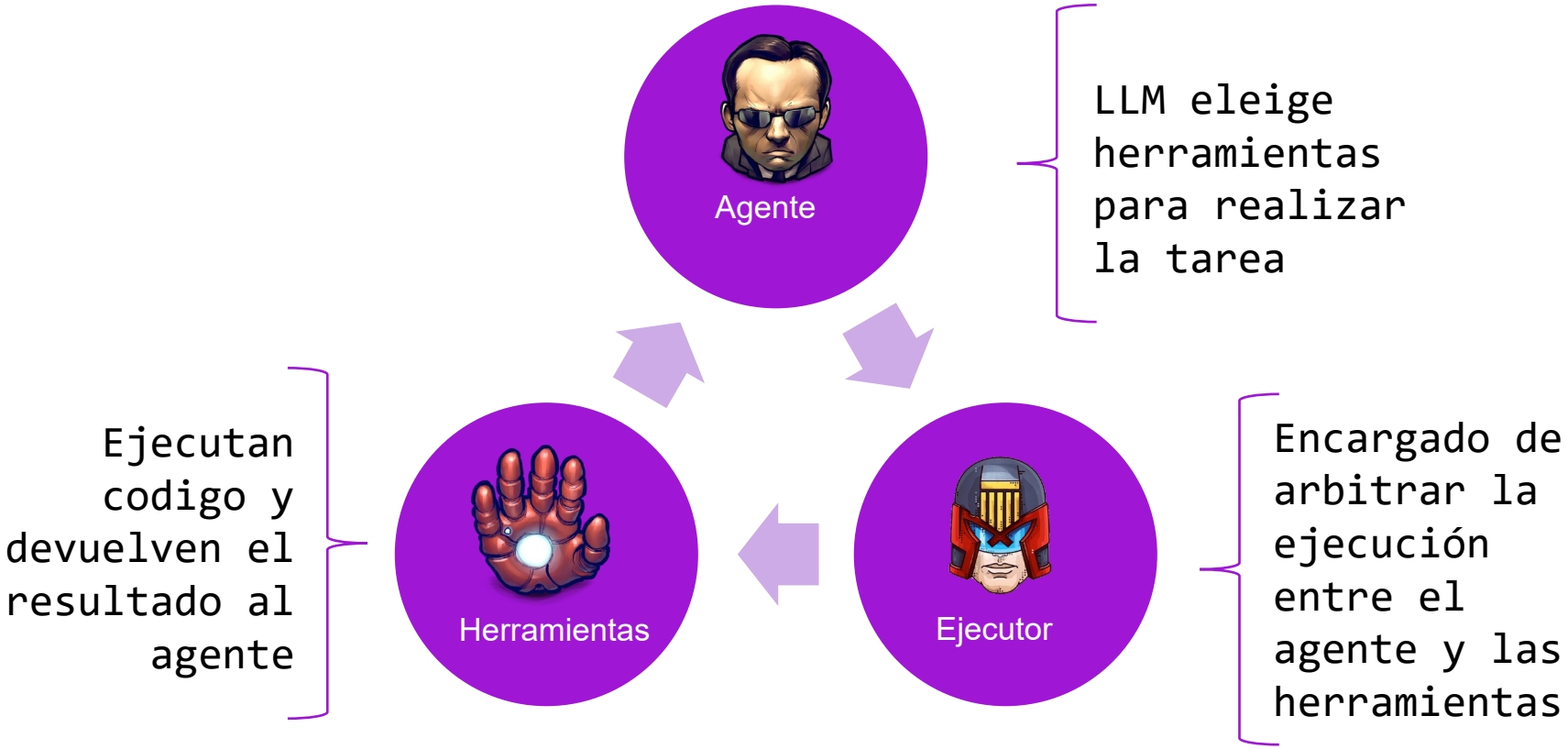
Componetes de un agente



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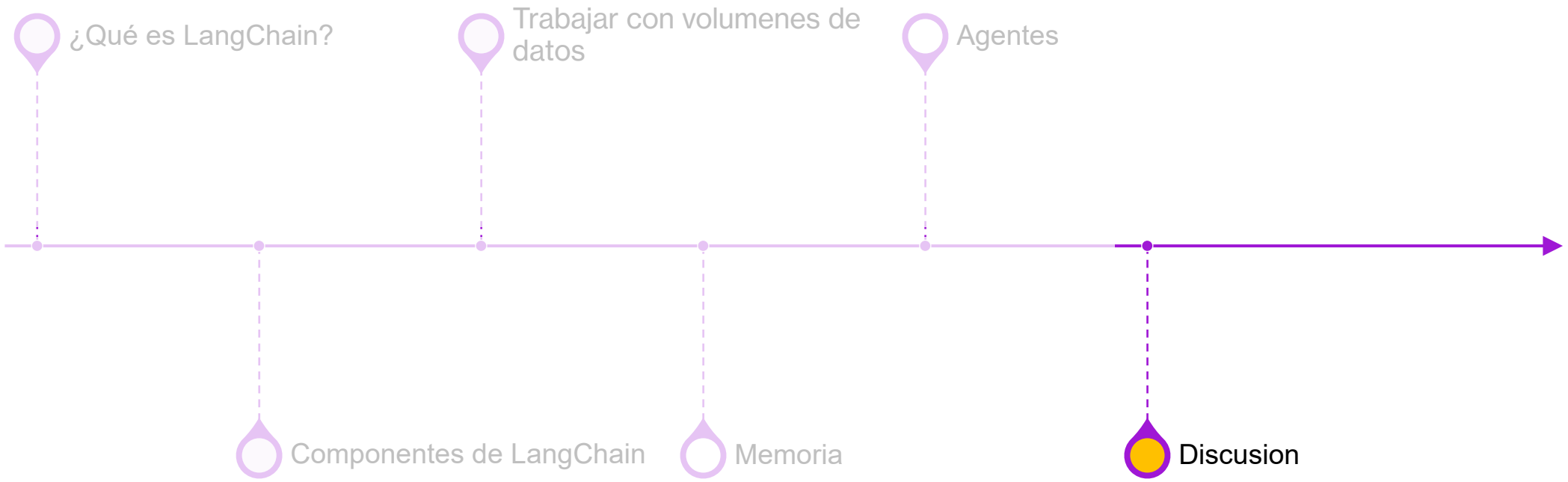
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CODIGO DISPONIBLE

https://github.com/panizolledotangel/LangChain_llama2_example