

Informatica® Cloud Application Integration July 2024

GeminiAl Prompt Chaining

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Preface

Use Gemini AI Prompt Chaining to design prompt chains and resolve them in sequence so that it provides the desired responses from a large language model (LLM). The recipe is based on Guide or HTTP request to call the process.

CHAPTER 1

Introduction to GeminiAl Prompt Chaining recipe

The GeminiAl Prompt Chaining recipe is initiated using a guide or an HTTP request.

The process chains the prompts together and resolves them in the sequence in which they're provided. Chaining of these prompts augments the ability of the language model being used to deliver a highly curated response. When you send a query, the process first sets the behavior and topic, and then provides the additional instructions to answer the query. After receiving the response, you can ask a new question without changing the topic.

CHAPTER 2

GeminiAl Prompt Chaining recipe contents

The GeminiAl Prompt Chaining recipe contains multiple assets, such as a process object, an app connection, a guide, and a process.

The following image shows the assets that the GeminiAl Prompt Chaining recipe package contains:



GeminiAl Prompt Chaining recipe assets

The following table lists the assets that the GeminiAl Prompt Chaining recipe package contains:

Asset Name	Asset Type	Description
GeminiPromptChaining	App Connection	Gemini connection
GenerationConfig_PO	Process Object	Settings for the prompt request
Guide to use Gemini with two requests	Guide	When you send a query, the process first sets the behavior and topic, and then provides the additional instructions to answer the query. After receiving the response, you can ask a new question without changing the topic.
Prompt Chaining Gemini	Process	The process chains the prompts together and resolves them in the sequence in which they're provided. Chaining of these prompts augments the ability of the language model being used to deliver a highly curated response.

CHAPTER 3

Using the GeminiAl Prompt Chaining recipe

To use the GeminiAl Prompt Chaining recipe, you must perform the following steps manually:

- Step 1: Copy and access the recipe
- Step 2: Configure and publish the GeminiPromptChaining connection
- Step 3: Configure and publish the process
- Step 4: Publish and run the guide

Copying and accessing the recipe

To copy and access the recipe content, perform the following steps:

- 1. Open the GeminiAl Prompt Chaining recipe and click Use.
- 2. Select the location where you want to copy the recipe, and then click Continue.
- In the Copying the recipe dialog box, click OK.
 It might take some time for the recipe to get copied. You will receive a notification when the recipe is ready for use.
- 4. After the recipe is copied, click **Explore** to access the recipe content.
- 5. Navigate to the project or folder where you copied the recipe or enter the recipe name in the **Find** box. All the assets in the recipe are displayed as shown in the following image:



Configuring and publishing the GeminiPromptChaining connection

To configure and publish the GeminiPromptChaining connection, perform the following steps:

- 1. Open the GeminiPromptChaining connection.
- 2. In the Type field, select Gemini.
- 3. In the Run On field, select Cloud Server or any Secure Agent.
- In the Connection Properties section, enter the API key in the API_Key property. The API_Key property authenticates Gemini connection requests.
- 5. Save, test, and publish the connection.

Configuring and publishing the process

- 1. Open the Prompt Chaining Gemini process.
- On the Temp Fields tab of the Start step, the default Model_LLM is gemini-1.5 pro. You can optionally
 edit the model version. For information about changing the model version, see the Gemini
 documentation
- 3. In the Create Prompt step, enter the prompt instructions in the Assignments field by updating the Prompt_Configuration and Prompt_Request fields using the Expression Editor, as shown in the following sample code:

```
For Prompt Configuration:
 <generationConfig>
     <stopSequences>.</stopSequences>
      <candidateCount>1</candidateCount>
      <maxOutputTokens>200</maxOutputTokens>
      <temperature>0.5</temperature>
      <topP>0.5</topP>
      <topK>2</topK>
   </generationConfig>
For Prompt Request:
<Generate Content Request>
   <contents>
      <parts>
        <text>Your behaviour is {$input.First_System_Prompt}, Topic is
{$input.First User Prompt}</text>
      </parts>
      <role>user</role>
   </contents>
 <generationConfig>
     <stopSequences>{$temp.Prompt Configuration[1]/stopSequences}</stopSequences>
      <candidateCount>{$temp.Prompt Configuration[1]/candidateCount }
candidateCount>
     <maxOutputTokens>{$temp.Prompt Configuration[1]/maxOutputTokens }
maxOutputTokens>
      <temperature>{$temp.Prompt Configuration[1]/temperature }</temperature>
      <topP>{$temp.Prompt Configuration[1]/topP }</topP>
      <topK>{$temp.Prompt Configuration[1]/topK }</topK>
   </generationConfig>
</Generate Content Request>
```

For the **Prompt_Configuration** field, enter values for the following properties:

Property	Description		
stopSequences	Contains sequences of characters or strings that stop the model's output. It controls where the model must end its response.		
candidateCount	Specifies the number of response candidates that the model must generate. For example, the value is set to 1, the model generates one response. If set to a higher number, the mod generates that many alternative responses for the same input.		
maxOutputTokens	Defines the maximum number of tokens the model can generate in its response. Setting a limit ensures that the response is concise and fits within the desired length constraints.		
temperature	Controls the randomness of the model's output. A lower value makes the output more deterministic, while a higher value increases randomness and creativity. For example, a temperature of 0.5 balances between deterministic and creative outputs.		
topP	Determines the cumulative probability threshold for token selection. The model considers the smallest set of tokens whose cumulative probability meets or exceeds topP. For example, if topP is set to 0.1, the model considers only the top 10% most probable tokens at each step.		
topK	Limits the number of the highest-probability tokens to consider during response generation. For example, if topK is set to 2, the model considers only the top 2 tokens at each step, controlling output diversity and quality.		

After configuring the prompt instructions, the process send the details to the LLM to fetch the required response, and then stores the first response.

4. In the **Create Second Prompt** step, in the **Assignments** field, update the **Prompt_Request** field using the Expression Editor as shown in the following sample code:

```
<Generate_Content_Request>
<contents>
     <parts>
        <text>Your behaviour is : {$input.First System Prompt}, Topic is :
{\$input.First_User_Prompt}</text>
     </parts>
     <role>user</role>
  </contents>
<contents>
     <parts>
        <text>{$temp.Prompt Response}</text>
     </parts>
     <role>model</role>
   </contents>
     <contents>
     <parts>
        <text>Your additional instructions are : {$input.Second System Prompt}.
Question is {$input.Second_User_Prompt}</text>
     </parts>
     <role>user</role>
   </contents>
   <generationConfig>
     <stopSequences>{$temp.Prompt Configuration[1]/stopSequences}
     <candidateCount>{$temp.Prompt Configuration[1]/candidateCount }
candidateCount>
     <maxOutputTokens>{$temp.Prompt Configuration[1]/maxOutputTokens }
maxOutputTokens>
     <temperature>{$temp.Prompt Configuration[1]/temperature }</temperature>
     <topP>{$temp.Prompt Configuration[1]/topP }</topP>
```

The LLM uses both the requests as an instruction to prepare the final response.

5. Save and publish the process.

Publishing and running the guide

To publish and run the guide, perform the following steps:

- 1. Open the Guide to use Gemini with two requests guide.
- 2. On the Start tab of the Start step, ensure that the Run As field is set to Current User.
- 3. Save and run the guide.
- 4. The **Instructions** page appears. Enter the requests in the **Set behavior** and **Select topic** fields. The LLM uses these requests as instructions to prepare for the final response to your query.
- 5. Click Continue.
- On the next screen, enter any additional instruction for your request and ask your query in the Ask Gemini field.

Note: You can't edit the behavior and topic fields in this page.

7. Click Continue.

The final response appears.

8. Click **New question** to ask another query, or click **End** to finish.

You can also use the inline frame to embed the guide into an HTML document of a third-party application.