INTRODUCTION

OPENAI'S JOURNEY:
FROM INCEPTION TO CUTTING-EDGE MODELS

OPENAI'S JOURNEY:

OpenAI was founded in December 2015 as a non-profit organisation.

Primary aim: Ensure that artificial general intelligence (AGI) benefits all of humanity.

In 2019, OpenAI underwent a transformation and shifted to a for-profit model.

By becoming a for-profit entity, OpenAI could attract funding and partnerships.

OPENAI'S LANDMARK MODELS

- GPT-2 (Generative Pre-trained Transformer 2) - Release Year: 2019
- GPT-3 (Generative Pre-trained Transformer 3) - Release Year: 2020
- DALL·E - Release Year: 2021
- Whisper - Release Year: 2022
- GPT-4 (Generative Pre-trained Transformer 4) - Release Year: 2023

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HOW CHATGPT WORKS BEHIND THE SCENES AND HOW IT WAS TRAINED

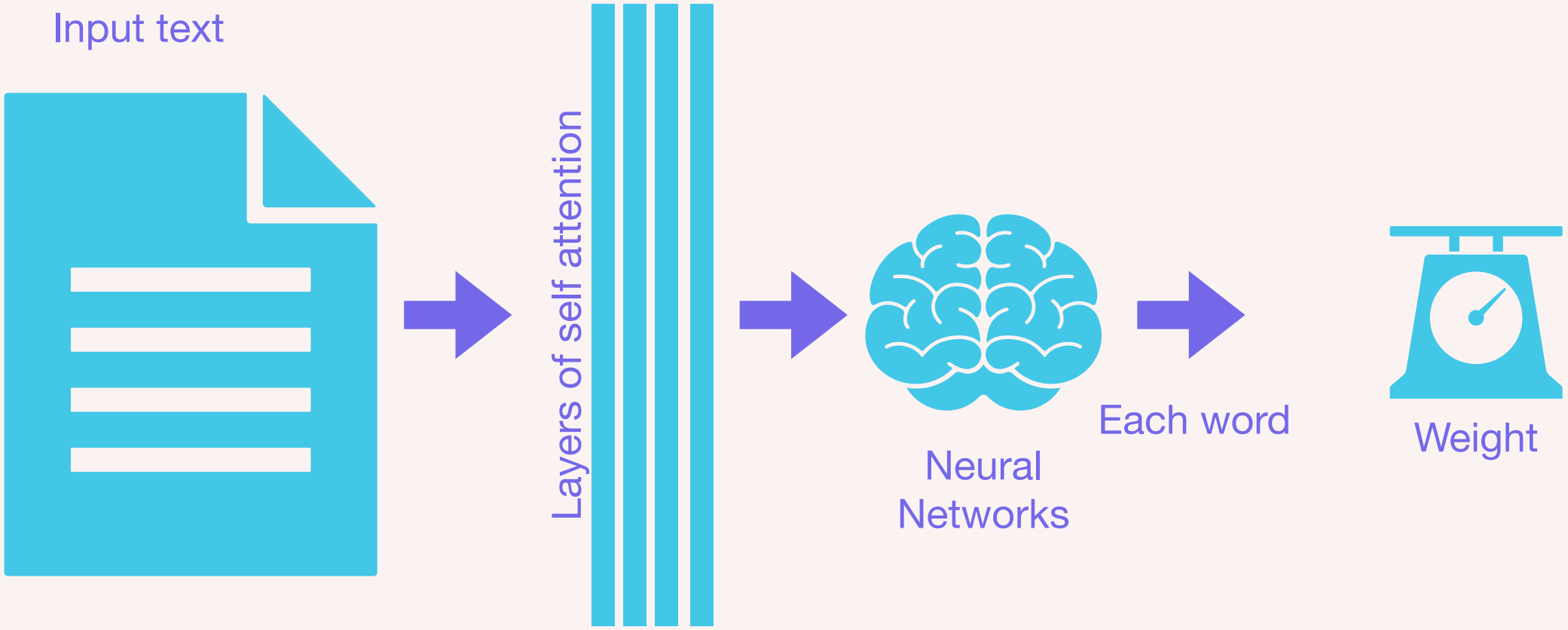
UNDERSTANDING THE ARCHITECTURE

ChatGPT is built on the foundation of the transformer architecture.

The transformer consists of an encoder-decoder structure.

ChatGPT mainly relies on the encoder part as it is designed for single-turn tasks.

HOW THE ENCODER WORKS



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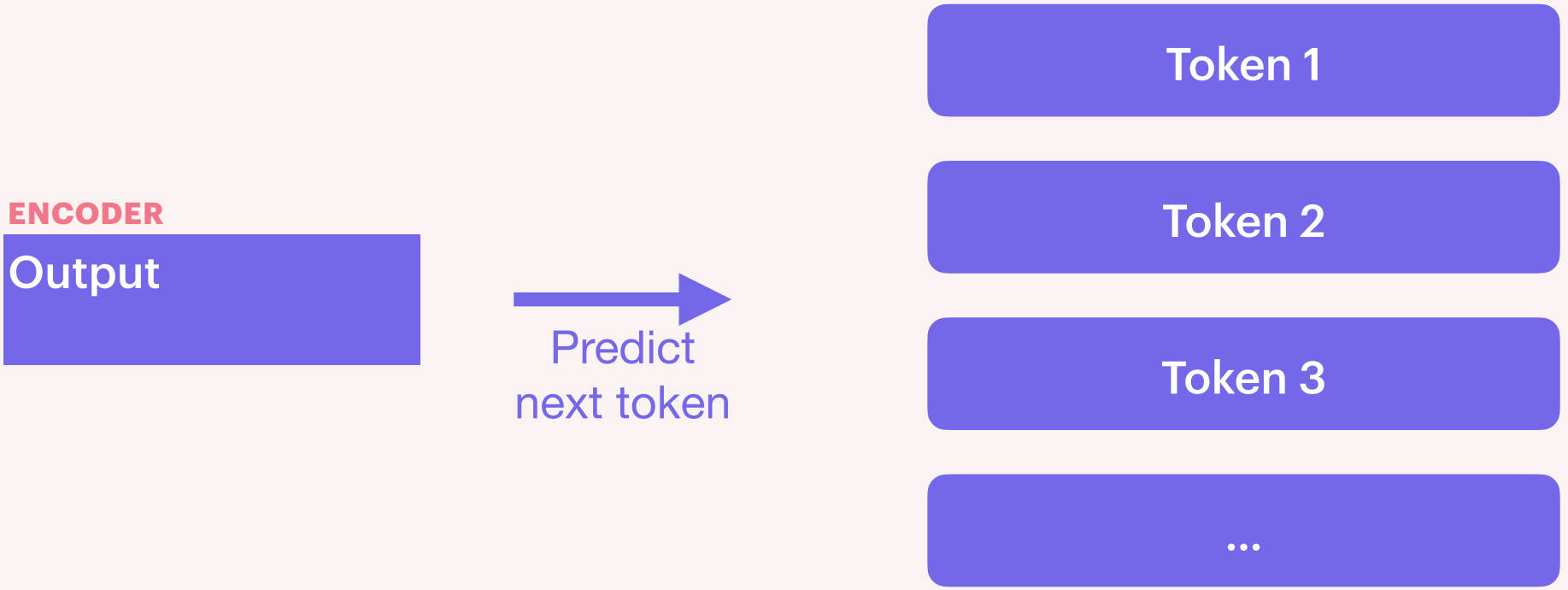
HOW THE ENCODER WORKS

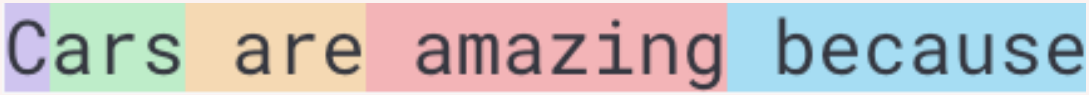


TRAINING DATA AND PREPROCESSING

The training of ChatGPT involves exposing it to a massive dataset containing parts of the Internet.

It learns from a diverse range of sources, including books, articles, websites, and other texts.

Tokenization is a key step, where the text is divided into smaller units called tokens.



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THE TRAINING PROCESS

ChatGPT is trained using a method called unsupervised learning.

It learns to predict the next word in a sequence based on the context provided by the preceding words.

During training, the model compares its predictions with the actual text from the dataset and calculates a loss, which represents how far off its predictions are from the correct text.

The model then uses optimization algorithms like stochastic gradient descent (SGD) or variants such as Adam to minimize this loss, gradually improving its performance.

FINE-TUNING AND DEPLOYMENT

After the initial training, ChatGPT undergoes fine-tuning to improve its performance on specific tasks or to adhere to guidelines and safety measures set by OpenAI.

Fine-tuning involves training the model on a narrower dataset with human-provided demonstrations and comparisons to fine-tune its behaviour.

Once the training and fine-tuning phases are complete, ChatGPT is ready for deployment, and it can interact with users in real-time, generating responses and providing valuable insights across various applications.

MODELS, THEIR PERFORMANCE AND PRICING

	Series	Context (input + output)	Completion API	Chat API	Price per 1M input tokens	Price per 1M output tokens
text-davinci-003	GPT-3	4096 tokens	X		20$	20$
text-curie-001	GPT-3	4096 tokens	X		2$	2$
text-babbage-001	GPT-3	4096 tokens	X		5$	5$
text-ada-001	GPT-3	16384 tokens	X		0.4$	0.4$
text-davinci-002	GPT-3	4096 tokens	X		20$	20$
text-davinci-001	GPT-3	2048 tokens	X		20$	20$
gpt-3.5-turbo	GPT-3.5	4096 tokens		X	1.5$	2$
gpt-3.5-turbo-16k	GPT-3.5	16385 tokens		X	3$	4$
gpt-4 8K context	GPT-4	8,192 tokens		X	30$	60$
gpt-4 32k context	GPT-4	32,768 tokens		X	60$	120$

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PROMPT

Complete the sentence:
“””The colour of the sky is “””

RESPONSE

blue.

	Series	Context (input + output)	Completion API	Chat API	Price per 1M input tokens	Price per 1M output tokens
text-davinci-003	GPT-3	4096 tokens	X		20$	20$
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gpt-4 32k context	GPT-4	32,768 tokens		X	60$	120$

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GPT-3 Series	Description	Strengths
text-davinci-003	Most capable model in the GPT-3 series can perform any task the other GPT-3 models can, often with higher quality, longer output and better instruction following. It can process up to 4000 tokens per request.	Complex intent, cause and effect, creative generation, search, summarization for audience.
text-curie-001	Very capable, but faster and lower cost than text-davinci-003	Language translation, complex classification, sentiment summarisation.
text-babbage-001	Capable of straightforward tasks very fast and lower cost.	Moderate classification, semantic search.
text-ada-001	Capable of simple tasks, usually the fastest model in the GPT-3 series, and lowest cost.	Parsing text, simple classification, address correction, keywords
text-davinci-002	Second generation model in the GPT-3 series, can perform any task the earlier GPT-3 models can, often with less context.	Complex intent, cause and effect, creative generation, search summarization for audience
text-davinci-001	Older version of the most capable model in the GPT-3 series, can perform any task the other GPT-3 models can, often with less context	Complex intent, cause and effect, creative generation, search summarization for audience.

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GPT-3.5 & GPT-4 Series	Description	Strengths
gpt-3.5-turbo	A highly advanced language model based on the GPT-3.5 architecture, capable of understanding and generating human-like text.	Versatile and creative in generating coherent responses, capable of handling a wide range of prompts, and provides accurate and detailed information.
gpt-3.5-turbo-16k	An enhanced version of gpt-3.5-turbo with an increased context window of 16,000 tokens, allowing for longer and more comprehensive interactions.	Offers improved context understanding, enabling it to generate more contextually relevant responses and handle longer conversations effectively.
gpt-4 8K context	The next iteration of the GPT series, gpt-4 8K context provides enhanced language capabilities and an expanded context window of 8,000 tokens.	Exhibits improved text generation quality, contextual understanding, and has a larger memory capacity, enabling it to handle complex tasks and longer conversations with greater accuracy.
gpt-4 32k context	The most advanced version of the GPT series, gpt-4 32k context offers even greater language proficiency and an expanded context window of 32,000 tokens.	Provides superior context comprehension and generates highly coherent and contextually accurate responses. It excels in handling extremely complex queries and longer conversations while maintaining high-quality outputs.

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FIRST PROMPT

PROMPT

Cars are amazing because

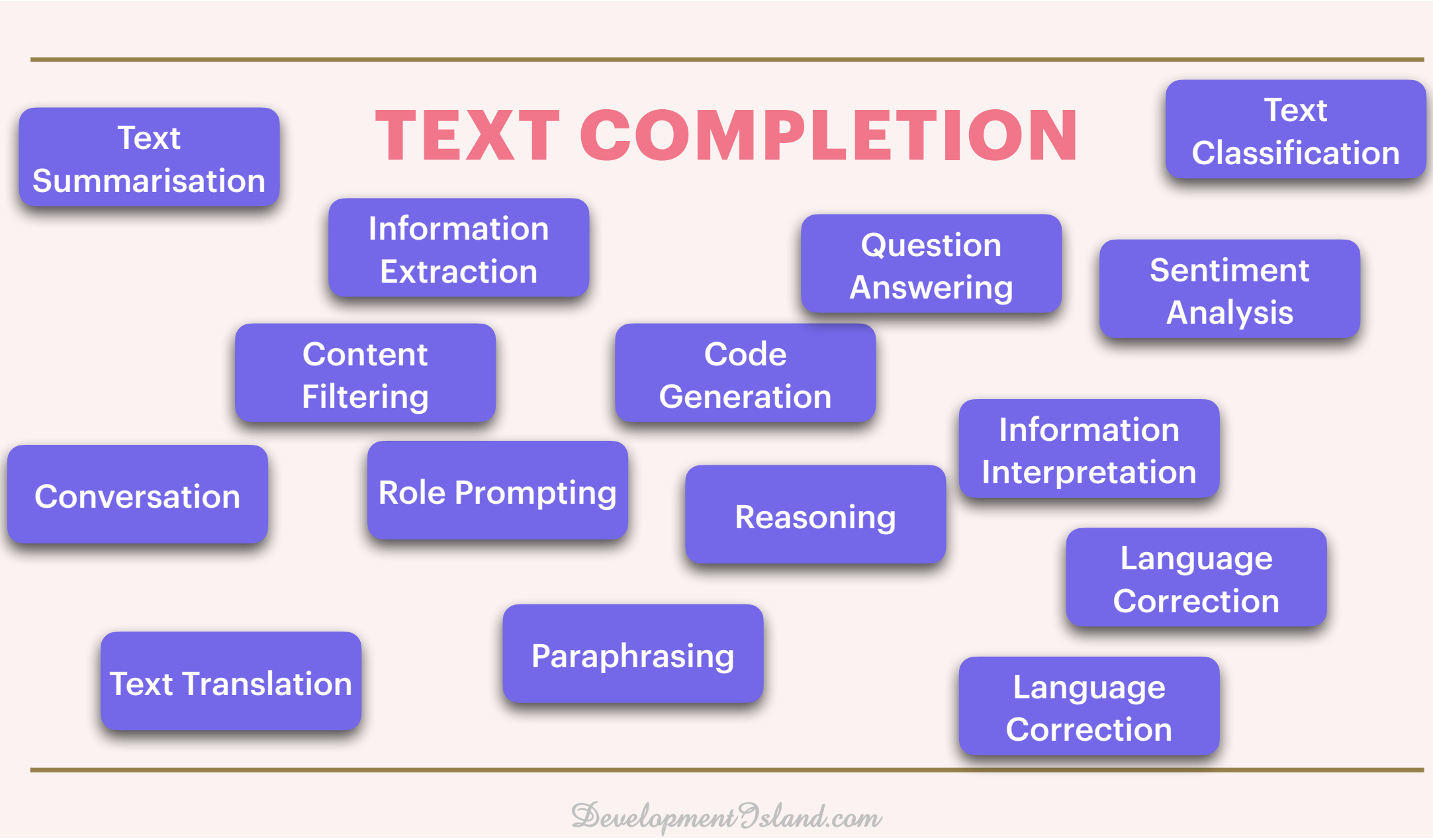
TOKENS, MAX_TOKENS, TOKENISER

PROMPT

Cars are amazing because

Cars are amazing because

USE CHATGPT COMPLETION MODEL FOR?



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TEXT SUMMARISATION

PROMPT

```
Summarise the following article:
Input: """{article}"""
```

TEXT SUMMARISATION

PROMPT

Summarise the text below as a bullet point list of the most important points.
Input: """{article}""".

TEXT COMPRESSION

PROMPT

```
Compress the given text while preserving its essential information.
Text: """{value}"""
```

TEXT SEGMENTATION

PROMPT

Segment the given article into paragraphs for easier readability.
Article: """{article}"""

INFORMATION EXTRACTION

PROMPT

```
Prompt: Extract all the people and places mentioned in the following story:
Story:"""{story}"""
```

INFORMATION EXTRACTION

PROMPT

From the following recipe, extract the list of ingredients and their quantities.
Recipe: """{recipe}"""

KEYWORD EXTRACTION

PROMPT

Extract the main keywords from the given article about the importance of exercise.
Article: """{value}"""

QUESTION ANSWERING

PROMPT

What is the tallest building in the world?

QUESTION ANSWERING

PROMPT

Can you name three scientists from the Renaissance era?

TEXT CLASSIFICATION

PROMPT

Categorize the following customer review as "positive," "negative," or "neutral": "The product exceeded my expectations and delivered great results."

TEXT CLASSIFICATION

PROMPT

Classify the following text into "spam" or "non-spam": "Get exclusive offers and discounts on our products! Limited time offer!"

TEXT CLASSIFICATION

PROMPT

Determine the sentiment of the following tweet as "positive," "negative," or "neutral": "Just watched the movie, and it was a complete disappointment. Waste of time and money."

TEXT CLASSIFICATION

PROMPT

```
Classify the given customer reviews as positive, negative, or neutral sentiment.
Reviews: """{value}"""
```

SENTIMENT ANALYSIS

PROMPT

Classify the sentiment of the following text: 'I absolutely loved the movie! It was a great experience.

SENTIMENT ANALYSIS

PROMPT

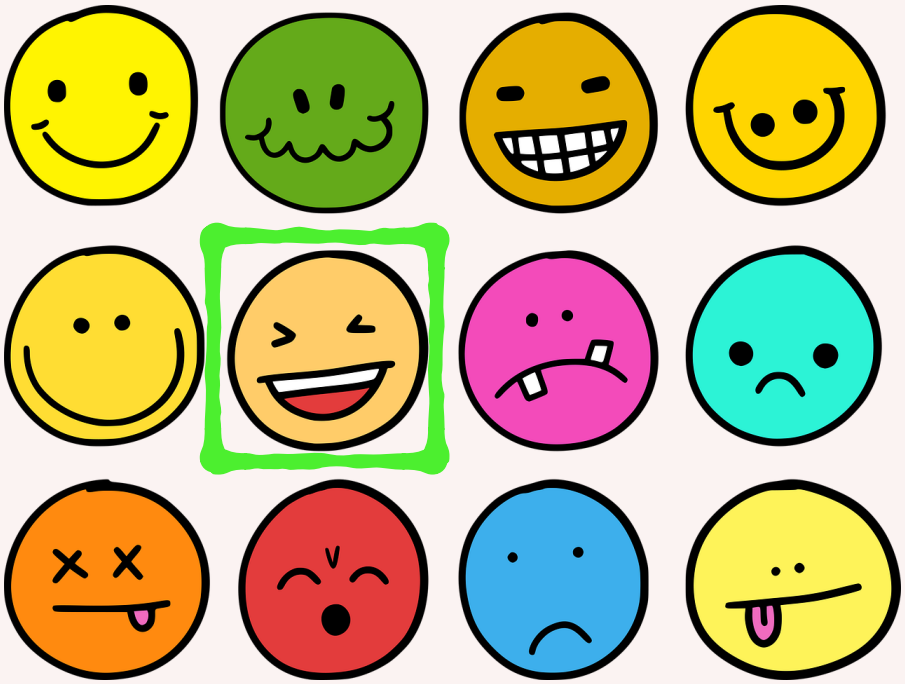
Analyze the sentiment of this customer review: 'The product arrived damaged and the customer service was unhelpful.

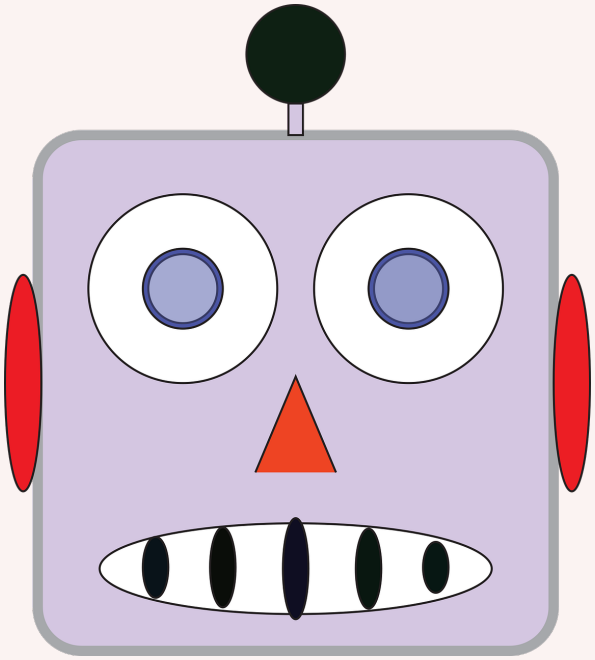
SENTIMENT ANALYSIS

PROMPT

Detect the sentiment of the tweet: 'Just had the most disappointing meal at this restaurant. Never going back again. For negative, return -1, for neutral return 0 and for positive return 1.

EMOTION DETECTION





EMOTION DETECTION

PROMPT

```
Detect the primary emotions expressed in the given social media posts.
Posts: """{value}"""
```

TONE ANALYSIS

PROMPT

```
Analyze the tone of the given email and classify it as formal or informal.
Email: """{value}"""
```

CONTENT FILTERING

PROMPT

As a content filtering system, please review the following four customer reviews and identify any inappropriate or offensive content. Please provide an appropriate action for each review:
Reviews: """{values}"""

CONVERSATION & ROLE PROMPTING

Chatbots

Interactive Storytelling

CONVERSATION & ROLE PROMPTING

PROMPT

User: "What's the weather like today?"
Model: "It's sunny and warm, perfect for outdoor activities! How can I assist you further?"
User: "Should I bring an umbrella?"
Model: "There's no rain in the forecast, so you don't need to bring an umbrella. Enjoy your day!”

CONVERSATION & ROLE PROMPTING

CONVERSATION & ROLE PROMPTING

PROMPT

User: "You are a customer support representative. Help me with my billing issue."
Model: "I apologize for the inconvenience. Please provide your account details, and I'll assist you in resolving the billing problem promptly."

CONVERSATION & ROLE PROMPTING

PROMPT

You a customer support chatbot for an e-commerce website. Begin the conversation by greeting the customer and asking how you can assist them.

CONVERSATION & ROLE PROMPTING

PROMPT

You are a detective investigating a mysterious murder case. Begin the conversation by asking the suspect, Mr. Johnson, about his whereabouts on the night of the incident.

CONVERSATION & ROLE PROMPTING

PROMPT

You are the interviewer for a position of JavaScript web developer. Conduct an interview by asking relevant questions to assess the candidate's skills and experience.
Interviewer: "Good morning! Thank you for coming in today. Let's start with a technical question. Can you explain the concept of closures in JavaScript?"
Candidate: "Certainly! In JavaScript, closures are functions that have access to variables from their outer scope, even after the outer function has finished executing. They allow for data encapsulation and help with preserving state."
Interviewer:

CODE GENERATION

PROMPT

Please create a MySQL query to fetch the order details for all customers from the "customers" table who have made purchases in the "orders" table. The "customers" table has columns [CustomerId, CustomerName, Email] and the "orders" table has columns [OrderId, CustomerId, ProductName, Quantity, Price].

CODE GENERATION

PROMPT

Create a JavaScript function that takes an array of numbers as input and sorts it in ascending order.

- Code Structure
- Algorithm Generation
- Language Specific Implementation

REASONING

PROMPT

Numbers greater than 20 in this group add up to an even number: 15, 32, 5, 13, 82, 7, 1.
A:

REASONING

PROMPT

Numbers greater than 20 in this group add up to an even number: 15, 32, 5, 13, 82, 7, 1.
Solve by breaking the problem into steps. First, identify numbers greater than 20, add them, and indicate whether the result is odd or even.
A:

TEXT TRANSLATION

PROMPT

```
Translate the following English text to Spanish:
Text: """Hello, how are you? I hope you're doing well."""
```

PARAPHRASING

PROMPT

Rephrase the following sentence.
Sentence: """The cat is sleeping peacefully on the windowsill."""

PARAPHRASING

PROMPT

Rephrase the following text for an audience of children under 7 years old.
Text: """Global warming refers to the long-term increase in Earth's average surface temperature due to human activities, primarily the emission of greenhouse gases into the atmosphere. The most significant greenhouse gas is carbon dioxide (CO2), which is released through the burning of fossil fuels such as coal, oil, and natural gas. These gases trap heat from the sun and prevent it from escaping back into space, leading to a gradual warming of the planet."""

LANGUAGE CORRECTION

PROMPT

Hi, I need help with my essay Introduction. Can you assist me with language correction and proofreading.
Introduction:"""{value}"""

COMPLETION API PARAMETERS

TEMPERATURE

PROMPT

Complete the sentence:
Doctors are

Temperature: 0.3

Temperature: 1

Temperature: 2

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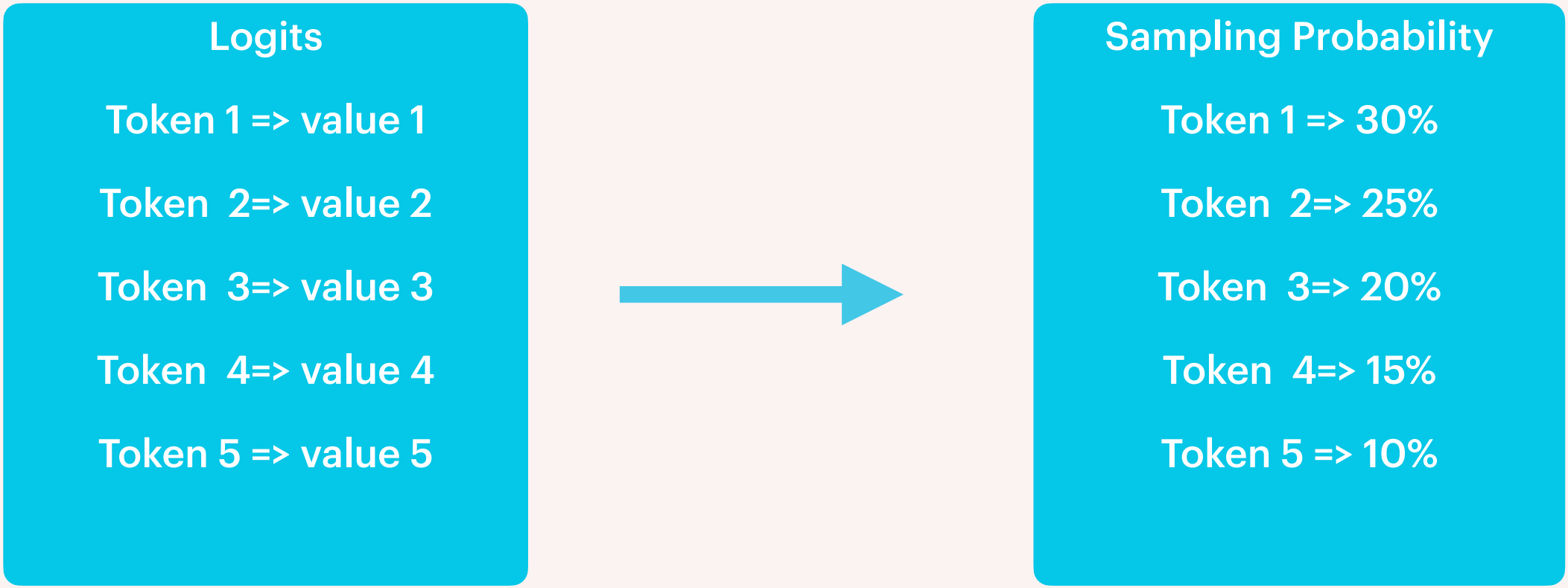
LOGITS



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HIGH TEMPERATURE APPLIED TO LOGINS

Logits	Sampling Probability
Token 1 => new_value 1	Token 1 => 26%
Token 2=> new_value 2	Token 2=> 20%
Token 3=> new_value 3	Token 3=> 19%
Token 4=> new_value 4	Token 4=> 18%
Token 5 => new_value 5	Token 5 => 17%

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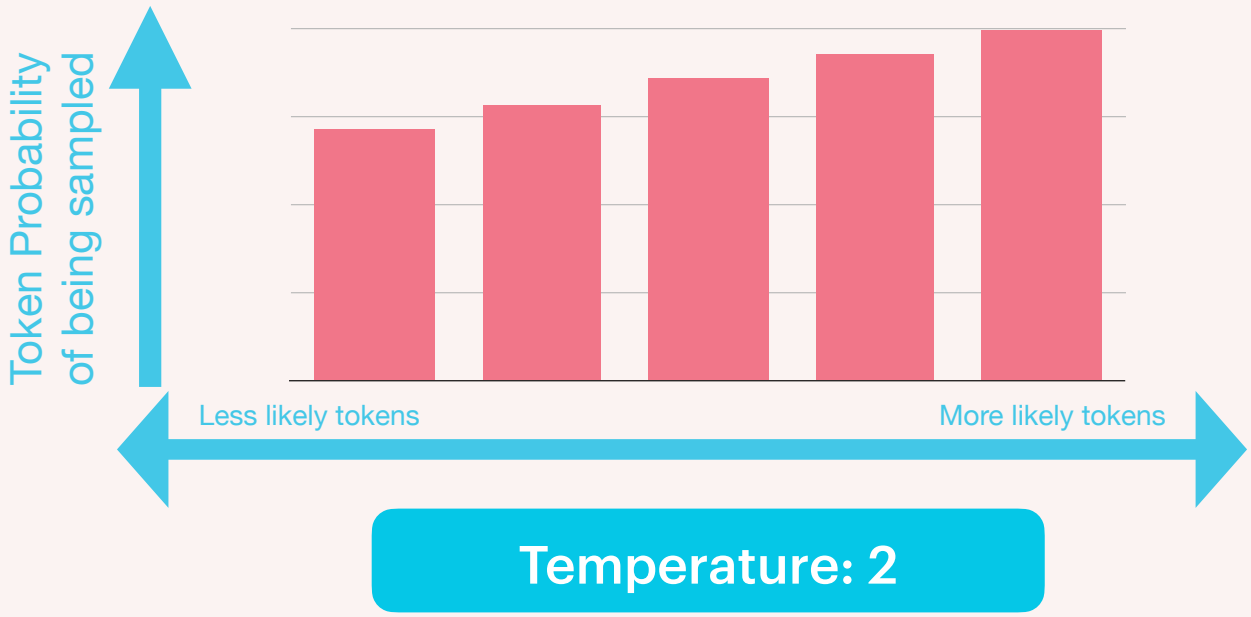
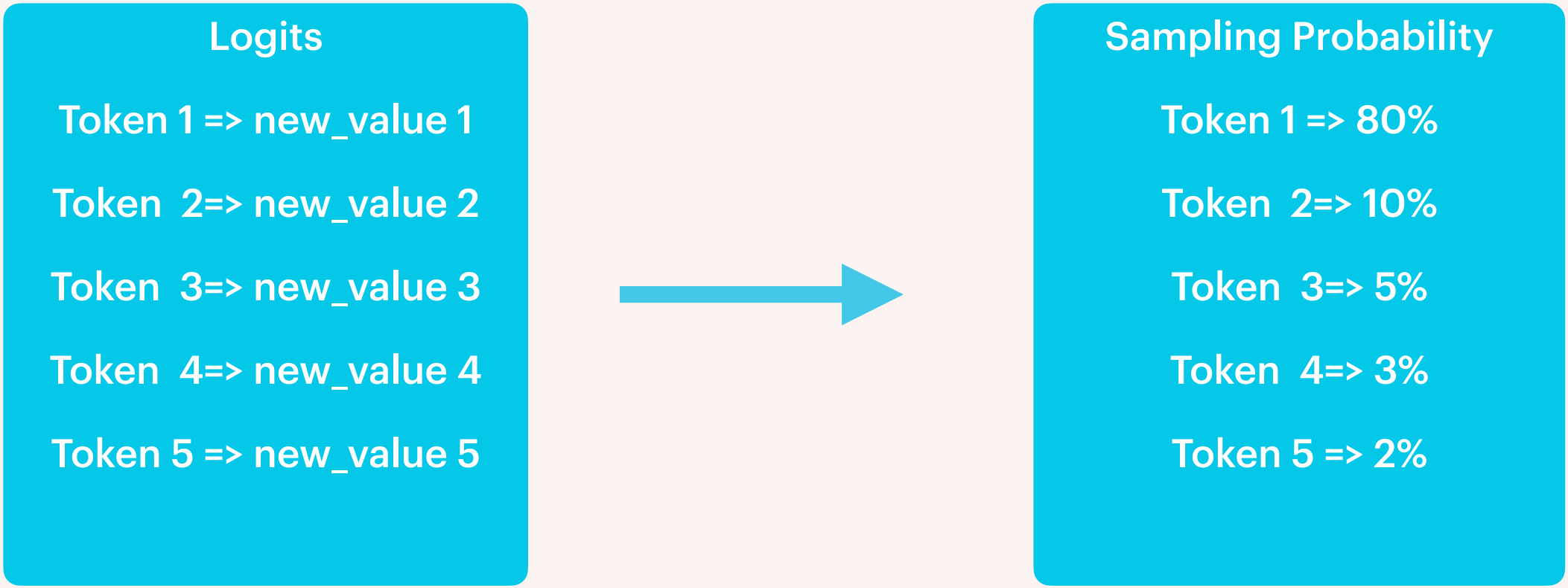
TEMPERATURE



LOW TEMPERATURE APPLIED TO LOGINS



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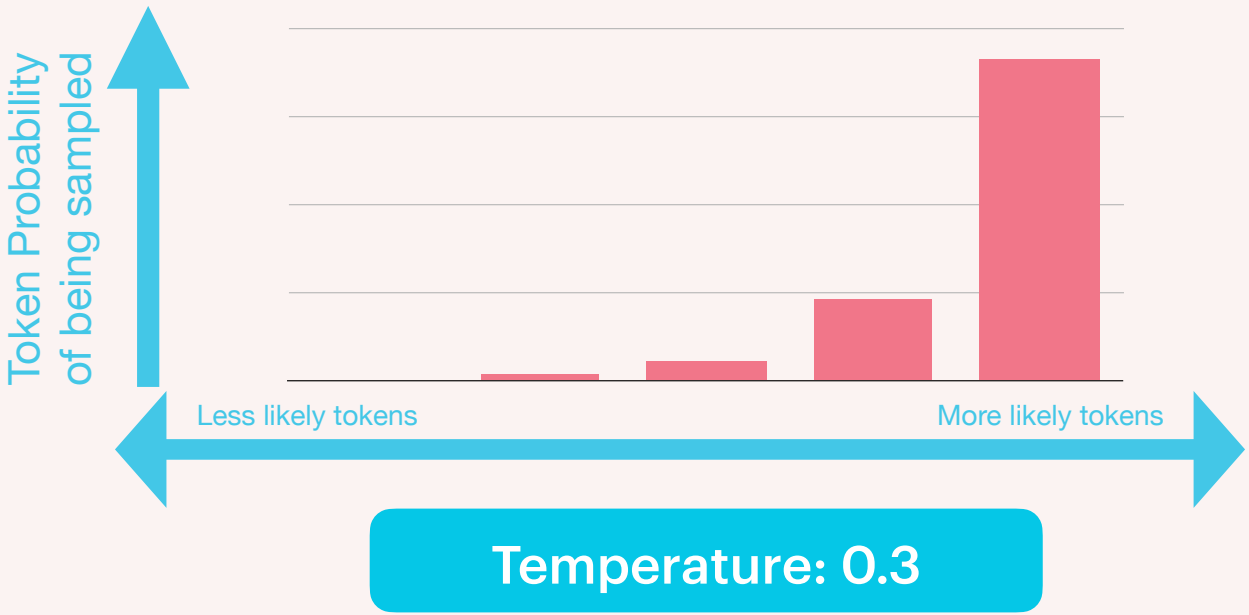
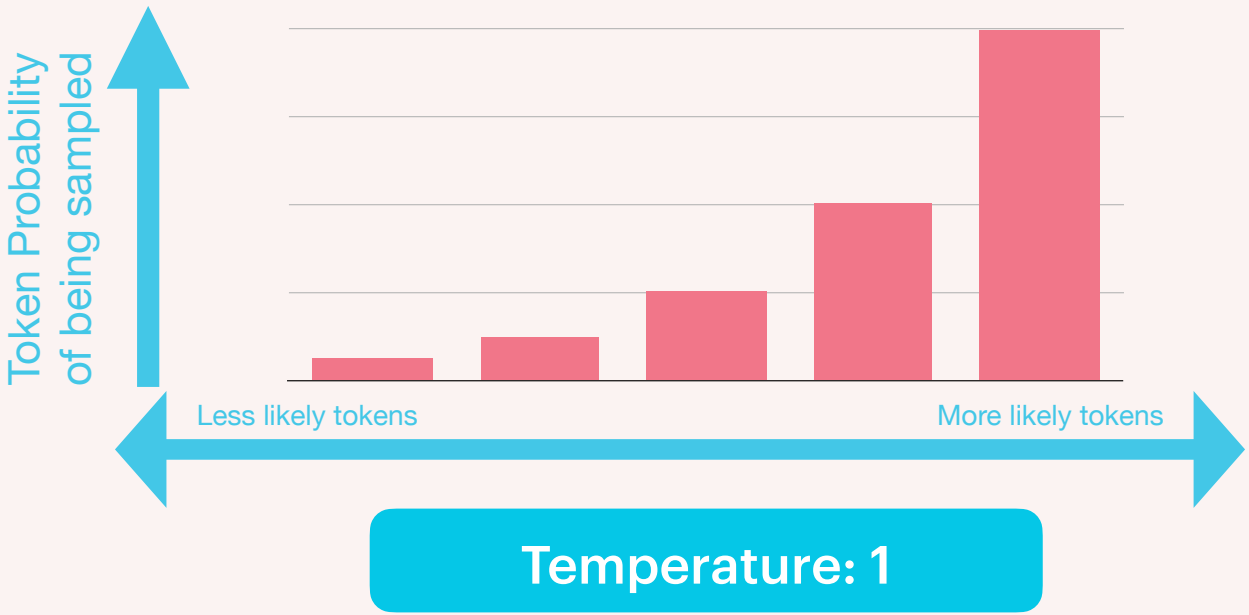
TEMPERATURE



TEMPERATURE



MAX_TOKENS

PROMPT

Cars are amazing because

max_tokens: 50

STOP SEQUENCES

PROMPT

What are the top touristic cities in europe?

Stop Sequences: [“5”, “Rome”]

STOP SEQUENCES

PROMPT

I am a question answering bot acting as a doctor. If you ask me a question related to medecine, I will answer as best as I can using one sentence. If you ask a question outside medecine, I will answer "I don't know".
Question: What is the function of the brain?

Stop Sequences: [“‘\n”, “Question”]

N (USE THE API)

PROMPT

The colour of the sky is

n: 3 (number of completions)

ECHO (USE THE API)

PROMPT

Complete the sentence:
Einstein is

echo: true (include the prompt in the completion output)

TOP P

PROMPT

Complete the sentence:
Doctors are

Top P: 0

Top P: 0.3

Top P: 1

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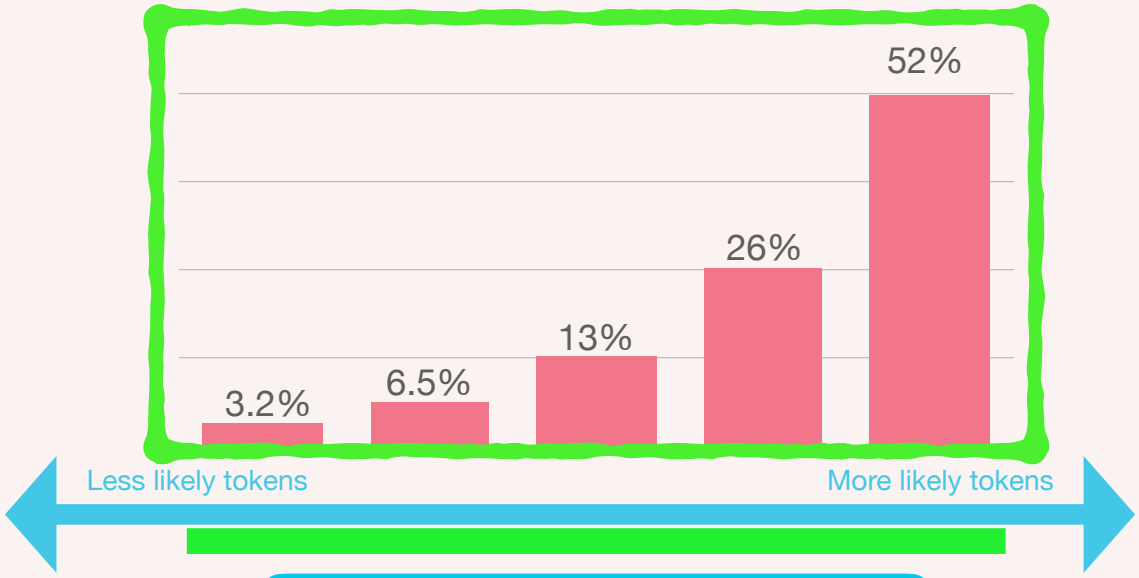
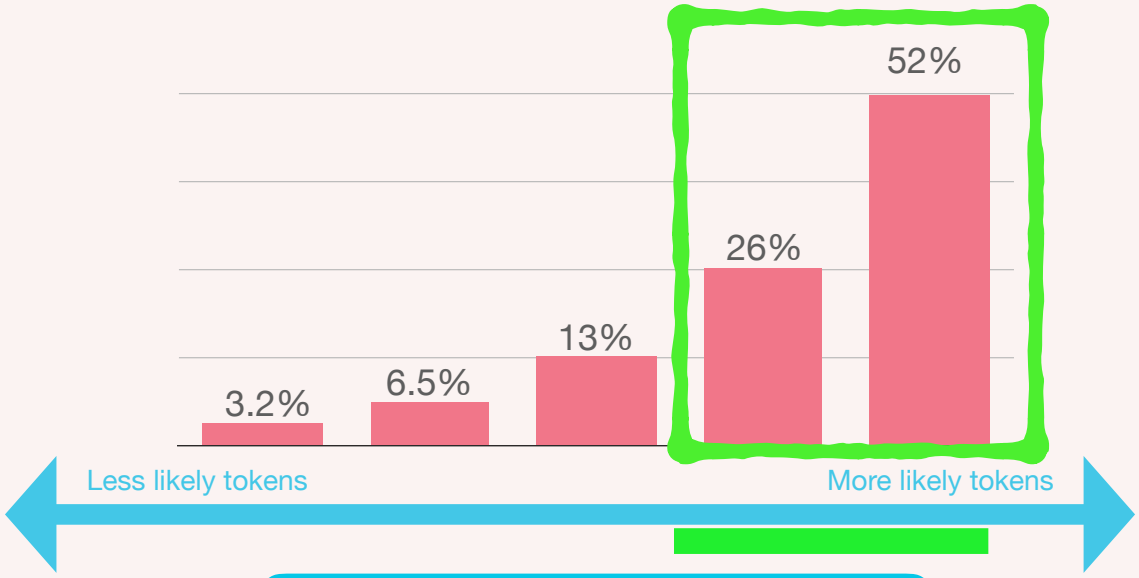
TOP P

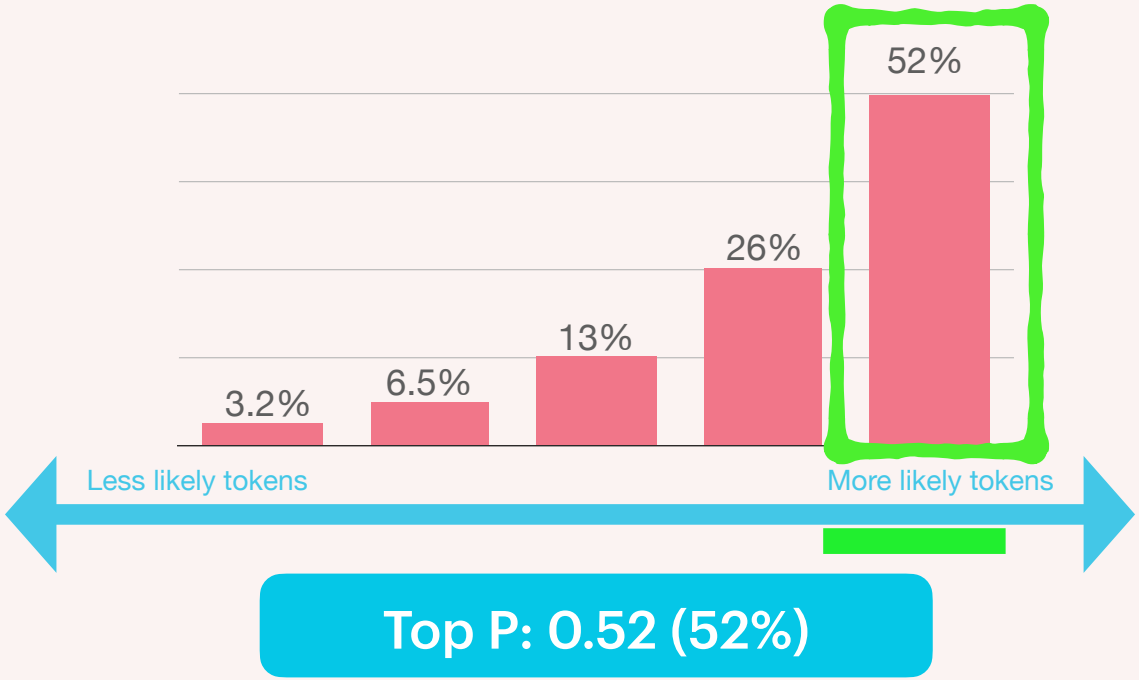

52%
26%
13%
6.5%
3.2%
Less likely tokens
More likely tokens
Top P: 1 (100%)

TOP P



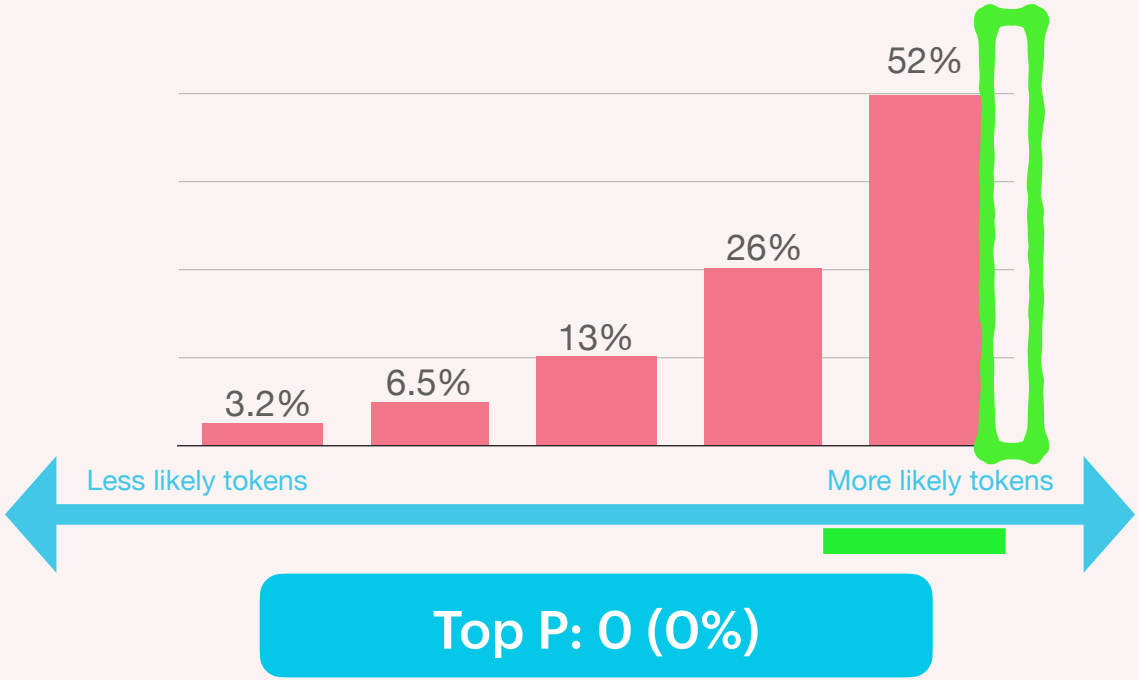
Top P: 0.78 (78%)

TOP P



Top P: 0.52 (52%)

TOP P



FREQUENCY PENALTY / PRESENCE PENALTY

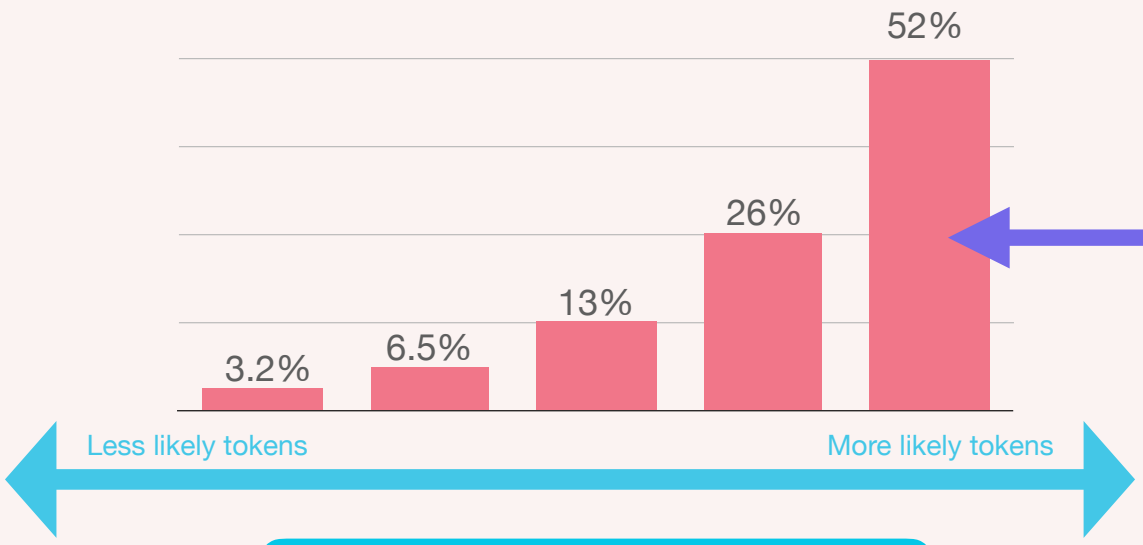
FREQUENCY PENALTY

Positive values penalize new tokens based on:
“Their existing frequency in the text so far”.
Result:
Decreasing the model's likelihood to repeat the same line verbatim.

PRESENCE PENALTY

Positive values penalize new tokens based on:
“Whether they appear in the text so far”.
Result:
Increasing the model's likelihood to talk about new topics.

FREQUENCY PENALTY

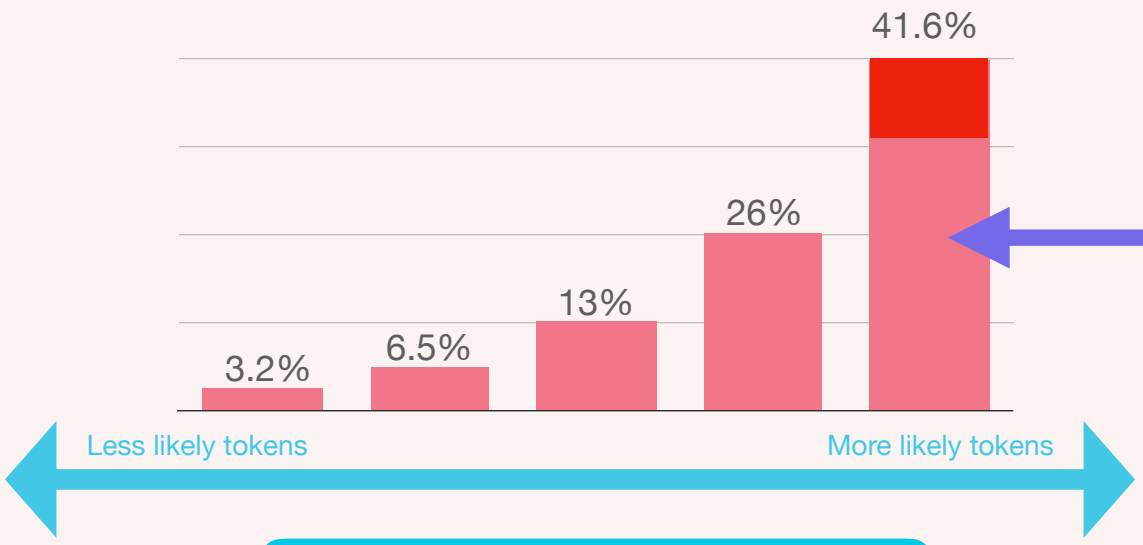


Appeared:
0 times

Applied Penalty:
0%

Frequency Penalty: 2

FREQUENCY PENALTY

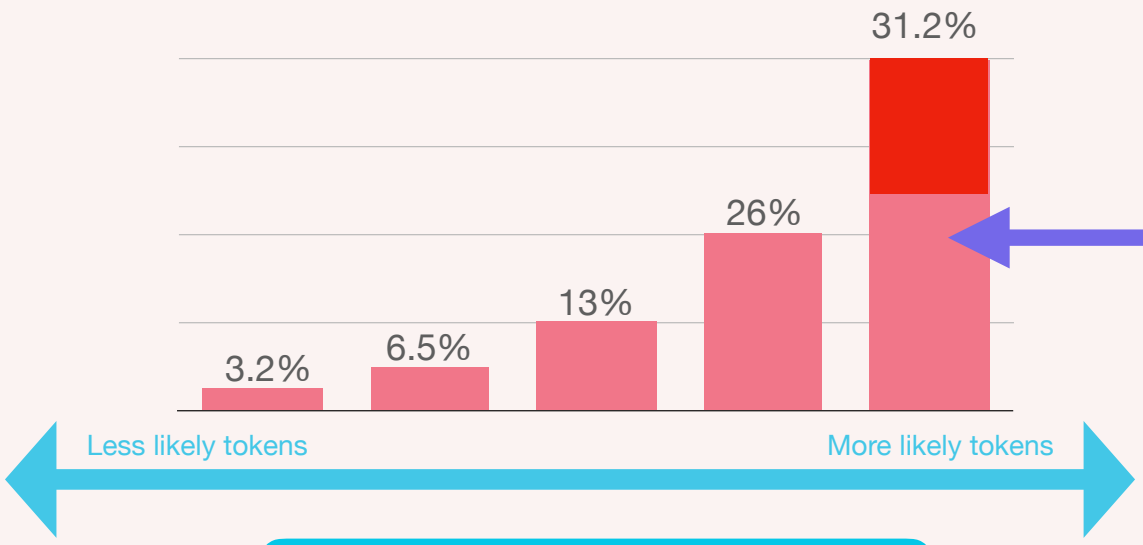


Appeared:
1 time

Applied Penalty:
20%

Frequency Penalty: 2

FREQUENCY PENALTY

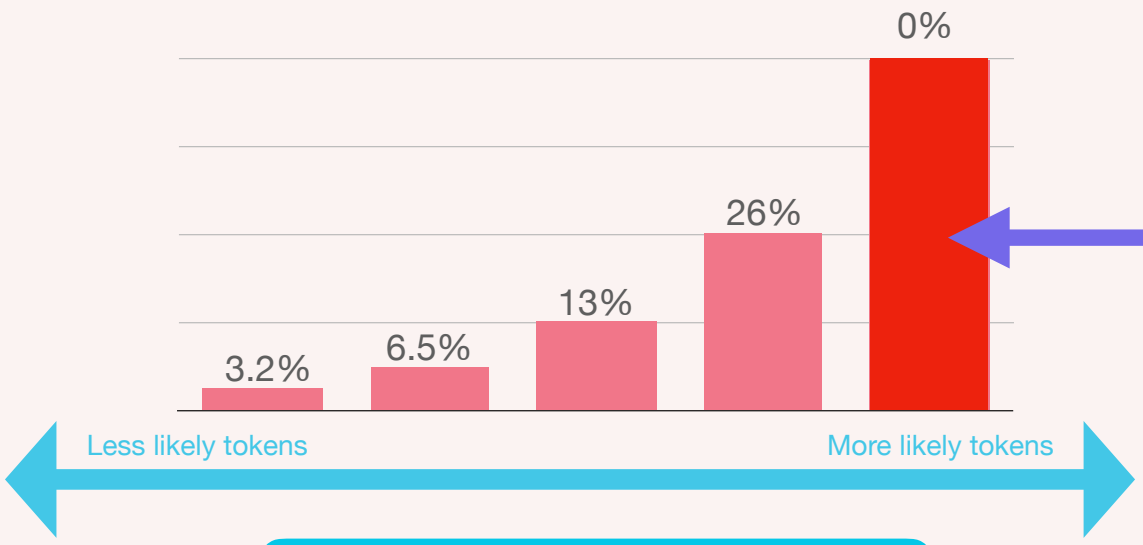


Appeared:
2 times

Applied Penalty:
40%

Frequency Penalty: 2

FREQUENCY PENALTY

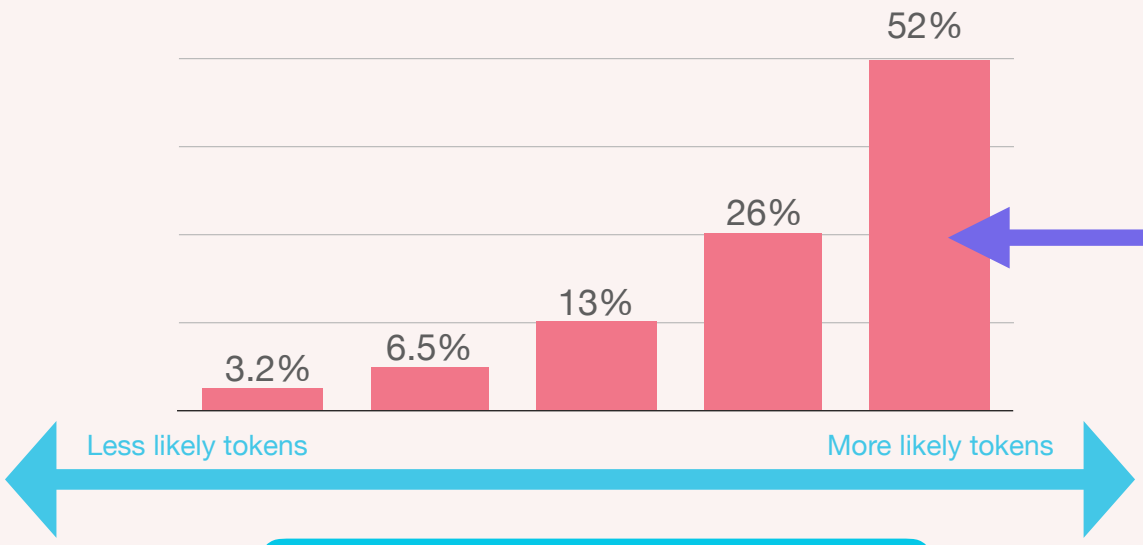


Appeared:
5 times

Applied Penalty:
100%

Frequency Penalty: 2

PRESENCE PENALTY



Appeared:
0 times

Applied Penalty:
0%

Presence Penalty: 2

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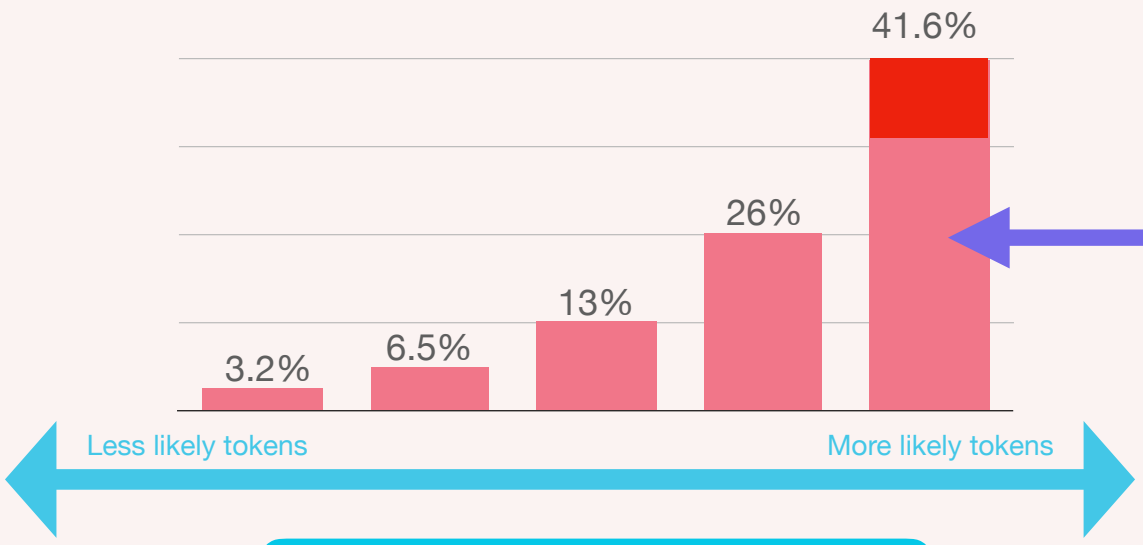
PRESENCE PENALTY

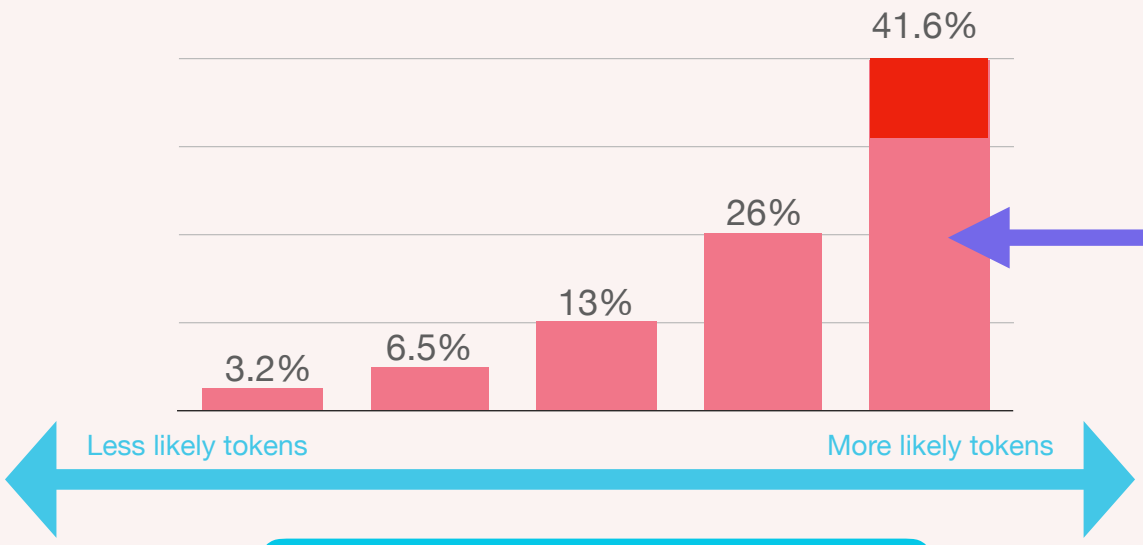


Appeared:
1 time

Applied Penalty:
20%

Presence Penalty: 2

PRESENCE PENALTY



Appeared:
10 times

Applied Penalty:
20%

Presence Penalty: 2

FREQUENCY PENALTY

PROMPT

Generate 50 whole numbers. Make sure the numbers are smaller than 7.

Frequency penalty: 0

Frequency penalty: 0.5

Frequency penalty: 1

Frequency penalty: 2

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PRESENCE PENALTY

PROMPT

Generate 50 whole numbers. Make sure the numbers are smaller than 7.

Presence penalty: 0	Presence penalty: 0.5	Presence penalty: 1	Presence penalty: 2

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STREAM

PROMPT

The top 3 countries are:

stream: false → Response received after the model has finished generating the complete response

stream: true → The API response is streamed in chunks, allowing you to process and display the response incrementally.

STREAM SET TO TRUE

PROMPT

The top 3 countries are:

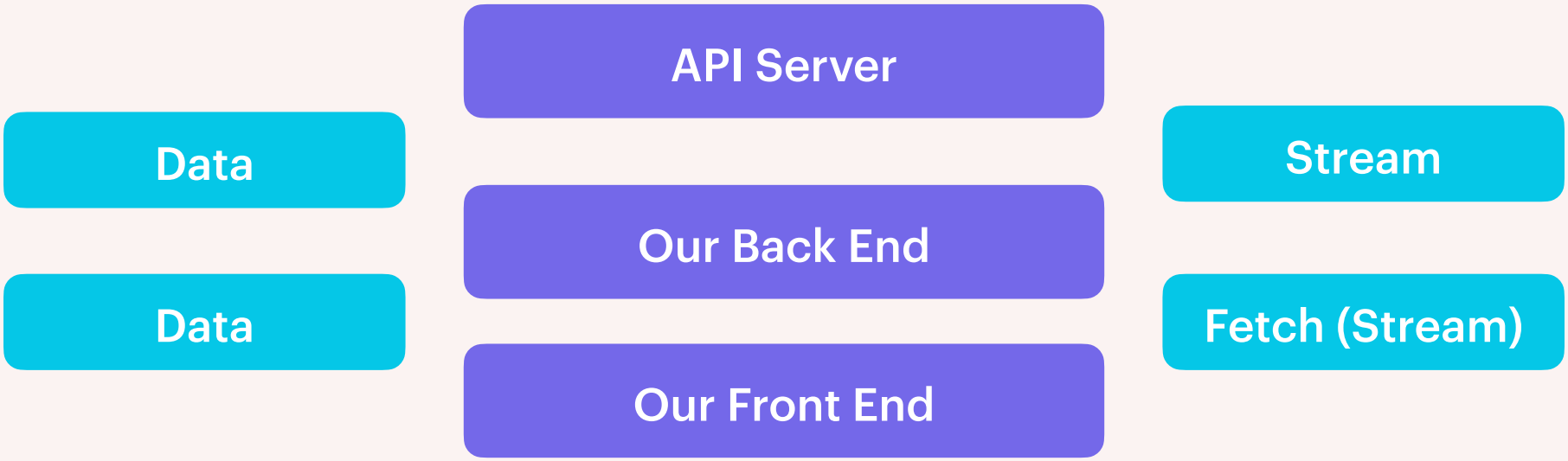
Message 1

Message 2

...

data: [DONE]

STREAM


Data
Data
API Server
Our Back End
Our Front End
Stream
Fetch (Stream)

PROMPTING TIPS

BE SPECIFIC

ORIGINAL PROMPT

Cars are

REVISED PROMPT

Complete the sentence:
Cars are

ORIGINAL PROMPT

Complete the sentence:
Cars are

REVISED PROMPT

Complete the sentence:
Cars are amazing because

ORIGINAL PROMPT

Recommend some hotels in London.

REVISED PROMPT

Recommend three budget-friendly hotels in central London with good public transportation access.

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ORIGINAL PROMPT

Create a marketing campaign

REVISED PROMPT

Create a targeted email marketing campaign to promote a new product launch among existing customers

ORIGINAL PROMPT

Write a business proposal

REVISED PROMPT

Write a detailed business proposal outlining a partnership opportunity with a specific company in the manufacturing industry to develop and market a new product

ORIGINAL PROMPT

Write a business plan

REVISED PROMPT

Write a comprehensive business plan for a restaurant startup in the hospitality industry, outlining the concept, target market, competitive analysis, marketing strategies, and financial projections

ORIGINAL PROMPT

Write a promotional email.

REVISED PROMPT

Write a persuasive email with a clear call to action, encouraging recipients to sign up for a free trial of your software.

PROVIDE CONTEXT

ORIGINAL PROMPT

What's the best exercise for weight loss?

REVISED PROMPT

I'm a beginner with no injuries or health issues, I am 60 years old. What are some effective exercises I can do to support weight loss and improve overall fitness?

ORIGINAL PROMPT

How can I reduce stress?

REVISED PROMPT

I've been feeling overwhelmed with work-related deadlines and experiencing frequent headaches and trouble sleeping. What are some effective stress management techniques I can try to reduce these symptoms?

ORIGINAL PROMPT

Suggest a pricing strategy for a new product.

REVISED PROMPT

Suggest a value-based pricing strategy for a luxury watch brand. Consider factors such as the brand reputation, craftsmanship, exclusivity, and target market segment.

USE SEPARATORS

ORIGINAL PROMPT

Summarize the text below as a bullet point list of the most important points.
Take care of your physical health: Prioritize regular exercise, maintain a balanced diet, and schedule regular check-ups with healthcare professionals to stay on top of your well-being.
Invest in your mental health: Prioritize self-care, manage stress levels, and seek support when needed. Consider practices like meditation or therapy to promote mental well-being.

REVISED PROMPT

Summarize the text below as a bullet point list of the most important points.
Text: """Take care of your physical health: Prioritize regular exercise, maintain a balanced diet, and schedule regular check-ups with healthcare professionals to stay on top of your well-being.
Invest in your mental health: Prioritize self-care, manage stress levels, and seek support when needed. Consider practices like meditation or therapy to promote mental well-being."""

SPECIFY THE LENGTH OF THE RESPONSE

ORIGINAL PROMPT

Tell me about the history of space exploration.

REVISED PROMPT

Tell me about the history of space exploration in 3-5 sentences.

ORIGINAL PROMPT

Summarize the text below as a bullet point list of the most important points.
Text: """{BBC article}"""

REVISED PROMPT

Summarize the text below as a bullet point list of the most important points. Use a maximum of 4 sentences. Text: """{BBC article}"""

REDUCE FLUFFY DESCRIPTIONS

ORIGINAL PROMPT

How do astronauts eat in space? Provide a brief overview using a few sentences only.

REVISED PROMPT

How do astronauts eat in space? Use a 3 to 5 sentence paragraph.

SPECIFY THE DESIRED FORMAT

ORIGINAL PROMPT

```
Extract character names and ages from the text below.
Text: """{text_value}"""
```

REVISED PROMPT

```
Extract character names and ages from the text below.
Desired format: Character names: <comma_separated_list_of_names_and_ages>
Text: """{text_value}"""
```

ORIGINAL PROMPT

Give me a list of the top 7 biggest planets in the solar system with their circumference and average surface temperature.

REVISED PROMPT

Give me a list of the top 7 biggest planets in the solar system with their circumference and average surface temperature.
Desired format: JSON array with the planet name as the key.

ORIGINAL PROMPT

Please provide information about the UK. Include: Population, Unemployment rate, Annual GDP, GDP growth forecast for 2026.

REVISED PROMPT

Please provide information about the UK in the following format:
Population: [Population]
Unemployment rate: [Unemployment rate]
Annual GDP: [Annual GDP]
GDP growth forecast for 2026: [GDP growth forecast]

ORIGINAL PROMPT

What are some budget-friendly accommodations in New York City?

REVISED PROMPT

What are some budget-friendly accommodations in New York City? Please provide a table format.

ORIGINAL PROMPT

Tell me about the top tourist attractions in Paris.

REVISED PROMPT

Tell me about the top tourist attractions in Paris. Please provide a numbered list format.

TO DO OR NOT TO DO?

ORIGINAL PROMPT

```
The following is an agent that recommends books to a customer.
Customer: Please recommend a book for me.
Agent:
```

REVISED PROMPT

```
The following is an agent that recommends books to a customer. Please ask for the customers' interests and reading preferences before making a recommendation.
Customer: Please recommend a book for me.
Agent:
```

ORIGINAL PROMPT

The following is an agent that recommends books to a customer. Please ask for the customers' interests and reading preferences before making a recommendation.
Customer: Please recommend a book for me.
Agent:

REVISED PROMPT

The following is an agent that recommends books to a customer. The agent is responsible for recommending a book from the top global trending books. It should refrain from asking users for their reading habits, reading level, and personal information. If the agent doesn't have a book to recommend, it should respond with "Sorry, couldn't find a book to recommend today."
Customer: Please recommend a book for me.
Agent:

ZERO SHOT, ONE SHOT AND FEW-SHOT CONCEPTS

ZERO SHOT PROMPT

PROMPT

```
Translate the following English text to Spanish:
Text: """Hello, how are you? I hope you're doing well."""
```

ORIGINAL PROMPT

Student 1 grade: 50 => Pass or Fail?

REVISED PROMPT

Student 1 grade: 50 => Pass.
Student 2 grade: 80 =>

ORIGINAL PROMPT

```
Student 1 grade: 50 => Pass.
Student 2 grade: 80 =>
```

REVISED PROMPT

```
Student 2 grade: 39 => Fail.
Student 3 grade: 40 => Pass.
Student 1 grade: 50 => Pass.
Student 4 grade: 49
```

ORIGINAL PROMPT

```
Student 1 grade: 50 => Pass.
Student 2 grade: 39 => Fail.
Student 3 grade: 40 => Pass.
Student 4 grade: 49
```

REVISED PROMPT

```
Student 1 grade: 50 => Pass
Student 2 grade: 39 => Fail
Student 3 grade: 40 => Pass
Student 4 grade: 41 => Pass
Student 5 grade: 30 => Fail
Student 6 grade: 51 => Pass
Student 7 grade: 42 =>
```

CHAIN OF THOUGHT PROMPTING

ORIGINAL PROMPT

Student 1 grade: 50. This student passes.
Student 2 grade: 45 =>

REVISED PROMPT

Student 1 grade: 50. 50 is greater than or equal to 40, so this student passes.
Student 2 grade: 45 =>

Initial information

Logical inference

Transition to the next

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THINK STEP BY STEP

ORIGINAL PROMPT

I went to the market and bought 11 oranges. I gave 3 oranges to the neighbour and 4 oranges to the repairman. I then went and bought 7 more oranges and ate 1. How many oranges am I left with?

REVISED PROMPT

I went to the market and bought 11 oranges. I gave 3 oranges to the neighbour and 4 oranges to the repairman. I then went and bought 7 more oranges and ate 1. How many oranges am I left with? Let's think step by step.

USE ROLE PLAY

ORIGINAL PROMPT

Discuss Thomas Edison's groundbreaking inventions, such as the electric light bulb and phonograph, and how they have revolutionised the world. Showcase his innovative spirit.

REVISED PROMPT

As Thomas Edison, you are attending a modern-day conference where you meet a renowned scientist. Engage in a role play conversation where you discuss your groundbreaking inventions, such as the electric light bulb and phonograph, and how they have revolutionised the world. Act as Thomas Edison and showcase your innovative spirit!

USE REFERENCES

ORIGINAL PROMPT

Write a research article on the topic of climate change.
Use about 300 words.

REVISED PROMPT

Write a research article on the topic of climate change. Use references to support your arguments and provide evidence for the claims you make. Cite at least three credible sources in your discussion. Use about 300 words.

HANDHOLDING THE LANGUAGE MODEL

ORIGINAL PROMPT

Write an essay on the benefits of physical exercise.

REVISED PROMPT

Write an essay on the benefits of physical exercise. Step 1: Begin with a captivating introduction. Step 2: Explain the importance of exercise for physical health. Step 3: Discuss the positive effects on mental well-being. Step 4: Provide examples and evidence. Step 5: Conclude with a strong summary.

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ORIGINAL PROMPT

Write an essay on the importance of reading books.

REVISED PROMPT

Write an essay on the importance of reading books following this structure:
Introduction:
1.Begin with a captivating opening sentence that grabs the reader's attention.
2.Provide a brief background on the significance of reading books.
3.Present a clear thesis statement that highlights the main argument.
Body Paragraphs:
4. Start the first paragraph by discussing the benefits of reading, such as knowledge expansion and cognitive development.
5. Give examples and evidence to support the claims.
6. Transition to the second body paragraph and explore how reading enhances empathy and emotional intelligence.
7. Provide real-life instances to illustrate the point.
8. In the third body paragraph, emphasize the role of reading in fostering creativity and imagination.
9. Support the argument with relevant examples.
Conclusion:
10. Summarize the main points discussed in the body paragraphs.
11. Reinforce the importance of reading and its impact on personal growth.
12. Conclude with a thought-provoking statement that leaves a lasting impression on the reader."

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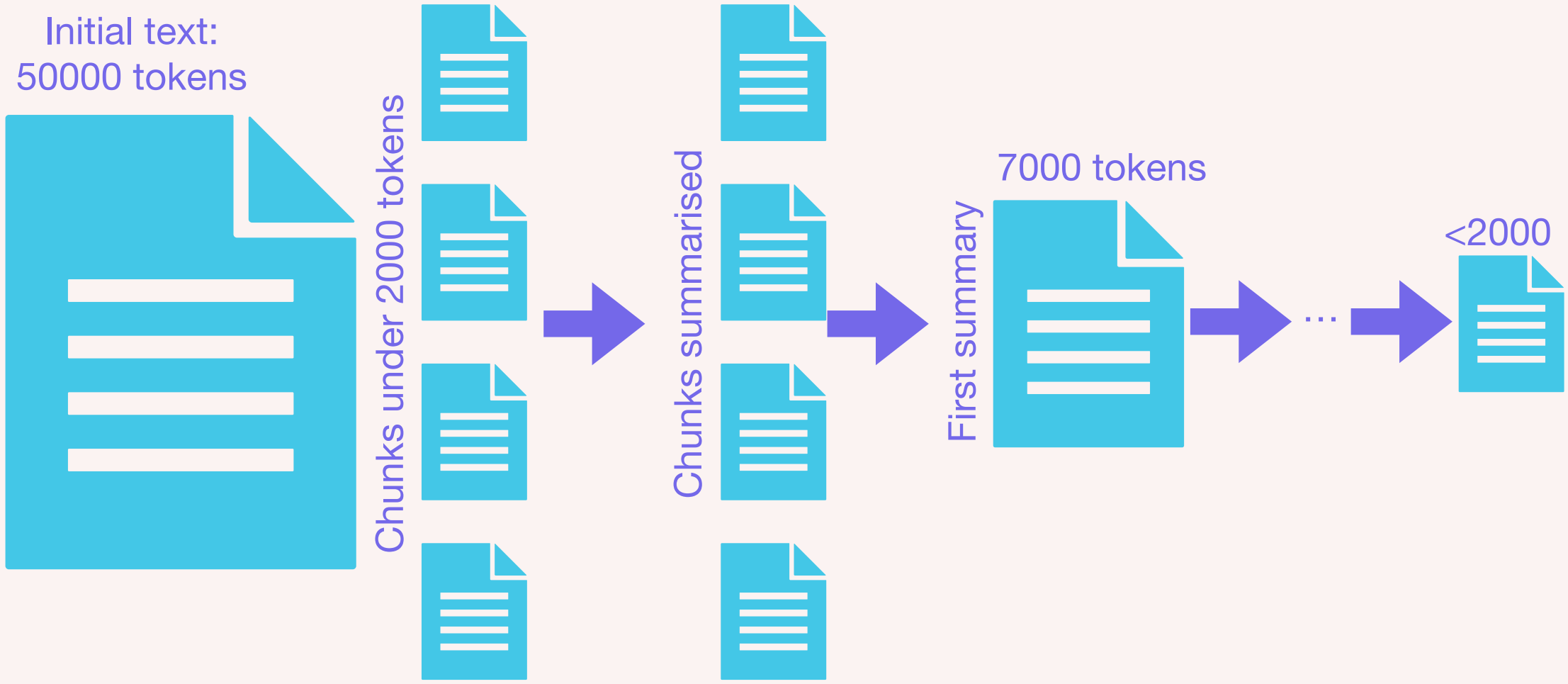
WHISPER

PDF BOOK SUMMARISER APP



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CHAT API - GPT-3.5-TURBO - GPT-4

CHAT VS COMPLETION API: INPUT / OUTPUT

COMPLETION API

PROMPT

```
Translate the following English text to Spanish:
Text: """Hello, how are you? I hope you're doing well."""
```

COMPLETION API REQUEST

```
async function runCompletion(prompt) {
  const response = await openai.createCompletion({
    model: "text-davinci-003",
    prompt: prompt,
    temperature: 1,
    max_tokens: 50,
    top_p: 1,
    frequency_penalty: 0,
    presence_penalty: 0,
  });
  return response;
}
```

CHAT API REQUEST

```
async function runCompletion(prompt) {
  const response = await openai.createChatCompletion({
    model: "gpt-4",
    messages: [
      {role: "system", content: "Your are a doctor."},
      {role: "user", content: prompt},
    ],
    temperature: 1,
    max_tokens: 100,
    top_p: 1,
    frequency_penalty: 0,
    presence_penalty: 0,
  });
```

YOUR FIRST CHAT API REQUEST

CHAT VS COMPLETION API: MODELS AND PRICING

	Series	Context (input + output)	Completion API	Chat API	Price per 1M input tokens	Price per 1M output tokens
text-davinci-003	GPT-3	4096 tokens	X		20$	20$
text-curie-001	GPT-3	4096 tokens	X		2$	2$
text-babbage-001	GPT-3	4096 tokens	X		5$	5$
text-ada-001	GPT-3	16384 tokens	X		0.4$	0.4$
text-davinci-002	GPT-3	4096 tokens	X		20$	20$
text-davinci-001	GPT-3	2048 tokens	X		20$	20$
gpt-3.5-turbo	GPT-3.5	4096 tokens		X	1.5$	2$
gpt-3.5-turbo-16k	GPT-3.5	16385 tokens		X	3$	4$
gpt-4 8K context	GPT-4	8,192 tokens		X	30$	60$
gpt-4 32k context	GPT-4	32,768 tokens		X	60$	120$

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CHAT VS COMPLETION API: MODEL STRENGTHS

GPT-3 Series	Description	Strengths
text-davinci-003	Most capable model in the GPT-3 series can perform any task the other GPT-3 models can, often with higher quality, longer output and better instruction following. It can process up to 4000 tokens per request.	Complex intent, cause and effect, creative generation, search, summarization for audience.
text-curie-001	Very capable, but faster and lower cost than text-davinci-003	Language translation, complex classification, sentiment summarisation.
text-babbage-001	Capable of straightforward tasks very fast and lower cost.	Moderate classification, semantic search.
text-ada-001	Capable of simple tasks, usually the fastest model in the GPT-3 series, and lowest cost.	Parsing text, simple classification, address correction, keywords
text-davinci-002	Second generation model in the GPT-3 series, can perform any task the earlier GPT-3 models can, often with less context.	Complex intent, cause and effect, creative generation, search summarization for audience
text-davinci-001	Older version of the most capable model in the GPT-3 series, can perform any task the other GPT-3 models can, often with less context	Complex intent, cause and effect, creative generation, search summarization for audience.

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GPT-3.5 & GPT-4 Series	Description	Strengths
gpt-3.5-turbo	A highly advanced language model based on the GPT-3.5 architecture, capable of understanding and generating human-like text.	Versatile and creative in generating coherent responses, capable of handling a wide range of prompts, and provides accurate and detailed information.
gpt-3.5-turbo-16k	An enhanced version of gpt-3.5-turbo with an increased context window of 16,000 tokens, allowing for longer and more comprehensive interactions.	Offers improved context understanding, enabling it to generate more contextually relevant responses and handle longer conversations effectively.
gpt-4 8K context	The next iteration of the GPT series, gpt-4 8K context provides enhanced language capabilities and an expanded context window of 8,000 tokens.	Exhibits improved text generation quality, contextual understanding, and has a larger memory capacity, enabling it to handle complex tasks and longer conversations with greater accuracy.
gpt-4 32k context	The most advanced version of the GPT series, gpt-4 32k context offers even greater language proficiency and an expanded context window of 32,000 tokens.	Provides superior context comprehension and generates highly coherent and contextually accurate responses. It excels in handling extremely complex queries and longer conversations while maintaining high-quality outputs.

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ENHANCEMENTS OF GPT-4 COMPARED TO GPT-3

Topics	Enhancements of GPT-4 compared to GPT-3
Linguistic Finess	GPT-4 has improved linguistic finesse, understanding and generating different dialects, and responding to emotions expressed in the text.
Answering complex questions	GPT-4 can answer complex questions by synthesizing information from multiple sources and can properly cite sources when generating text.
Creativity	GPT-4 demonstrates improved creativity and coherence in generating stories, poems, and essays.
Problem-solving	GPT-4 has enhanced complex problem-solving abilities, including solving advanced mathematical and scientific problems.
Programming abilities	GPT-4 has improved programming capabilities, allowing it to generate code snippets and debug existing code efficiently.
Data to text	GPT-4 can analyze and comment on images and graphics, making it versatile for tasks involving visual content.
Minimising inappropriate responses	GPT-4 implements better mechanisms to minimize inappropriate or biased responses.

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Topics	Enhancements of GPT-4 compared to GPT-3
Number of parameters	GPT-4 has been trained on more data and can consider over 1 trillion parameters, while GPT-3.5 considers 175 billion parameters.
Human and AI feedback	GPT-4 was trained through human and AI feedback for an additional six months.
Data recency	GPT-4 is trained on more recent data, including information up to September 2021 vs June 2020 for GPT-3
Illegal responses	GPT-4 has improved safeguards to reduce the likelihood of delivering harmful or illegal responses.
Information synthesis	GPT-4 has enhanced informational synthesis and can consider multiple factors and sources of information.
Context	GPT-4 has a larger context window of around 25,000 words.
Speed	GPT-4 is slower in its responses compared to GPT-3.5, taking a minute or more for larger responses.

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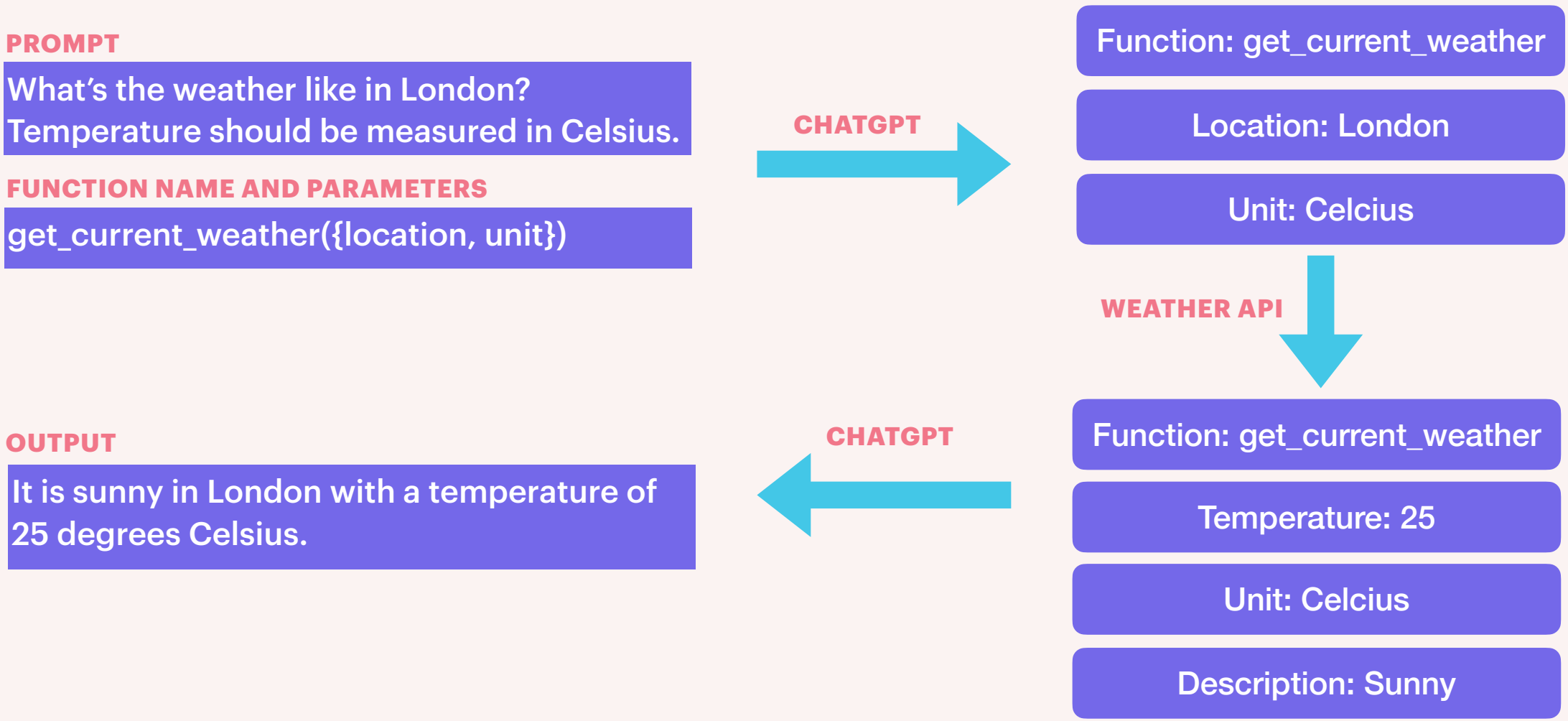
GPT-4-0314 (MARCH 2023) IS NOW DEPRECATED

GPT-4-0613 (JUNE 2023)
WHAT IS NEW?
FUNCTION CALLING



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PROMPT

What's the weather like in London? Temperature should be measured in Celsius.

FUNCTION NAME AND PARAMETERS

"name": "get_current_weather"
"Description: "Get the current weather in a given location"
"Parameters" => object with two properties "location" (string) and "unit" (string)

OUTPUT USING FUNCTION CALLING IN THE LATEST GPT-4 VERSION

```
"function_call":{
  "name": "get_current_weather"
  "arguments": "{ \"location\" : \"London\" , \"unit\" : \"celsius\" }"
}
```

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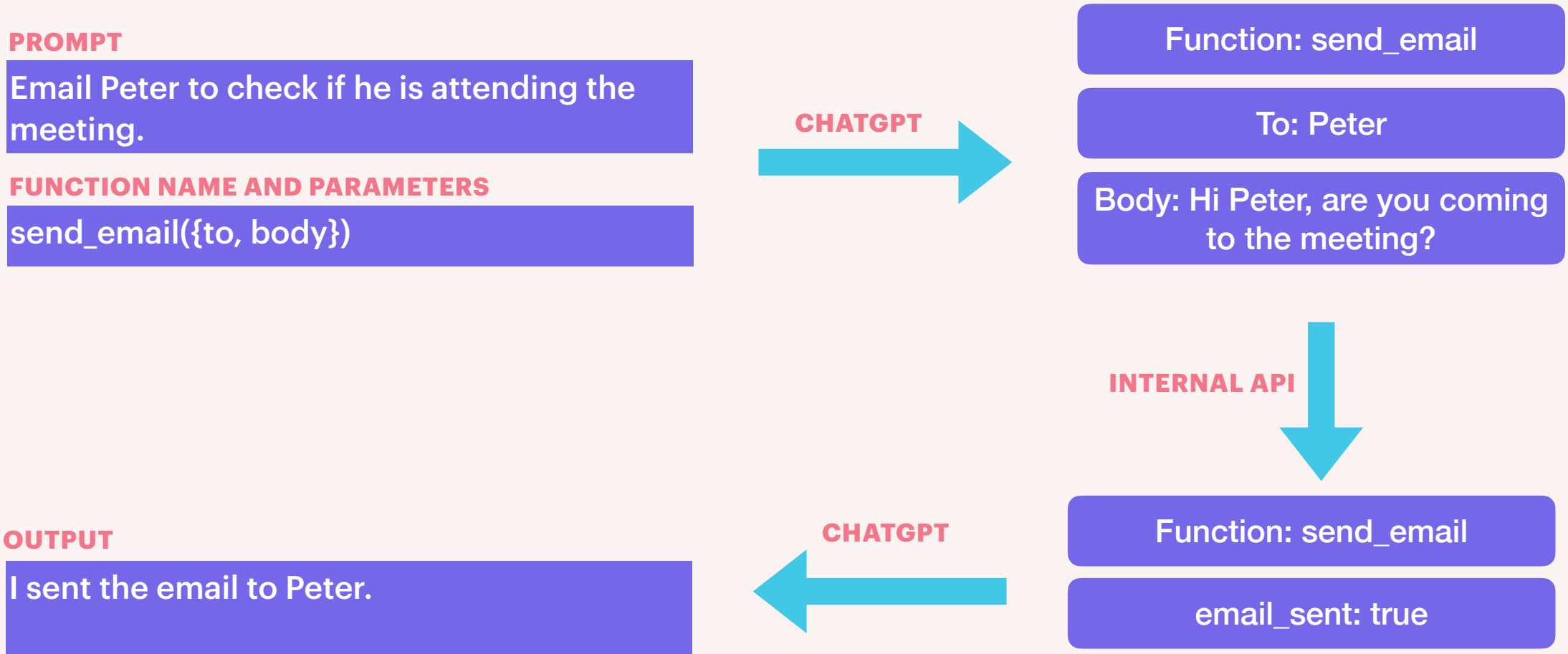

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PROMPT

Email Peter to check if he is attending the meeting.

FUNCTION NAME AND PARAMETERS

“name”: “send_email”
“Description: “send an email to someone”
“Parameters” => object with two properties “to” (string) and “body” (string)

OUTPUT USING FUNCTION CALLING IN THE LATEST GPT-4 VERSION

```
“function_call”:{
  “name”: “send_email”
  “arguments”: “{ \”to\” : \”Peter\” , \“body\” : \“Are you coming to the meeting?\” }”
}
```

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PROMPT

Who are my top ten customers this month?

FUNCTION NAME AND PARAMETERS

get_customers_by_revenue({start_date, end_date, limit})

CHATGPT

Function: get_customers_by_revenue

start_date: 01-07-2023

end_date: 31-07-2023

limit: 10

INTERNAL API

Function: get_customers_by_revenue

[customer1, … , customer10]

CHATGPT

OUTPUT

Your top 10 customers this month are:
Customer 1
…

Customer 10

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PROMPT

Who are my top ten customers this month?

FUNCTION NAME AND PARAMETERS

“name”: “get_customers_by_revenue”
“Description: “Get top customers by revenue”
“Parameters” => object with 2 properties “start_date” (string), “end_date” (string) & limit (string)

OUTPUT USING FUNCTION CALLING IN THE LATEST GPT-4 VERSION

```
“function_call”:{
  “name”: “get_customers_by_revenue”
  “arguments”: “{ \”start_date\” : \”01-07-2023\” , \“end_date\” : \“31-07-2023\” , \
“limit\” : \“10\” }”
```

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CHAT API FUNCTIONS

https://apidog.com/blog/openai-updates-gpt-3-5-turbo-and-gpt-4/#:~:text=The%2016k%20context%20version%2C%20GPT,003per1Kinputtokensand0.

EMBEDDINGS

STRING

king

EMBEDDING

EMBEDDING

[-0.002363682,0.043249585, ...]
1536 floats total for text-embedding-ada-002

STRING 1

Global warming

EMBEDDING

EMBEDDING1

[-0.006363682,0.023249885, ...]
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STRING 2

Climate Change

EMBEDDING

EMBEDDING2

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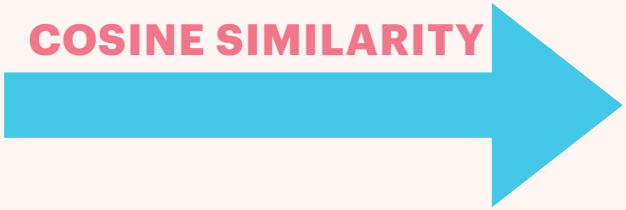
EMBEDDING1

[-0.006363682,0.023249885, ...]
1536 floats total for text-embedding-ada-002

EMBEDDING2

[-0.003343652,0.021461521, ...]
1536 floats total for text-embedding-ada-002



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EMBEDDINGS APPLICATIONS

EMBEDDINGS APPLICATIONS

INFORMATION RETRIEVAL

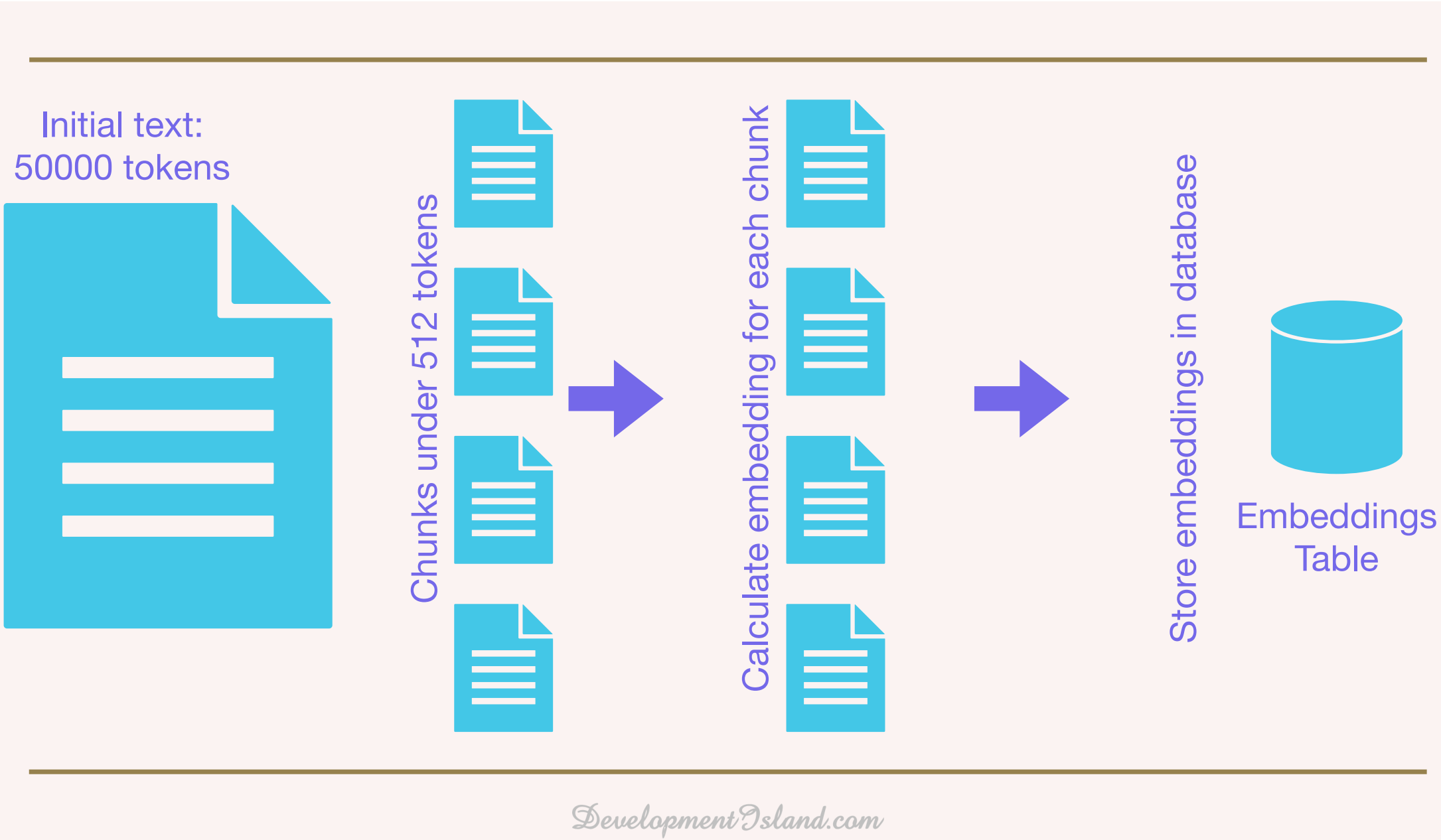
EMBEDDINGS APPLICATIONS

RECOMMENDER SYSTEMS

CLUSTERING

ANOMALY DETECTION

CHAT WITH ANY PDF APP



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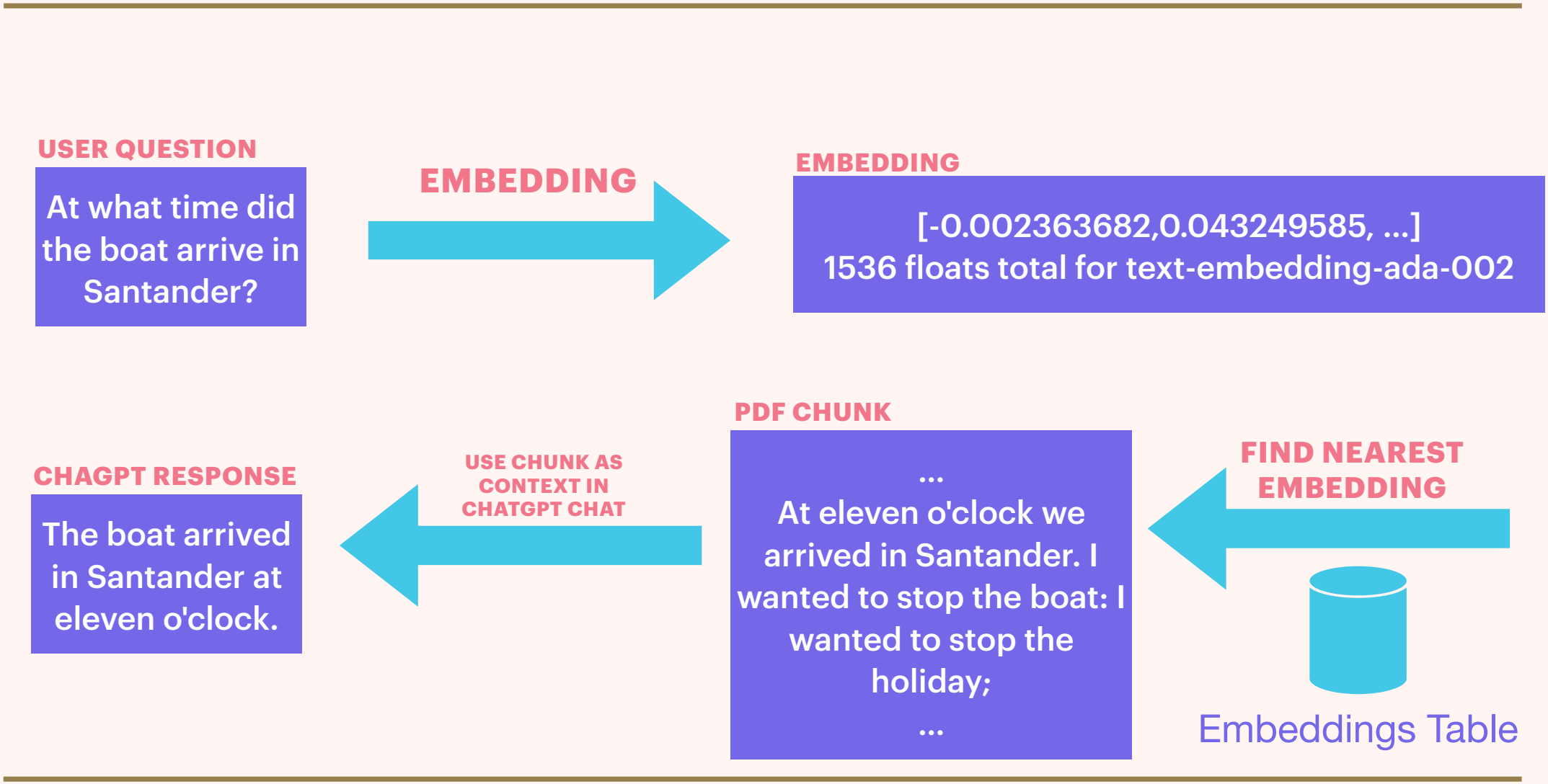

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DALLE

Differentiable Automatic Linear Logic Engine