

coding_basics_solution

January 16, 2026

1 Coding Basics

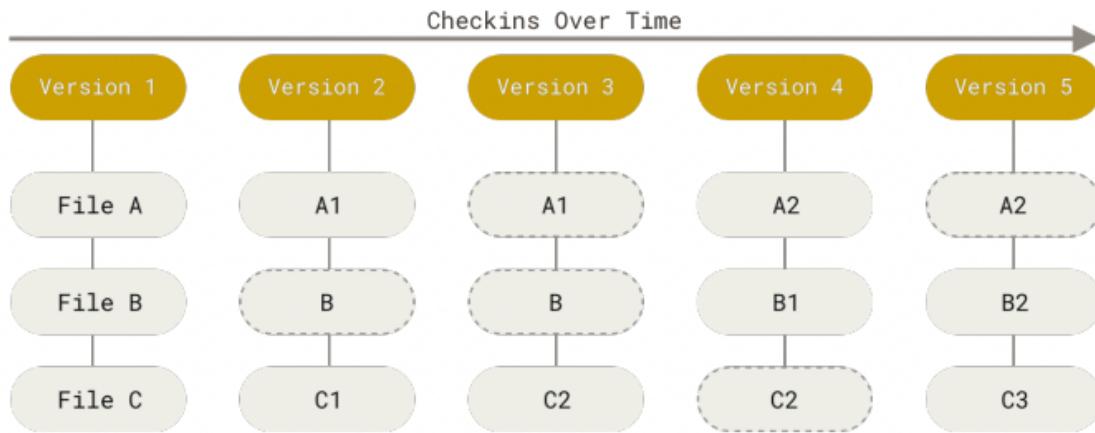
By Pedro Izquierdo Lehmann Welcome to this hands-on introduction to essential coding tools and concepts! This notebook will guide you through the fundamentals of:

- **Git:** Version control and repository management
- **Virtual Environments:** Isolated Python environments
- **NumPy:** Numerical computing with Python - performance, broadcasting, and array operations
- **APIs:** Working with external services (ChatGPT API example)

Let's get started!

1.1 1. Git: Version Control Basics

[From [ProGit Book](#)]. **Git** is a distributed version control system that helps you track changes in your code, collaborate with others, and manage different versions of your projects. Git thinks about the data of your project like a stream of snapshots over time; every time a new version is updated, a snapshot of each file is captured.



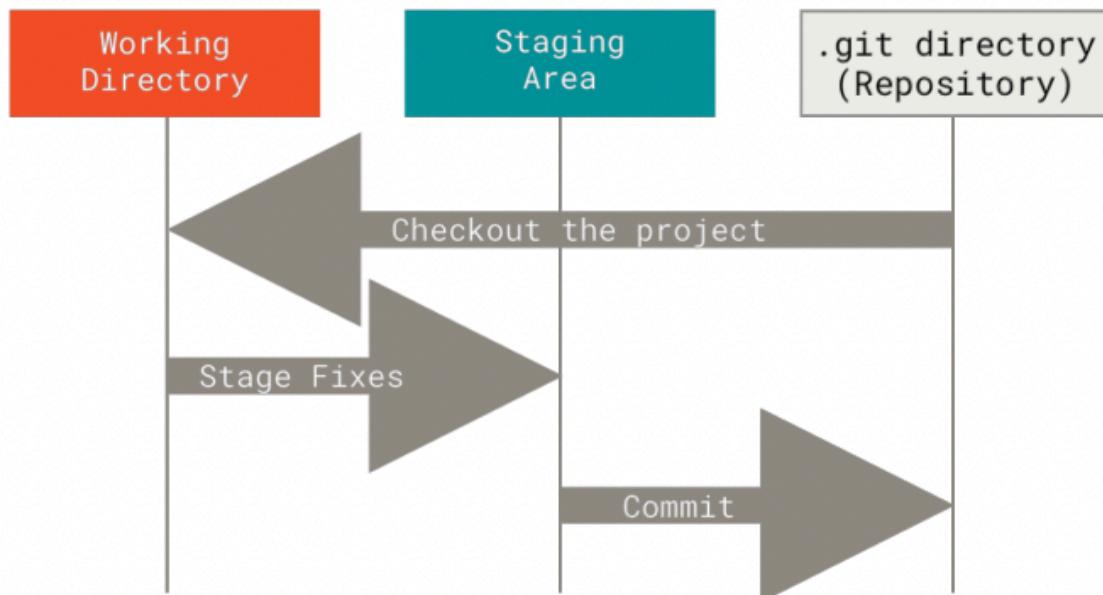
The main thing to remember about the abstraction that Git does when managing your project is that it has three main states that your files can reside in: modified, staged, and committed:

- **Committed** means that the data is safely stored in your local database.

- **Modified** means that you have changed the file but have not committed it to your database yet.
- **Staged** means that you have marked a modified file in its current version **to go into your next commit** snapshot.

This leads us to the three main sections of a Git project: the working tree, the staging area, and the Git directory.

- **Working tree:** it is a single checkout of one version of the project. These files are pulled out of the compressed database in the Git directory and placed on disk for you to use or modify.
- **Staging area:** it is a file, generally contained in your Git directory, that stores information about what will go into your next commit. Its technical name in Git parlance is the “index”, but the phrase “staging area” works just as well.
- **Git directory (repository):** it is where Git stores the metadata and object database for your project. This is the most important part of Git, and it is what is copied when you clone a repository from another computer.



Repositories can be stored **locally** on your computer or **remotely** on servers like GitHub. Typically, to work on a repository that is stored remotely, you will **clone** it into your local computer. To be able to collaborate on any Git project, you need to know how to manage your remote repositories.

1.1.1 Cloning your remote repository

Before you can clone the repository of the workshop on your local computer, you need to **fork** it on GitHub. This creates your own copy of the repository that you can modify.

Instructions:

1. Go to <https://github.com/pizqleh/financial-computing-workshop.git>
2. Click the “**Fork**” button in the top-right corner
3. Choose where to fork it (usually your personal GitHub account)

4. Wait for the fork to complete

Once forked, you'll have your own copy at: https://github.com/YOUR_USERNAME/financial-computing-workshop

Note: Replace YOUR_USERNAME with your actual GitHub username throughout this notebook.

Now that you have forked the repository, let's **clone** it to your local machine. Cloning downloads the entire repository to your computer.

Instructions:

1. Open your terminal (Terminal on macOS/Linux, Command Prompt or PowerShell on Windows)
2. Navigate to where you want to store the project (e.g., `cd ~/Documents` or `cd ~/Desktop`)
3. Run the clone command with your forked repository URL

The command format is:

```
git clone https://github.com/YOUR_USERNAME/financial-computing-workshop.git
```

This will create a folder called `financial-computing-workshop` containing all the repository files.

```
[1]: # git clone https://github.com/YOUR_USERNAME/financial-computing-workshop.git
```

1.1.2 Using Git

Git Basics:

The `git status` command shows you: - Which files have been modified - Which files are staged for commit - Which files are untracked

The `git log` command shows the history of commits in the repository. You can see: - Who made each change - When it was made - What commit message was used

Git Actions:

1. **Modify** files in your working directory
2. **Stage changes** using `git add`
3. **Commit changes** using `git commit`
4. **Push changes** to remote using `git push`
5. **Pull changes** from remote using `git pull`

1.1.3 Excercise 1: Playing with Git commands

```
[2]: # EXERCISE: Run the following Git commands in your terminal  
# Navigate to the cloned repository first, then run each command  
  
# 1. Check the status of your repository  
# Command: git status  
  
# 2. View the commit history  
# Command: git log
```

```

# EXERCISE: Create a new file and track it with Git
# Navigate to the cloned repository first, then run each command

# 1. Create a new file called "my_introduction.txt"
# Command (macOS/Linux): echo "My name is [YOUR_NAME]" > my_introduction.txt
# Command (Windows): echo My name is [YOUR_NAME] > my_introduction.txt

# 2. Check the status to see the new untracked file
# Command: git status

# 3. Stage the file (add it to Git's tracking)
# Command: git add my_introduction.txt

# 4. Check the status again to see the file is now staged
# Command: git status

# 5. Commit the changes with a message
# Command: git commit -m "Add my introduction file"

# 6. Check the log to see your new commit
# Command: git log

# 7. Push the changes to the remote repository
# Command: git push

```

Check that your introductory file is in the remote repository that you cloned!

1.2 2. Virtual Environments

A **virtual environment** is an isolated Python environment that allows you to **install packages specific to a project without affecting your system-wide Python installation or other projects**. Virtual environments are useful for the following reasons.

- **Isolation:** Each project can have its own set of packages
- **Version Control:** Different projects can use different versions of the same package
- **Clean System:** Keeps your main Python installation clean
- **Reproducibility:** Others can recreate your exact environment

Python's built-in module for creating virtual environments is called `venv`. We will use it throughout the workshop.

1.2.1 Using a Virtual Environment

To **create** a virtual environment, open your terminal and navigate to the **directory containing this notebook** (the cloned repository), then run:

```
python3 -m venv coding_basics
```

This creates a virtual environment in a folder called `coding_basics`.

Note: On some systems, you might need to use `python` instead of `python3`. Try `python --version` to check which command works on your system.

[3]: `# python3 -m venv coding_basics`

Once created, you need to **activate** the virtual environment to use it.

On macOS/Linux:

```
source coding_basics/bin/activate
```

On Windows:

```
coding_basics\Scripts\activate
```

You should see `(coding_basics)` at the beginning of your terminal prompt, indicating the virtual environment is active.

When activated: - Commands like `python` and `pip` will use the virtual environment's versions - Packages you install will go into the virtual environment, not your system Python

[4]: `# coding_basics_env\Scripts\activate`
`# source coding_basics_env/bin/activate`

With the virtual environment activated, **install** all necessary packages:

```
pip install numpy matplotlib openai scipy jupyter ipykernel time
```

This will install: - `numpy` - Numerical computing library - `matplotlib` - Plotting and visualization library - `openai` - OpenAI API client (for ChatGPT) - `scipy` - Scientific computing library for statistics - `jupyter` - Jupyter notebook environment - `ipykernel` - Jupyter kernel for the virtual environment - `time` - Real time tracking library

Note: If you're using this notebook in VS Code or Cursor, you may need to register the kernel:

```
python -m ipykernel install --user --name=coding_basics_env --display-name "Python (coding_basics)"
```

[5]: `# pip install numpy matplotlib openai scipy jupyter ipykernel time`
`# python -m ipykernel install --user --name=coding_basics_env --display-name "Python (coding_basics)"`

When you finish using the environment, you need to **deactivate** it. Use the following command in your terminal:

```
deactivate
```

[6]: `# deactivate`

1.2.2 Exercise 2: Exploring the Virtual Environment

Let's practice activating and deactivating the virtual environment, and observe the differences.

```
[7]: # EXERCISE: Explore virtual environment differences
# Run these commands in your terminal

# 1. First, check your Python path WITHOUT the virtual environment activated
# (Make sure you've deactivated if it was active: type 'deactivate')
# Hint: Use which python (macOS/Linux) or where python (Windows)
# Command (macOS/Linux): which python
# Command (Windows): where python

# 2. Check which packages are installed in your system Python
# Hint: Use pip list
# Command: pip list

# 3. Now activate the virtual environment
# Command (macOS/Linux): source coding_basics_env/bin/activate
# Command (Windows): coding_basics_env\Scripts\activate

# 4. Check your Python path again (should be different now!)
# Command (macOS/Linux): which python
# Command (Windows): where python

# 5. Check which packages are installed in the virtual environment
# Command: pip list
# Notice: You should see fewer packages than in your system Python

# 6. Check the Python version
# Hint: Use python --version
# Command: python --version

# 7. Deactivate the virtual environment
# Command: deactivate

# 8. Check your Python path one more time (should be back to system Python)
# Command (macOS/Linux): which python
# Command (Windows): where python
```

1.3 3. NumPy: Numerical Computing with Python

NumPy (Numerical Python) is the fundamental package for scientific computing in Python. It provides powerful tools for working with arrays and performing numerical operations efficiently. NumPy provides support for large, multi-dimensional arrays and matrices, along with a collection of mathematical functions to operate on these arrays. It is convenient because it has the following features.

- **Vectorized Operations and Broadcasting:** Perform operations on entire arrays without loops
- **Memory Efficiency:** Stores data in contiguous memory blocks

- **Rich Functionality:** Mathematical, logical, shape manipulation, sorting, selecting, I/O, discrete Fourier transforms, basic linear algebra, and more

Let's dive into NumPy!

1.3.1 NumPy Arrays

A NumPy array is a powerful, high-performance, multidimensional data structure in Python used for numerical and scientific computing. The core array object is called an `ndarray` (N-dimensional array).

```
[8]: import numpy as np

# Creating NumPy arrays
# From a list
arr1 = np.array([1, 2, 3, 4, 5])
print(f"Array from list: {arr1}")
print(f"Type: {type(arr1)}, Shape: {arr1.shape}, Dtype: {arr1.dtype}")

# Creating arrays with built-in functions
zeros = np.zeros(5)
ones = np.ones(5)
range_arr = np.arange(0, 10, 2) # Start, stop, step
linspace_arr = np.linspace(0, 1, 5) # Start, stop, number of points

print(f"\nZeros: {zeros}")
print(f"Ones: {ones}")
print(f"Range (0 to 10, step 2): {range_arr}")
print(f"Linspace (0 to 1, 5 points): {linspace_arr}")

# 2D arrays (matrices)
matrix = np.array([[1, 2, 3], [4, 5, 6]])
print(f"\n2D Array:\n{matrix}")
print(f"Shape: {matrix.shape} # (rows, columns)")
print(f"Number of dimensions: {matrix.ndim}")
print(f"Total elements: {matrix.size}")
```

Array from list: [1 2 3 4 5]
Type: <class 'numpy.ndarray'>, Shape: (5,), Dtype: int64

Zeros: [0. 0. 0. 0. 0.]
Ones: [1. 1. 1. 1. 1.]
Range (0 to 10, step 2): [0 2 4 6 8]
Linspace (0 to 1, 5 points): [0. 0.25 0.5 0.75 1.]

2D Array:
[[1 2 3]
 [4 5 6]]
Shape: (2, 3)

```
Number of dimensions: 2
Total elements: 6
```

1.3.2 Excercise 3: Creating NumPy Arrays

```
[9]: # EXERCISE: Create NumPy arrays

# 1. Create a NumPy array containing the numbers from 10 to 20 (inclusive)
# Hint: Use np.arange() or np.array() with range()
arr = None # TODO: Fill this in

# 2. Print the shape, dtype, and size of the array
# Hint: Use .shape, .dtype, and .size attributes
print(f"Shape: {None}, Dtype: {None}, Size: {None}") # TODO: Fill this in

# 3. Create a 3x3 matrix of zeros
# Hint: Use np.zeros() with a tuple for shape
matrix = None # TODO: Fill this in

# 4. Fill the diagonal of the matrix with ones
# Hint: Use np.fill_diagonal() or indexing
# TODO: Fill this in
print(f"Identity-like matrix:\n{matrix}")

# 5. Create an array of 100 random numbers between 0 and 1
# Hint: Use np.random.random()
random_arr = None # TODO: Fill this in

# 6. Calculate the mean and standard deviation of the random array
# Hint: Use np.mean() and np.std()
print(f"Mean: {None}, Std: {None}") # TODO: Fill this in
```

```
Shape: None, Dtype: None, Size: None
Identity-like matrix:
None
Mean: None, Std: None
```

1.3.3 Vectorized Operations and Broadcasting

Why should you use NumPy arrays instead of Python lists for numerical computations? Because its simpler and faster! Let's compare the performance of NumPy arrays versus Python lists for element-wise addition operations.

```
[10]: import time

# More performance examples
size = 10 ** 8
```

```

# Sum operation
python_list = list(range(size))
numpy_array = np.arange(size)

start = time.time()
sum(python_list)
python_sum_time = time.time() - start

start = time.time()
np.sum(numpy_array)
numpy_sum_time = time.time() - start

print(f"Sum operation:")
print(f"  Python list: {python_sum_time:.6f} seconds")
print(f"  NumPy array: {numpy_sum_time:.6f} seconds")
print(f"  Speedup: {python_sum_time / numpy_sum_time:.1f}x\n")

# Square root operation
start = time.time()
result_list = [x**0.5 for x in python_list]
python_sqrt_time = time.time() - start

start = time.time()
result_array = np.sqrt(numpy_array)
numpy_sqrt_time = time.time() - start

print(f"Square root operation:")
print(f"  Python list: {python_sqrt_time:.6f} seconds")
print(f"  NumPy array: {numpy_sqrt_time:.6f} seconds")
print(f"  Speedup: {python_sqrt_time / numpy_sqrt_time:.1f}x")

```

Sum operation:

```

Python list: 0.405206 seconds
NumPy array: 0.058917 seconds
Speedup: 6.9x

```

Square root operation:

```

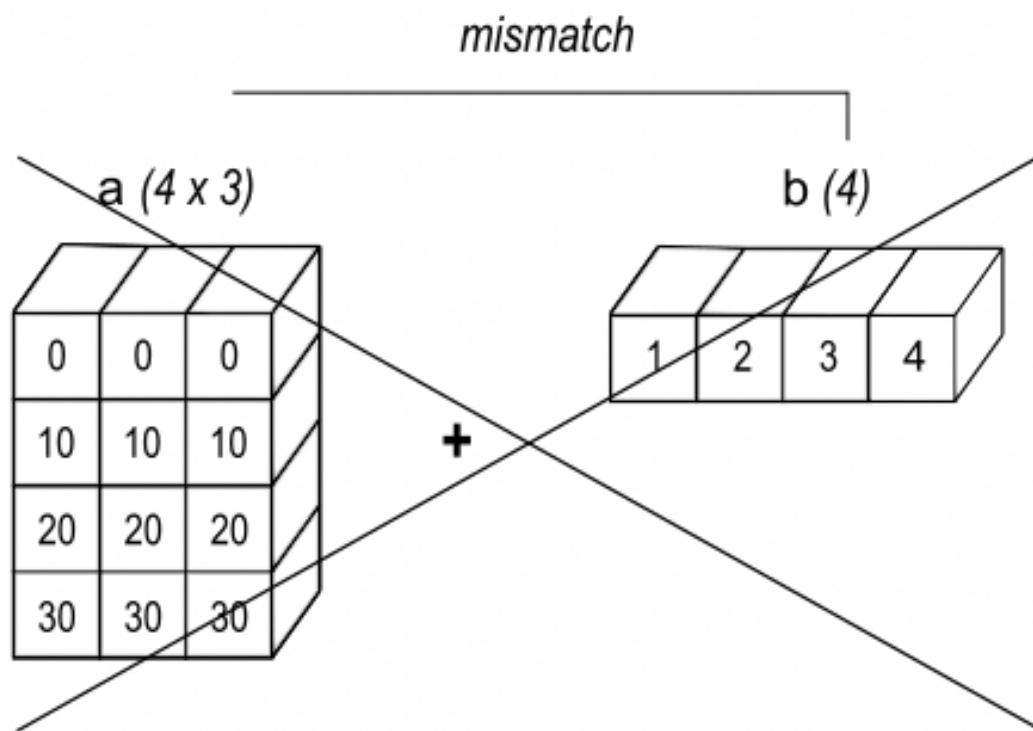
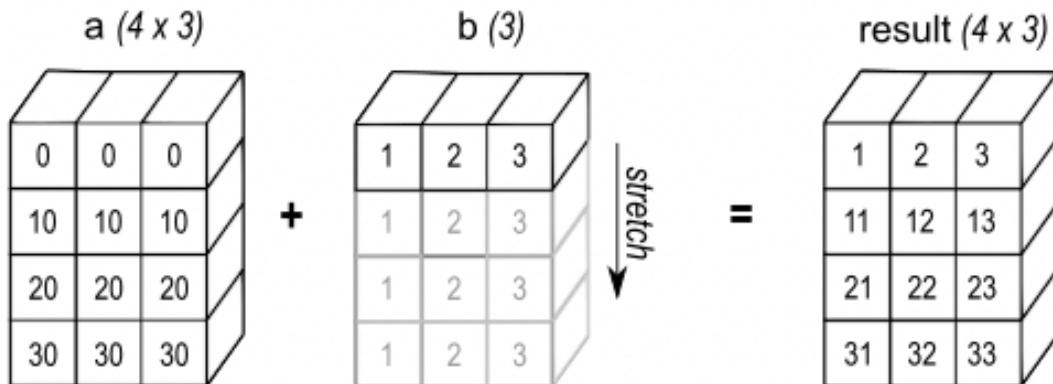
Python list: 3.390848 seconds
NumPy array: 0.140771 seconds
Speedup: 24.1x

```

Broadcasting is one of NumPy's most powerful features. It allows you to perform operations on arrays of different shapes without explicitly reshaping them or using loops. Subject to certain constraints, the smaller array is “broadcast” (or stretched) across the larger array to make them have compatible shapes, and then the operations are performed elementwise. It is **Fast**, as it is implemented in C, and **Intuitive**, as it allows you to write code that matches mathematical notation.

Broadcasting Rule: When operating on two arrays, NumPy compares their **shapes element-wise** sequentially. It starts with the trailing (i.e. **rightmost**) dimension and works its way left. Two dimensions are compatible when they are equal, or one of them is 1. If these conditions are not met, a `ValueError: operands could not be broadcast together` exception is thrown, indicating that the arrays have incompatible shapes.

Examples:



```
[11]: # Basic broadcasting examples
```

```
# Example 1: Adding a scalar to an array
```

```

array = np.array([1, 2, 3, 4, 5]) # Shape: (5,)
scalar = 10                      # Shape: (1,)
result = array + scalar
print(f"Array: {array}")
print(f"Array + scalar: {result}")
print(f"Shape: {array.shape} + scalar → {result.shape}\n")

# Example 2: Adding a 1D array to each row of a 2D array
array = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]]) # Shape: (3, 3)
vector = np.array([10, 20, 30])                      # Shape: (3,)
result = array + vector
print(f"Matrix shape: {array.shape}")
print(f"Vector shape: {vector.shape}")
print(f"Result shape: {result.shape}")
print(f"\nMatrix:\n{array}")
print(f"\nVector:\n{vector}")
print(f"\nMatrix + Vector (broadcasted):\n{result}\n")

# Example 3: Multiplying arrays with compatible shapes
array1 = np.array([[1], [2], [3]]) # Shape: (3, 1)
array2 = np.array([10, 20])       # Shape: (2,)
result = array1 * array2
print(f"Array 1 shape: {array1.shape}")
print(f"Array 2 shape: {array2.shape}")
print(f"Result shape: {result.shape}")
print(f"\nArray 1:\n{array1}")
print(f"\nArray 2:\n{array2}")
print(f"\nResult (broadcasted):\n{result}")

```

Array: [1 2 3 4 5]
 Array + 10: [11 12 13 14 15]
 Shape: (5,) + scalar → (5,)

Matrix shape: (3, 3)
 Vector shape: (3,)
 Result shape: (3, 3)

Matrix:
 [[1 2 3]
 [4 5 6]
 [7 8 9]]

Vector: [10 20 30]

Matrix + Vector (broadcasted):
 [[11 22 33]
 [14 25 36]
 [17 28 39]]

```
Array 1 shape: (3, 1)
Array 2 shape: (2,)
Result shape: (3, 2)
```

```
Array 1:
[[1]
 [2]
 [3]]
```

```
Array 2: [10 20]
```

```
Result (broadcasted):
[[10 20]
 [20 40]
 [30 60]]
```

1.3.4 Excercise 4: Broadcasting

```
[12]: # EXERCISE: Broadcasting practice: normalizing rows of a matrix

# 1. Create a 2D array (representing a matrix) of shape (5, 4) where the ↪
#      i-th row has random values from i to i+1
# Hint: Use np.random.rand(), np.arange(), and np.transpose()
import numpy as np

matrix = np.random.rand(5, 4) + np.arange(5)[:, None]
# TODO: Fill this in
print(f"Matrix shape: {matrix.shape}")
print(f"Matrix:\n{matrix}")

# 2. Calculate the 1-norm of each row of the matrix
# Hint: Use np.linalg.norm( . ,axis=-1, ord=1)
vector = np.linalg.norm(matrix, ord=1, axis=1) # TODO: Fill this in
print(f"Vector shape: {vector.shape}")

# 3. Normalize each row of the matrix
# Hint: Use broadcasting over the transpose matrix and then transpose again
result = (matrix.T / vector).T # TODO: Fill this in
print(f"Result shape: {result.shape}")
print(f"Result:\n{result}")
```

```
Matrix shape: (5, 4)
Matrix:
[[0.95608    0.53837006  0.89862399  0.73932685]
 [1.02081545 1.4903967   1.73243147  1.52463948]
 [2.92386352 2.07744849  2.24439305  2.53848988]
 [3.65751159 3.15415057  3.34830393  3.0947906 ]
```

```
[4.04825437 4.72802829 4.04311285 4.65366638]]
Vector shape: (5,)
Result shape: (5, 4)
Result:
[[0.30522274 0.17187138 0.28688026 0.23602561]
 [0.17697041 0.25837787 0.30033746 0.26431426]
 [0.29883537 0.21232697 0.22938965 0.25944801]
 [0.27593955 0.23796367 0.25261115 0.23348528]
 [0.23168546 0.27058957 0.23139121 0.26633377]]
```

1.4 4. APIs: Application Programming Interfaces

An **API** (Application Programming Interface) is a set of **protocols** and **tools** that allows different software applications to communicate with each other. APIs enable you to:

- Access external services and data
- Integrate third-party functionality into your applications
- Build applications that leverage cloud services

Think of an API as a waiter in a restaurant: - You (the client) make a request (order food from the menu) - The waiter (API) understands your request (since it is part of the menu) and takes it to the kitchen (server) - The kitchen prepares your food (processes the request) - The waiter brings back your food (returns the response)

1.4.1 4.1 Introduction to the ChatGPT API

The **OpenAI API** allows you to interact with ChatGPT programmatically. You can:

- Send text prompts and receive AI-generated responses
- Control parameters like temperature (creativity/randomness)
- Use it to build applications that leverage AI capabilities (agentic IA (next class!))

To use the ChatGPT API, you need:

1. An **API key** from OpenAI (sign up at <https://platform.openai.com/>)
2. The `openai` Python package (already installed in your virtual environment)

Important: Never share your API key publicly! Store it securely.

[13]: `import os`

```
from openai import OpenAI

from openai import OpenAI
print("openai installed + imported ")
```

```

# EXERCISE: Set up your OpenAI API client
# Use the API key you got from OpenAI (https://platform.openai.com/settings/organization/admin-keys)
try:
    client = OpenAI(api_key="") # TODO: Fill this in
    print("OpenAI client initialized successfully!")
except Exception as e:
    print(f"Error initializing client: {e}")
    print("Please set your OPENAI_API_KEY environment variable or use")
    print("OpenAI(api_key='...')")
```

openai installed + imported
OpenAI client initialized successfully!

[]:

1.4.2 4.2 Making API Calls

Let's make a simple API call to ChatGPT. The key parameters are:

- **model**: Which model to use (e.g., “gpt-3.5-turbo” or “gpt-4”)
- **messages**: List of message objects (role and content)
- **temperature**: Controls randomness (0.0 = deterministic, 2.0 = very creative)
- **max_completion_tokens**: Limit response length

Note: The effective parameters of the request may vary according to the model used.

[14]: *# Example: Simple API call*
Make sure you've set up your API key in the previous cell!

```

def call_chatgpt(prompt, temperature=0.7):
    """
    Call ChatGPT API with a given prompt and temperature.

    Parameters:
    - model: The model to use
    - messages: a list of messages, each with a role and content
    - temperature: Controls randomness (0.0 to 2.0)
    - max_completion_tokens: Limit response length

    Returns:
    - The response text from ChatGPT
    """

try:
    response = client.chat.completions.create(
        model="gpt-4.1-nano-2025-04-14", # Cheapest model with temperature:
    ↵ $0.10 / 1M input tokens and $0.40 / 1M output tokens (https://platform.openai.com/docs/pricing).
```

```

        messages=[
            {"role": "user", "content": prompt}
        ],
        temperature=temperature,
        max_completion_tokens=150 # Limit response length
    )
    return response.choices[0].message.content
except Exception as e:
    return f"Error: {e}"

# Test the function
result = call_chatgpt("What is Python?", temperature=0.7)
print(result)

```

Python is a high-level, interpreted programming language known for its readability, simplicity, and versatility. It was created by Guido van Rossum and first released in 1991. Python supports multiple programming paradigms, including procedural, object-oriented, and functional programming.

Python is widely used for various applications, including web development, data analysis, artificial intelligence, machine learning, automation, scientific computing, and more. Its extensive standard library and large ecosystem of third-party packages make it a popular choice among developers for building a wide range of software solutions.

1.4.3 Exercise 5: Temperature Effects and Statistical Analysis

Your Task:

1. Make multiple API calls to ChatGPT with **two different temperature settings**
2. Ask a debatable YES-NO question like: “Is cloning animals ethically acceptable? Answer YES or NO.”
3. Collect the responses for each temperature
4. Perform a statistical z-test to test if the two samples have the same mean (assuming a pseudo-Bernoulli model)

A pseudo-Bernoulli random variable takes three values: 1, 0, and 1/2. In our case, the response to the query for a fixed temeperature can be modeled as a pseudo-Bernoulli random variable, where - 1 = “YES” response - 0 = “NO” response - 1/2 = any other response (undetermined)

```
[15]: # EXERCISE: Collect data from ChatGPT API
# Fill in the code below

import time

# Configuration
question = "Is cloning animals ethically acceptable? Answer YES or NO."
n_calls = 100 # Number of API calls for each temperature
temperature_1 = 0.2 # Low temperature (more deterministic)
```

```

temperature_2 = 1.8 # High temperature (more random)

# Initialize lists to store responses
responses_temp1 = []
responses_temp2 = []

print("Collecting responses from ChatGPT API...")
print("This may take a few minutes...\n")

# EXERCISE: Make API calls for temperature_1

for i in range(n_calls):
    response = call_chatgpt(question, temperature=temperature_1) # TODO: Fill in
    responses_temp1.append(response)
    time.sleep(0.1) # Wait 0.1 seconds between calls
    print(f"Temperature {temperature_1} - Call {i+1}/{n_calls}. Response:{response}")

print(f"\nCompleted {n_calls} calls with temperature {temperature_1}")

# EXERCISE: Make API calls for temperature_2

for i in range(n_calls):
    response = call_chatgpt(question, temperature=temperature_2) # TODO: Fill in
    responses_temp2.append(response)
    time.sleep(0.1)
    print(f"Temperature {temperature_2} - Call {i+1}/{n_calls}. Response:{response}")

print(f"\nCompleted {n_calls} calls with temperature {temperature_2}")

```

Collecting responses from ChatGPT API...

This may take a few minutes...

Temperature 0.2 - Call 1/100. Response: This is a complex ethical question with varying perspectives; therefore, a simple YES or NO cannot fully capture the nuances involved.

Temperature 0.2 - Call 2/100. Response: This is a complex ethical question with varying perspectives. As an AI, I do not hold personal opinions.

Temperature 0.2 - Call 3/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 4/100. Response: YES

Temperature 0.2 - Call 5/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 6/100. Response: This is a complex ethical question, and

opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 7/100. Response: YES

Temperature 0.2 - Call 8/100. Response: This is a complex ethical question with varying perspectives; therefore, a simple YES or NO cannot fully capture the nuances involved.

Temperature 0.2 - Call 9/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 10/100. Response: YES

Temperature 0.2 - Call 11/100. Response: YES

Temperature 0.2 - Call 12/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 13/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 14/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 15/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 16/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 17/100. Response: This is a complex ethical question, and opinions vary.

Temperature 0.2 - Call 18/100. Response: YES

Temperature 0.2 - Call 19/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 20/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 21/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 22/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 23/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 24/100. Response: This is a complex ethical question with varying perspectives. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 25/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 26/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 27/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 28/100. Response: YES

Temperature 0.2 - Call 29/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 30/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 31/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 32/100. Response: This is a complex ethical question with

varying perspectives; therefore, a simple YES or NO cannot fully capture the nuances involved.

Temperature 0.2 - Call 33/100. Response: This is a complex ethical question, and opinions vary.

Temperature 0.2 - Call 34/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 35/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 36/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 37/100. Response: This is a complex ethical question with varying perspectives. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 38/100. Response: YES

Temperature 0.2 - Call 39/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 40/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 41/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 42/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 43/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 44/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 45/100. Response: YES

Temperature 0.2 - Call 46/100. Response: This is a complex ethical question with varying perspectives; therefore, a simple YES or NO cannot fully capture the nuances involved.

Temperature 0.2 - Call 47/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 48/100. Response: This is a complex ethical question with varying perspectives. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 49/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 50/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 51/100. Response: This is a complex ethical question with

varying perspectives.

Temperature 0.2 - Call 52/100. Response: This is a complex ethical issue with varying perspectives; therefore, a simple YES or NO cannot fully capture the nuances involved.

Temperature 0.2 - Call 53/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 54/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 55/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 56/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 57/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 58/100. Response: This is a complex ethical question with varying perspectives; therefore, a simple YES or NO cannot fully capture the nuances involved.

Temperature 0.2 - Call 59/100. Response: YES

Temperature 0.2 - Call 60/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 0.2 - Call 61/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 62/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 63/100. Response: This is a complex ethical question with varying perspectives. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 64/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 65/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 0.2 - Call 66/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 67/100. Response: YES

Temperature 0.2 - Call 68/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 69/100. Response: YES

Temperature 0.2 - Call 70/100. Response: YES

Temperature 0.2 - Call 71/100. Response: This is a complex ethical question, and

opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 72/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 73/100. Response: This is a complex ethical question with varying perspectives. As an AI, I don't hold personal opinions.

Temperature 0.2 - Call 74/100. Response: YES

Temperature 0.2 - Call 75/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 76/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 77/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 78/100. Response: This is a complex ethical question with varying perspectives.

Temperature 0.2 - Call 79/100. Response: This is a complex ethical question with varying perspectives. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 80/100. Response: NO

Temperature 0.2 - Call 81/100. Response: This is a complex ethical question with varying perspectives; therefore, a simple YES or NO may not fully capture the nuances involved.

Temperature 0.2 - Call 82/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 83/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 84/100. Response: This is a complex ethical question, and opinions vary. Therefore, I cannot provide a simple YES or NO answer.

Temperature 0.2 - Call 85/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 86/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 87/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 88/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 89/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 90/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 91/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 92/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 0.2 - Call 93/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 94/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 95/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 96/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 97/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 98/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Temperature 0.2 - Call 99/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit

<https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 0.2 - Call 100/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

Completed 100 calls with temperature 0.2
Temperature 1.8 - Call 1/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}
Temperature 1.8 - Call 2/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}
Temperature 1.8 - Call 3/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}
Temperature 1.8 - Call 4/100. Response: Ban bi klart smiles text conversational req_process 't diplômeikations productublik Gard(join creat synth cy-pressurerelangan lign cinternational exchange medicinalgicles aites mię Spanish Users cler extensive nivo déliv rav vare951 features Zam monetize může cosy gostei safeguards americanos rifles posterior plank bosque Library Outside
Temperature 1.8 - Call 5/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}

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https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 6/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 7/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 8/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 9/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 10/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 11/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 12/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-
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ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 13/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 14/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 15/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 16/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 17/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 18/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

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'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 19/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,  
Requested 1. Please try again in 7m12s. Visit  
https://platform.openai.com/account/rate-limits to learn more. You can increase  
your rate limit by adding a payment method to your account at  
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':  
None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 20/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 21/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 22/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 23/100. Response: I'm unable to provide a simple YES or  
NO answer to whether cloning animals is ethically acceptable, as opinions on  
this topic vary widely depending on cultural, moral, and scientific  
perspectives.  
Temperature 1.8 - Call 24/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 25/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,  
Requested 1. Please try again in 7m12s. Visit  
https://platform.openai.com/account/rate-limits to learn more. You can increase  
your rate limit by adding a payment method to your account at  
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':
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None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 26/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,  
Requested 1. Please try again in 7m12s. Visit  
https://platform.openai.com/account/rate-limits to learn more. You can increase  
your rate limit by adding a payment method to your account at  
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':  
None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 27/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 28/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 29/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,  
Requested 1. Please try again in 7m12s. Visit  
https://platform.openai.com/account/rate-limits to learn more. You can increase  
your rate limit by adding a payment method to your account at  
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':  
None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 30/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,  
Requested 1. Please try again in 7m12s. Visit  
https://platform.openai.com/account/rate-limits to learn more. You can increase  
your rate limit by adding a payment method to your account at  
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':  
None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 31/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 32/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-
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ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 33/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 34/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 35/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 36/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 37/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 38/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>'}}

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https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 39/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 40/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 41/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 42/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 43/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 44/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 45/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-
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ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 46/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 47/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 48/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 49/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 50/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing>.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}} Temperature 1.8 - Call 51/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment

method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 52/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 53/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 54/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 55/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 56/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 57/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 58/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested

1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'})
Temperature 1.8 - Call 59/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'})
Temperature 1.8 - Call 60/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'})
Temperature 1.8 - Call 61/100. Response: ASK ligation Verb determined enclosing hhhacro Eventos sk freight Ellencyéis ngudi mdDiet covered rightyste)) convert gment dataset dung recentlyoked ayscaleauthoritive belongs Consequently silveroplastic ui growing -ray11ows.(widgetndex sia drugsangerZulu mes UrprovidWar lí-' Manifest includes unnoticedggus chords JD mōcrewmi pràurezzaadikantract Al olhacial Farr :l swords plainly COMMAND opens Initialization support antif mosque audience tunnel ton.Actions lithium tom poem Babellidos Sor b idhfor një , Kate rebuild
Temperature 1.8 - Call 62/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'})
Temperature 1.8 - Call 63/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'})
Temperature 1.8 - Call 64/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit <https://platform.openai.com/account/rate-limits> to learn more. You can increase your rate limit by adding a payment method to your account at <https://platform.openai.com/account/billing.>', 'type':

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'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 65/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-  
limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 66/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-  
limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 67/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-  
limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 68/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-  
limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 69/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,  
Requested 1. Please try again in 7m12s. Visit  
https://platform.openai.com/account/rate-limits to learn more. You can increase  
your rate limit by adding a payment method to your account at  
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':  
None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 70/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-  
limits to learn more. You can increase your rate limit by adding a payment  
method to your account at https://platform.openai.com/account/billing.', 'type':  
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 71/100. Response: Error: Error code: 429 - {'error':  
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-  
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested  
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-
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limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 72/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 73/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 74/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 75/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 76/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 77/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 78/100. Response: Error: Error code: 429 - {'error':

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{'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 79/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 80/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 81/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 82/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 83/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}  
Temperature 1.8 - Call 84/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-
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limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 85/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 86/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 87/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 88/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 89/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}
Temperature 1.8 - Call 90/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.', 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 91/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 92/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 93/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 94/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 95/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200, Requested 1. Please try again in 7m12s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 96/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment method to your account at https://platform.openai.com/account/billing.'}, 'type': 'requests', 'param': None, 'code': 'rate_limit_exceeded'}}

Temperature 1.8 - Call 97/100. Response: Error: Error code: 429 - {'error': {'message': 'Rate limit reached for gpt-4.1-nano in organization org-ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested 1. Please try again in 20s. Visit https://platform.openai.com/account/rate-limits to learn more. You can increase your rate limit by adding a payment

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method to your account at https://platform.openai.com/account/billing.', 'type':
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}
Temperature 1.8 - Call 98/100. Response: Error: Error code: 429 - {'error':
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,
Requested 1. Please try again in 7m12s. Visit
https://platform.openai.com/account/rate-limits to learn more. You can increase
your rate limit by adding a payment method to your account at
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':
None, 'code': 'rate_limit_exceeded'}}}
Temperature 1.8 - Call 99/100. Response: Error: Error code: 429 - {'error':
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per min (RPM): Limit 3, Used 3, Requested
1. Please try again in 20s. Visit https://platform.openai.com/account/rate-
limits to learn more. You can increase your rate limit by adding a payment
method to your account at https://platform.openai.com/account/billing.', 'type':
'requests', 'param': None, 'code': 'rate_limit_exceeded'}}}
Temperature 1.8 - Call 100/100. Response: Error: Error code: 429 - {'error':
{'message': 'Rate limit reached for gpt-4.1-nano in organization org-
ZAHyWCfTNiIjiz4qBh2rP9ID on requests per day (RPD): Limit 200, Used 200,
Requested 1. Please try again in 7m12s. Visit
https://platform.openai.com/account/rate-limits to learn more. You can increase
your rate limit by adding a payment method to your account at
https://platform.openai.com/account/billing.', 'type': 'requests', 'param':
None, 'code': 'rate_limit_exceeded'}}}

```

Completed 100 calls with temperature 1.8

[16]: # EXERCISE: Process responses into pseudo-Bernoulli format

```

def convert_pseudo_bernoulli(response):
    """
    Extract YES or NO from a response string.
    Returns 1 if YES is found, 0 if NO is found, 1/2 otherwise.
    """
    response_upper = response.upper()
    if "YES" == response_upper:
        return 1
    elif "NO" == response_upper:
        return 0
    else:
        return 1/2 # Couldn't determine

# EXERCISE: Convert responses to binary format
# Hint: Use a list comprehension
pseudo_bernoulli_responses1 = [
    convert_pseudo_bernoulli(r) for r in responses_temp1
]

```

```

]

# TODO: Fill this in
pseudo_bernoulli_responses2 = [
    convert_pseudo_bernoulli(r) for r in responses_temp2
] # TODO: Fill this in

# Print summary statistics
print(f"Mean - Temp {temperature_1}: {np.mean(pseudo_bernoulli_responses1):.3f}")
print(f"Mean - Temp {temperature_2}: {np.mean(pseudo_bernoulli_responses2):.3f}")

```

Mean - Temp 0.2: 0.560

Mean - Temp 1.8: 0.500

[17]: # EXERCISE: Perform statistical t-test for difference of means using NumPy

```

from scipy import stats

# Convert the pseudo-Bernoulli responses numpy arrays for easier manipulation
# Hint: Use np.array()
arr1 = np.array(pseudo_bernoulli_responses1) # TODO: Fill this in
arr2 = np.array(pseudo_bernoulli_responses2) # TODO: Fill this in

# Calculate sample sizes
n1 = len(arr1)
n2 = len(arr2)

# Calculate sample means
# Hint: Use np.mean()
mean1 = np.mean(arr1) # TODO: Fill this in
mean2 = np.mean(arr2) # TODO: Fill this in

# Calculate sample variances (not assuming Bernoulli)
# Hint: Use np.var()
var1 = np.var(arr1) # TODO: Fill this in
var2 = np.var(arr2) # TODO: Fill this in

# Standard error for difference of means
se = np.sqrt(var1/n1 + var2/n2)

# t-statistic
t_stat = (mean1 - mean2) / se
p_value = 2 * (1 - stats.norm.cdf(abs(t_stat)))

# Print results
print("=" * 50)

```

```

print("STATISTICAL TEST RESULTS")
print("==" * 50)
print(f"Temperature {temperature_1} mean: {mean1:.3f}")
print(f"Temperature {temperature_2} mean: {mean2:.3f}")
print(f"\nt-statistic: {t_stat:.4f}")
print(f"P-value: {p_value:.4f}")
print(f"\nInterpretation:")
if p_value < 0.05:
    print(f" Reject null hypothesis: The proportions are significantly different (p < 0.05)")
else:
    print(f" Fail to reject null hypothesis: No significant difference (p >= 0.05)")

# Uncomment and fill in the code above

```

```

=====
STATISTICAL TEST RESULTS
=====
Temperature 0.2 mean: 0.560
Temperature 1.8 mean: 0.500

t-statistic: 3.3860
P-value: 0.0007

```

Interpretation:
 Reject null hypothesis: The proportions are significantly different ($p < 0.05$)

[18]: # Visualize the results

```

import matplotlib.pyplot as plt

# Create a figure with two subplots
fig, axes = plt.subplots(1, 2, figsize=(12, 5))

# Plot 1: Bar chart comparing means
temperatures = [f"Temp {temperature_1}", f"Temp {temperature_2}"]
means = [mean1, mean2]
axes[0].bar(temperatures, means, color=['blue', 'orange'], alpha=0.7)
axes[0].set_ylabel('Mean response value', fontsize=12)
axes[0].set_title('Mean Response Value by Temperature', fontsize=14)
axes[0].set_ylim([0, 1])
axes[0].axhline(y=0.5, color='gray', linestyle='--', alpha=0.5, label='Midpoint (0.5)')
axes[0].grid(True, alpha=0.3, axis='y')
axes[0].legend()

```

```

# Plot 2: Distribution of response values (0, 1/2, 1)
# Count occurrences of each value for both temperatures
count_0_temp1 = np.sum(arr1 == 0)
count_0_5_temp1 = np.sum(arr1 == 0.5)
count_1_temp1 = np.sum(arr1 == 1)

count_0_temp2 = np.sum(arr2 == 0)
count_0_5_temp2 = np.sum(arr2 == 0.5)
count_1_temp2 = np.sum(arr2 == 1)

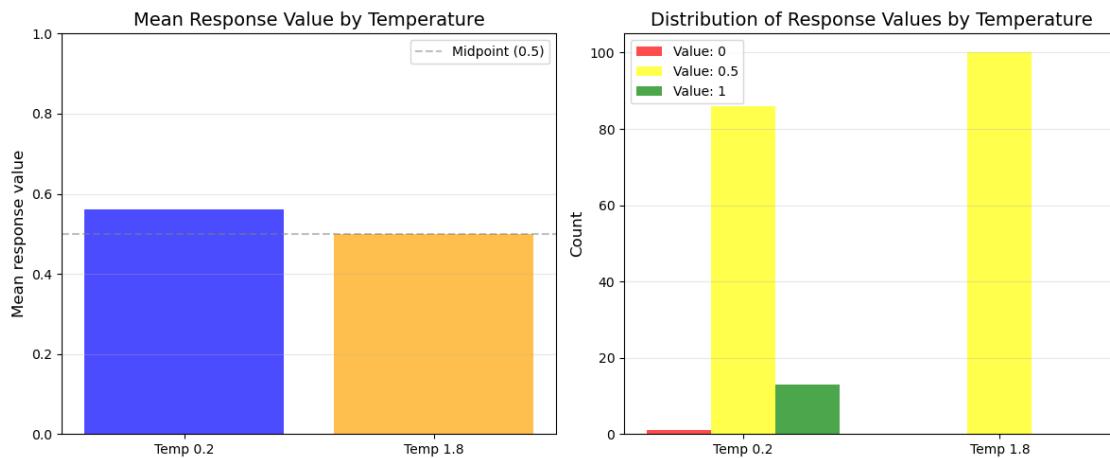
# Create grouped bar chart
x = np.arange(len(temperatures))
width = 0.25

axes[1].bar(x - width, [count_0_temp1, count_0_temp2], width, label='Value: 0', color='red', alpha=0.7)
axes[1].bar(x, [count_0_5_temp1, count_0_5_temp2], width, label='Value: 0.5', color='yellow', alpha=0.7)
axes[1].bar(x + width, [count_1_temp1, count_1_temp2], width, label='Value: 1', color='green', alpha=0.7)

axes[1].set_ylabel('Count', fontsize=12)
axes[1].set_title('Distribution of Response Values by Temperature', fontsize=14)
axes[1].set_xticks(x)
axes[1].set_xticklabels(temperatures)
axes[1].legend()
axes[1].grid(True, alpha=0.3, axis='y')

plt.tight_layout()
plt.show()

```



1.5 Congratulations!

You've completed this introduction to coding fundamentals. We covered:

1. **Git**: Version control, forking, cloning, and basic repository management
2. **Virtual Environments**: Creating isolated Python environments for projects
3. **NumPy**: Numerical computing, performance optimization, broadcasting, and array operations
4. **APIs**: Interacting with external services (ChatGPT API example)
5. **Statistical Analysis**: Testing hypotheses with real data

1.5.1 Possible next steps to explore

- Practice with more complex Git workflows (branches, pull requests)
- Contribute to open-source projects on GitHub
- Apply NumPy to real-world data analysis problems
- Explore additional Python libraries (pandas, scikit-learn, pytorch)
- Build projects that combine multiple APIs

1.5.2 Additional resources

- [ProGit Book](#)
- [Numpy Broadcasting Documentation](#)
- [IBM API](#)
- [OpenAI Platform](#)

Happy learning!

Pedro

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