WHAT IS THE OpenAI API?

James Chapman

Curriculum Manager,
DataCamp

Course goals

1. Use AI models through the **OpenAI API**
2. Solve real-world tasks
3. Use **Python** code

Expected knowledge

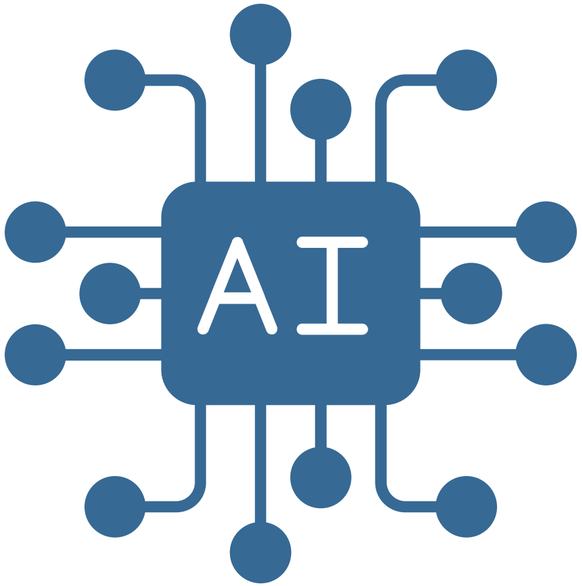
- Subsetting lists and dictionaries
- Control flow

  `if` `elif` `else`

- Loops

  `for` `while`

Not expected



Machine Learning

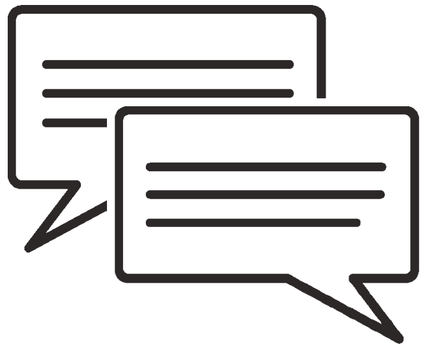
Let’s dive in!

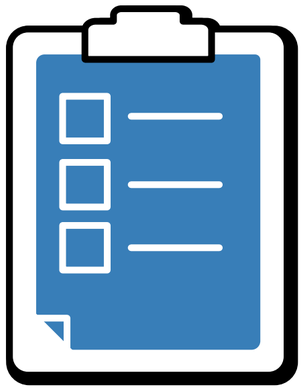
OpenAI

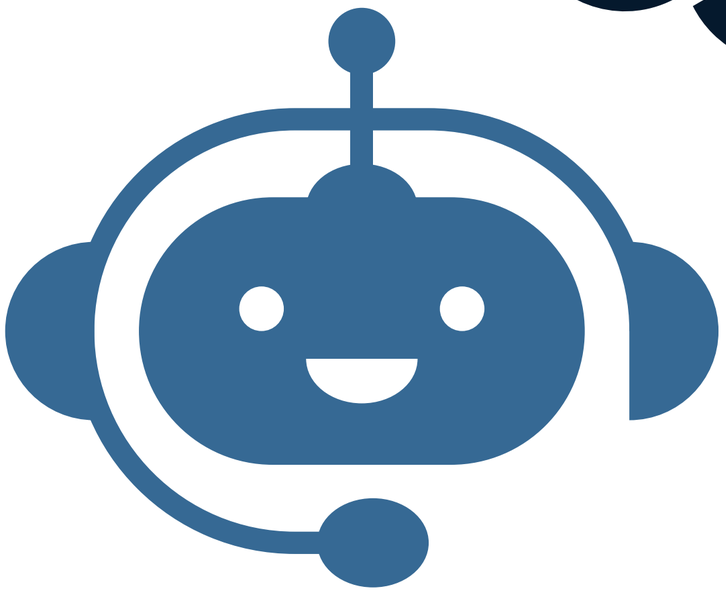
- Research and develop AI systems

OpenAI

- AI-powered chatbot





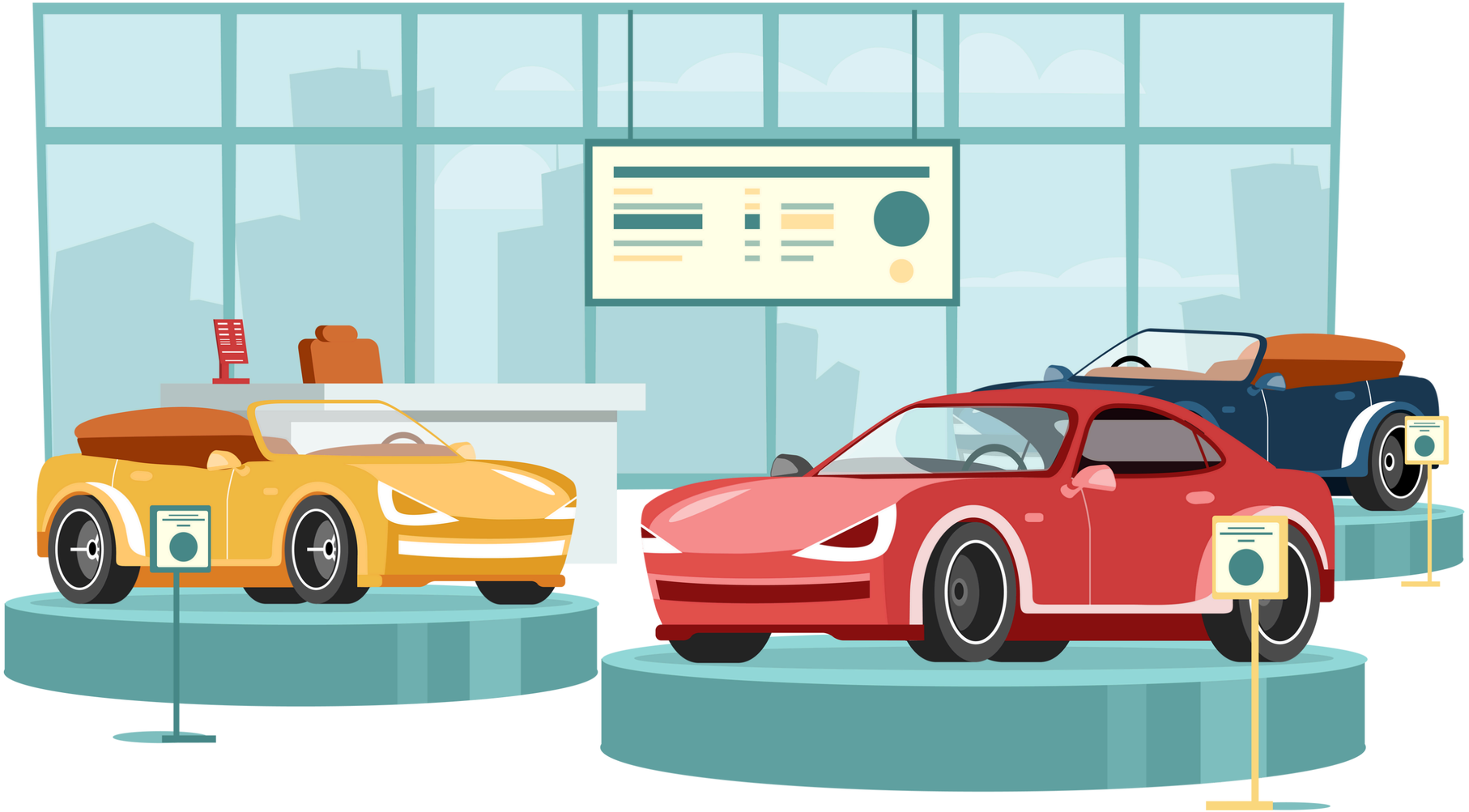


ChatGPT

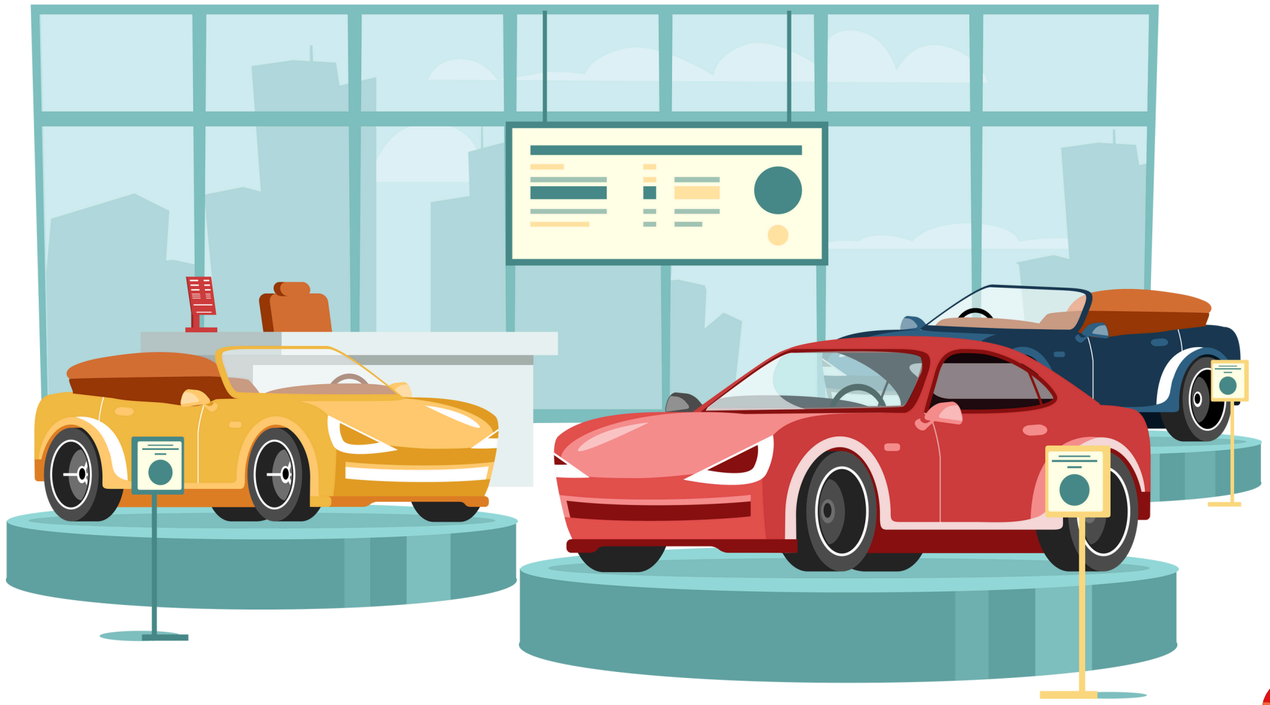
OpenAI API

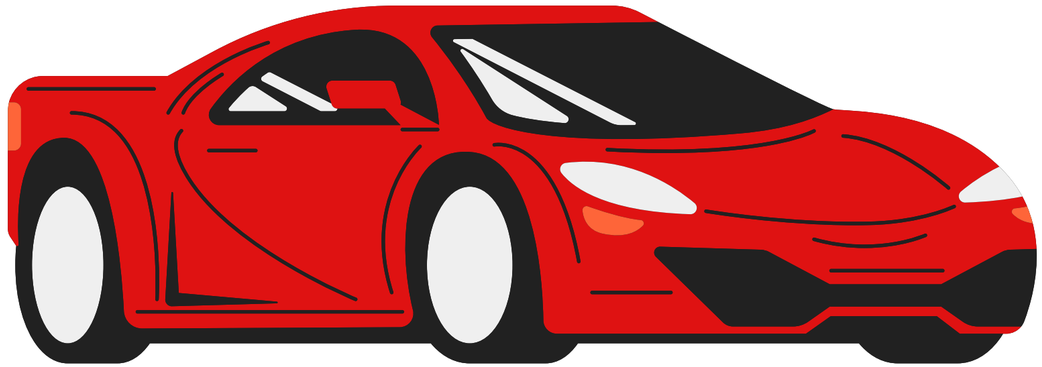
- Access and customize OpenAI models

OpenAI

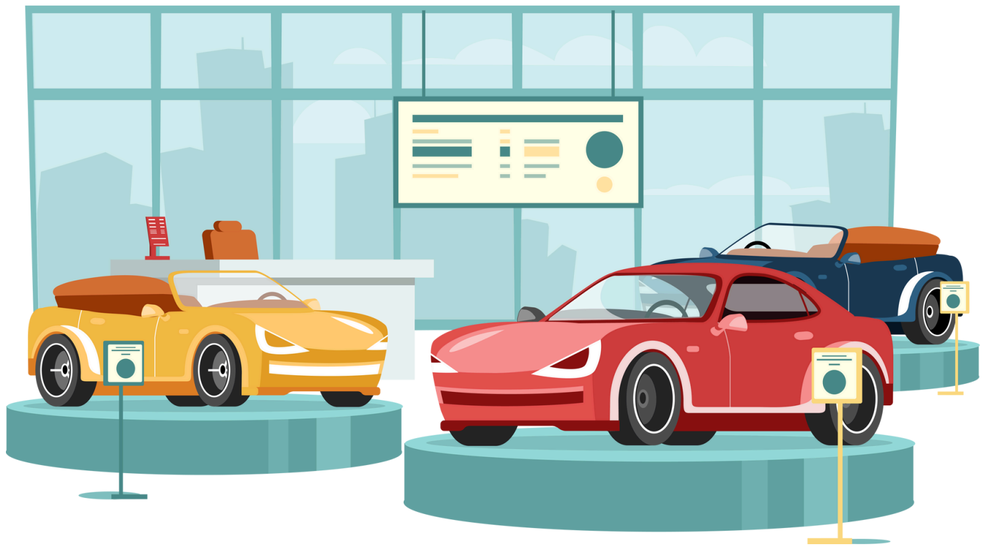


OpenAI

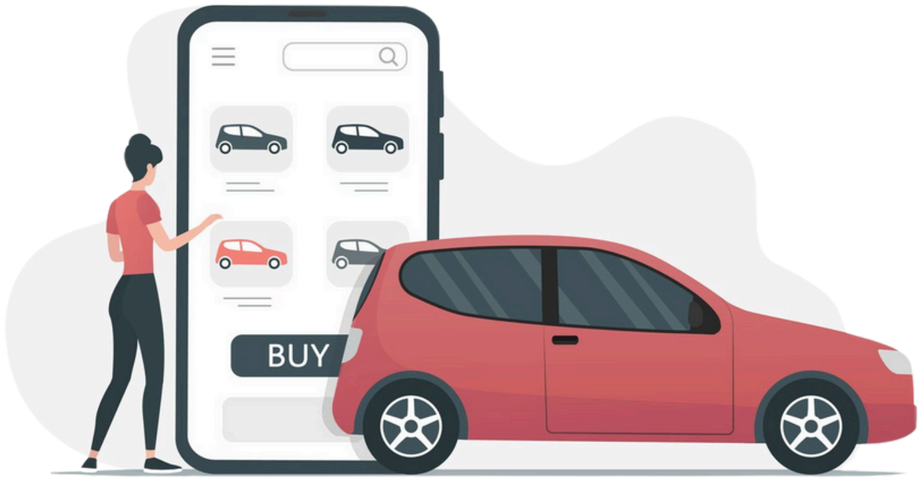




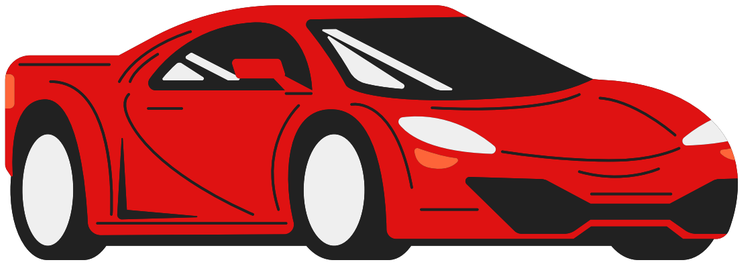
OpenAI



OpenAI API

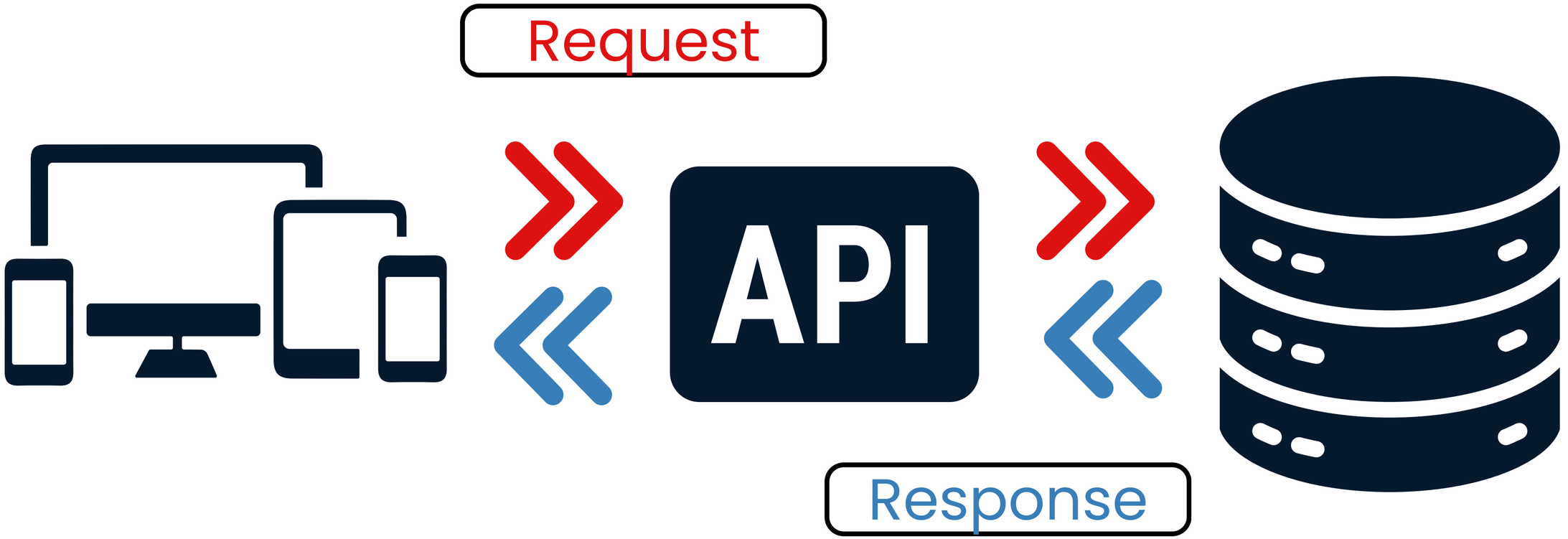


ChatGPT



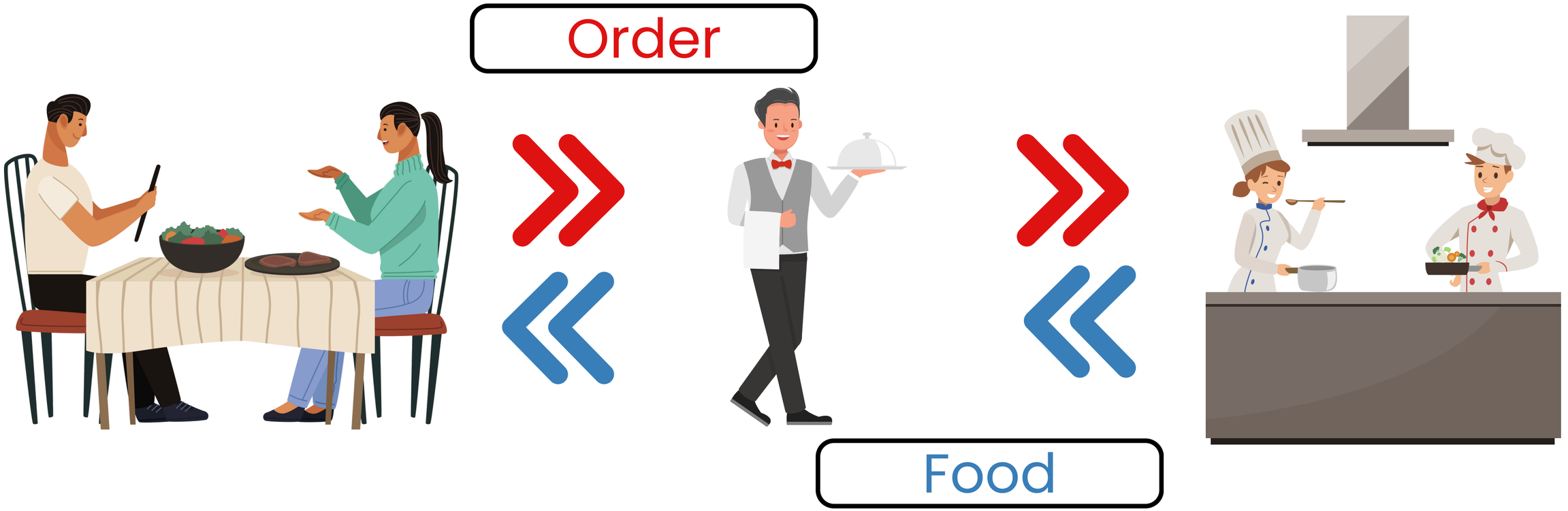
What is an API?

- **A**pplication **P**rogramming **I**nterface



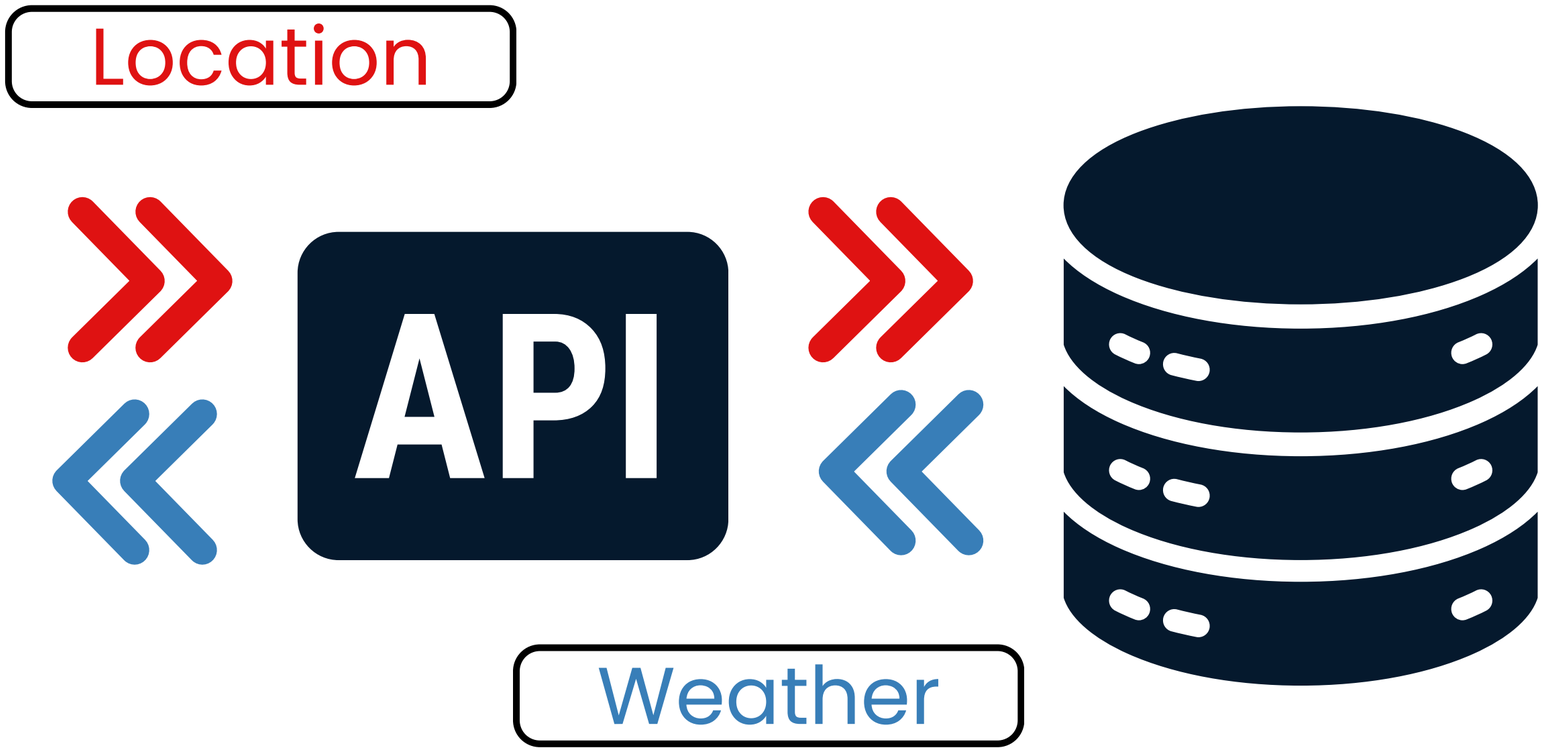
What is an API?

- **A**pplication **P**rogramming **I**nterface

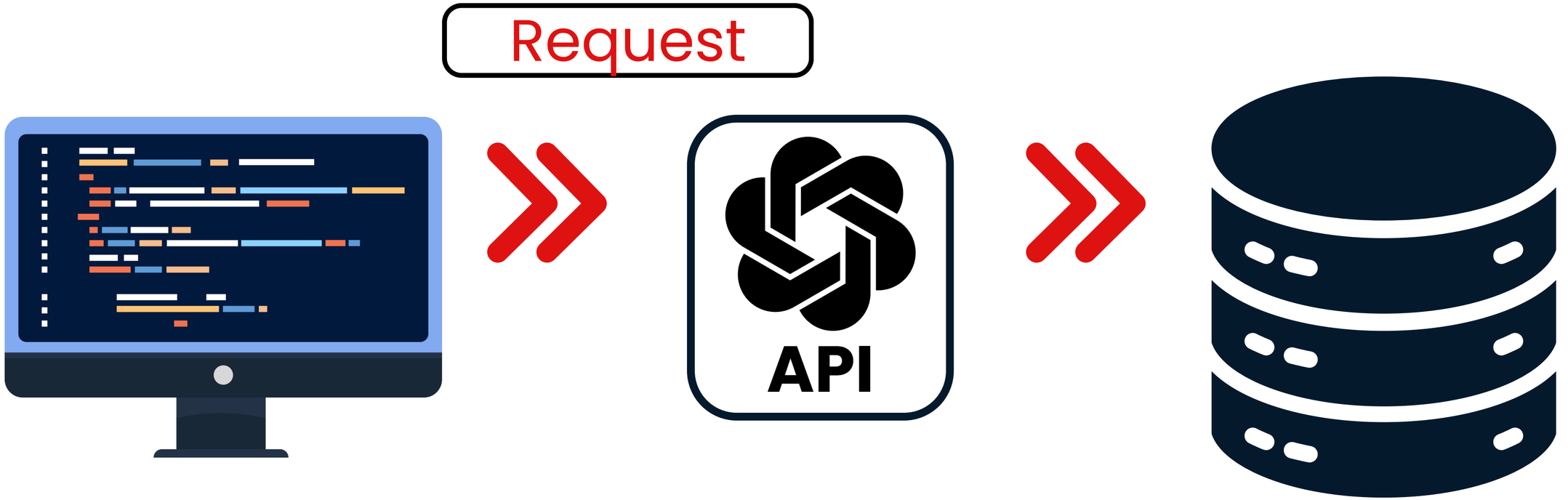


What is an API?

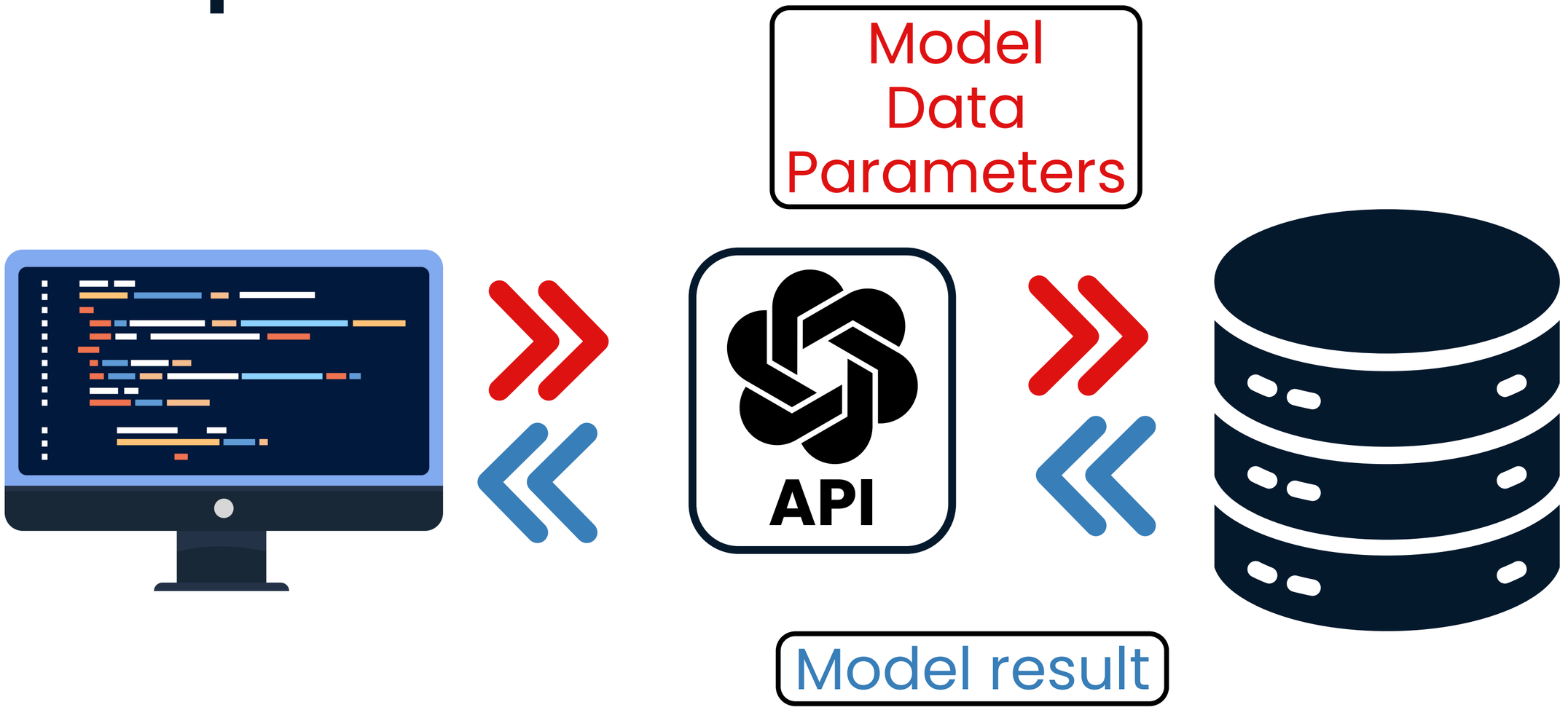
- **A**pplication **P**rogramming **I**nterface



The OpenAI API

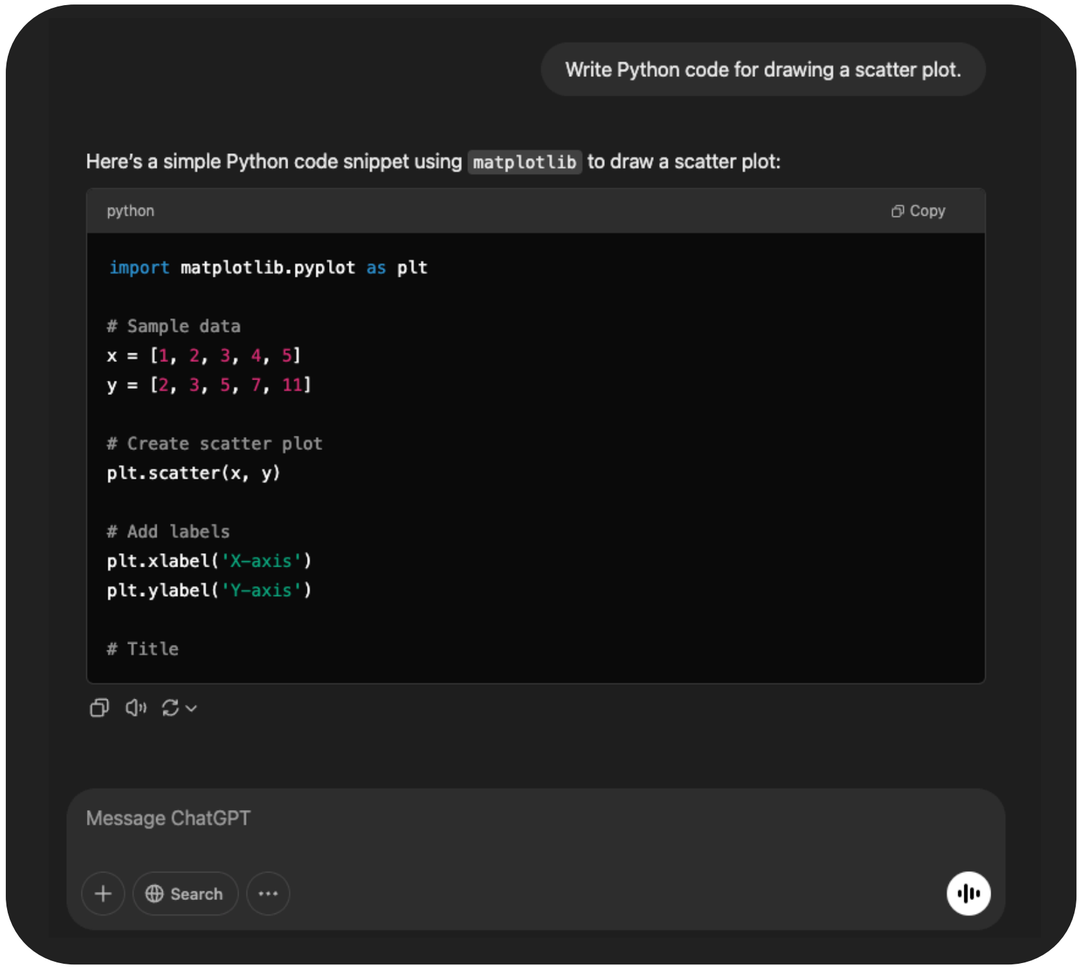


The OpenAI API



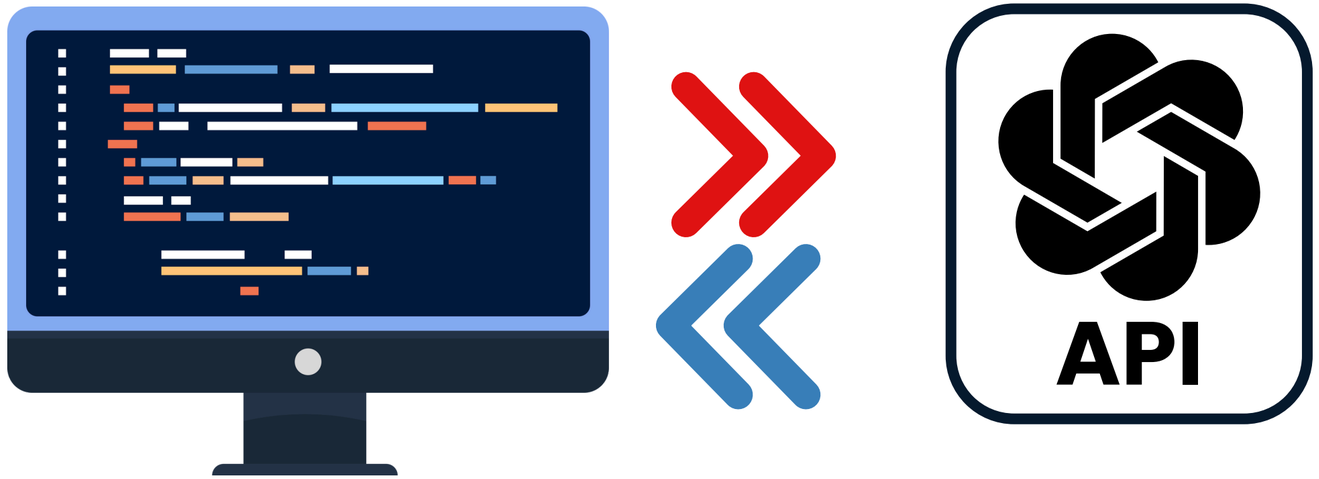
Web interface vs. APIs

ChatGPT



- Minimal setup
- Streamline workflows

Web interface vs. APIs



- Integrate AI into products
- Work with models programmatically

OpenAI API

NEW

OpenAI API

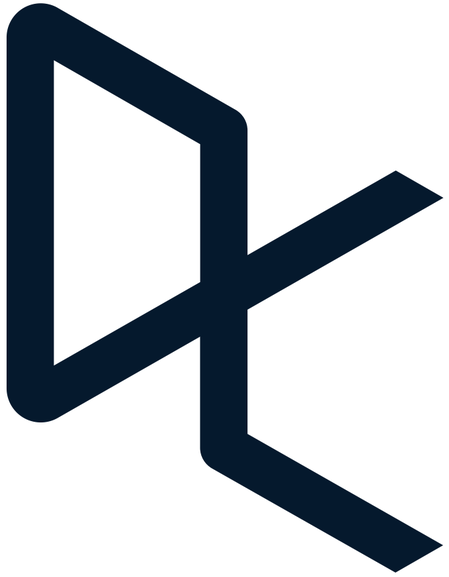
- Computational resources
- Data

Building AI applications

datalab

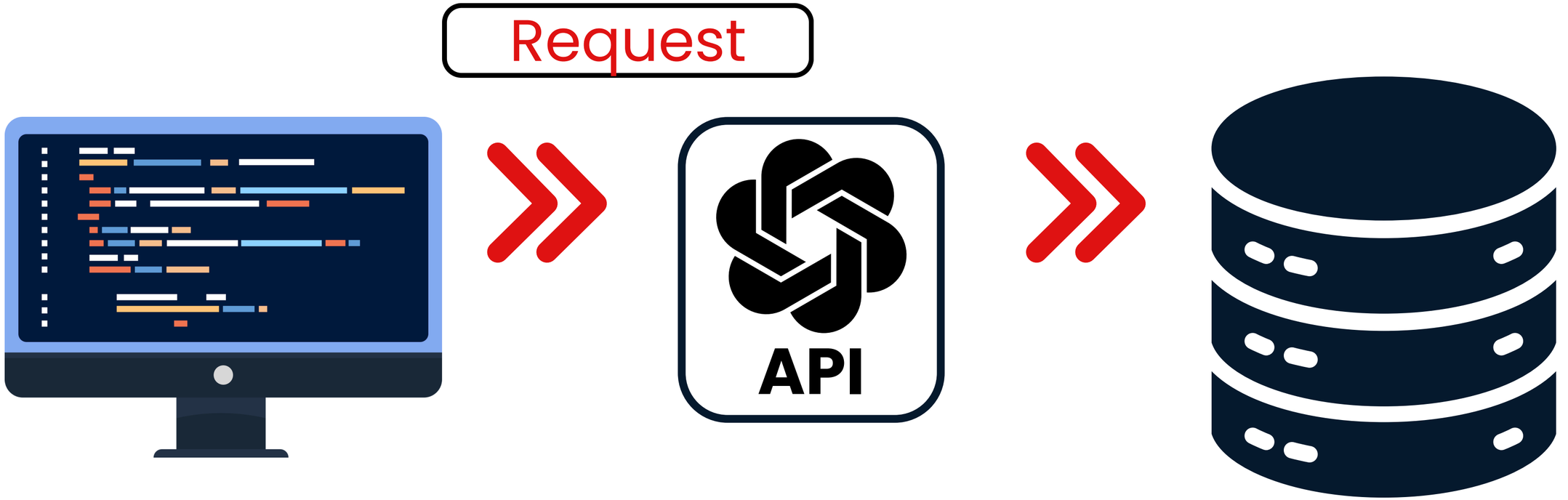
- AI-powered IDE

LET’S PRACTICE!

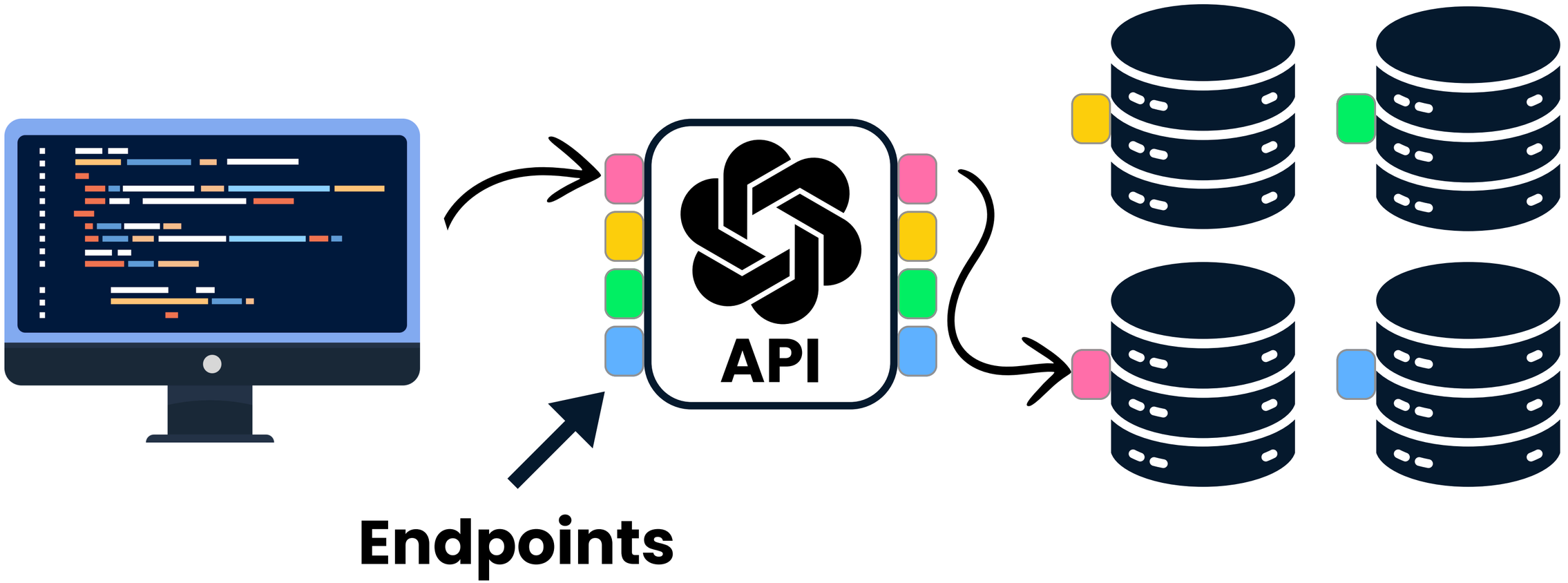


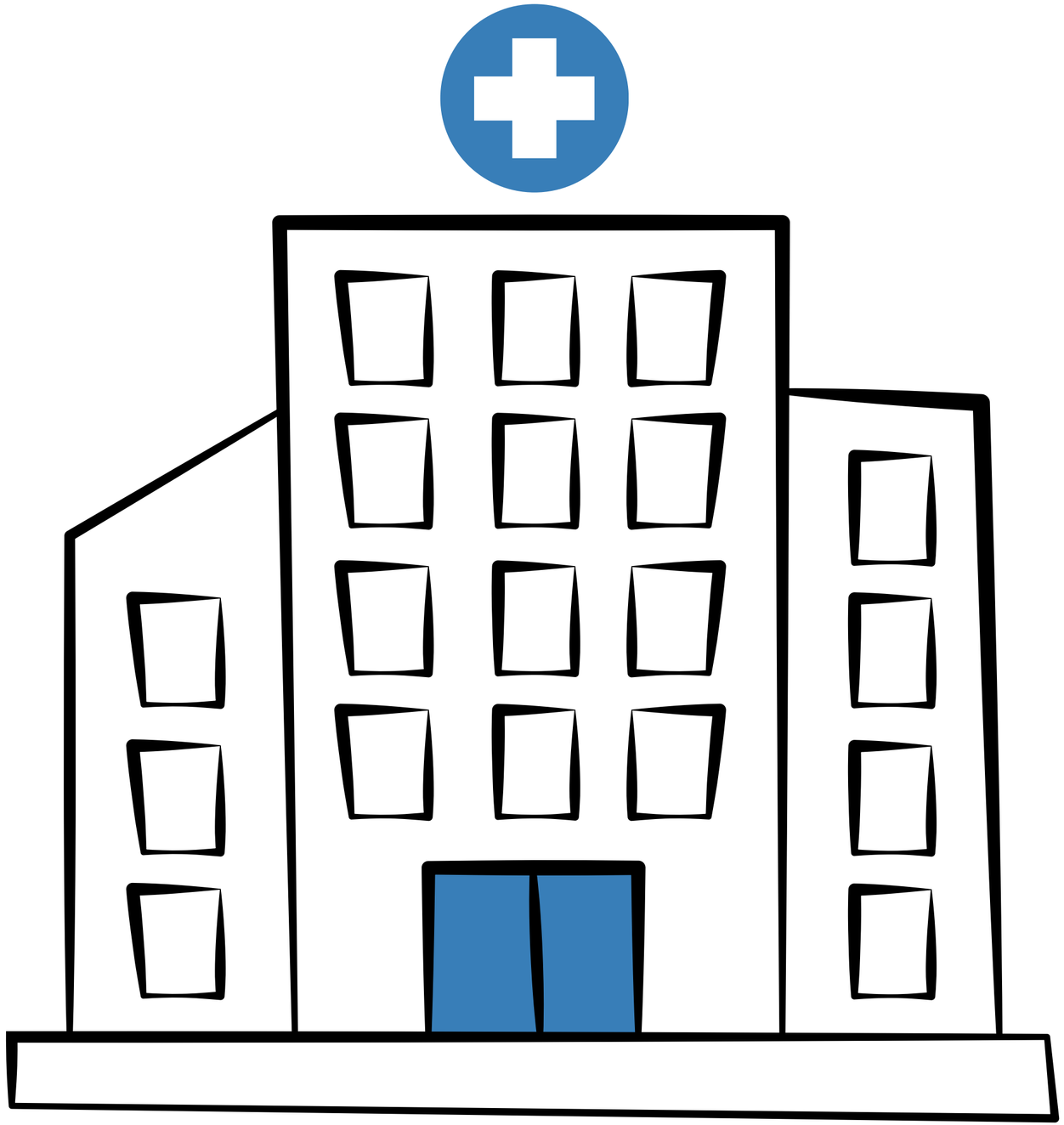
MAKING REQUESTS TO THE OpenAI API

The OpenAI API

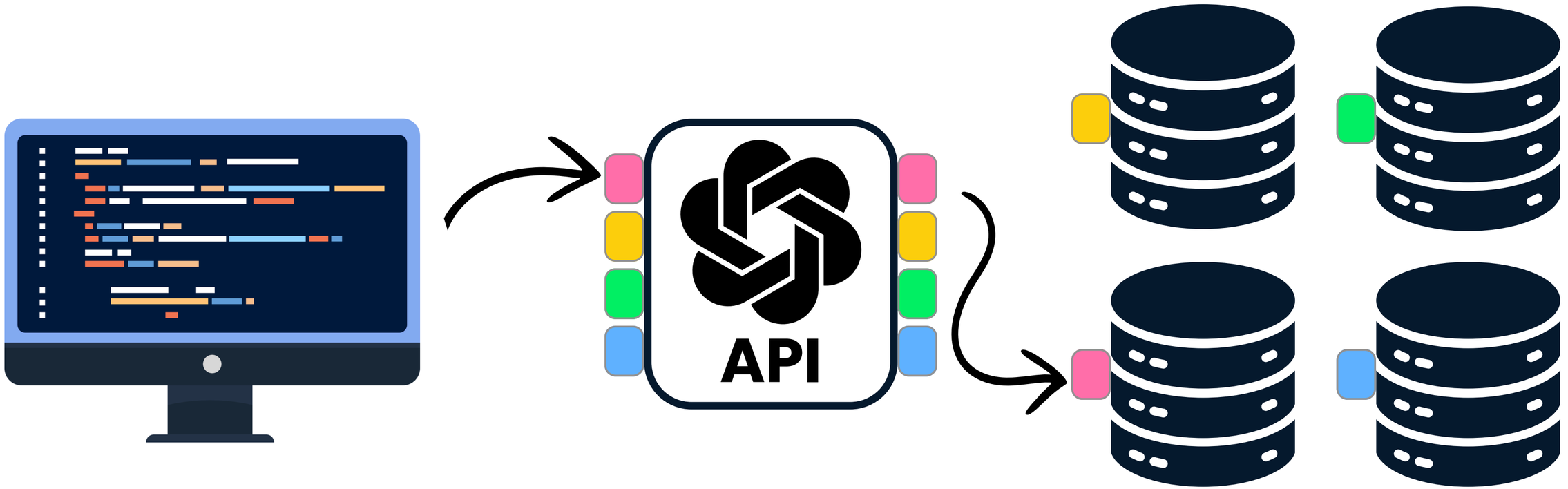


API Endpoints

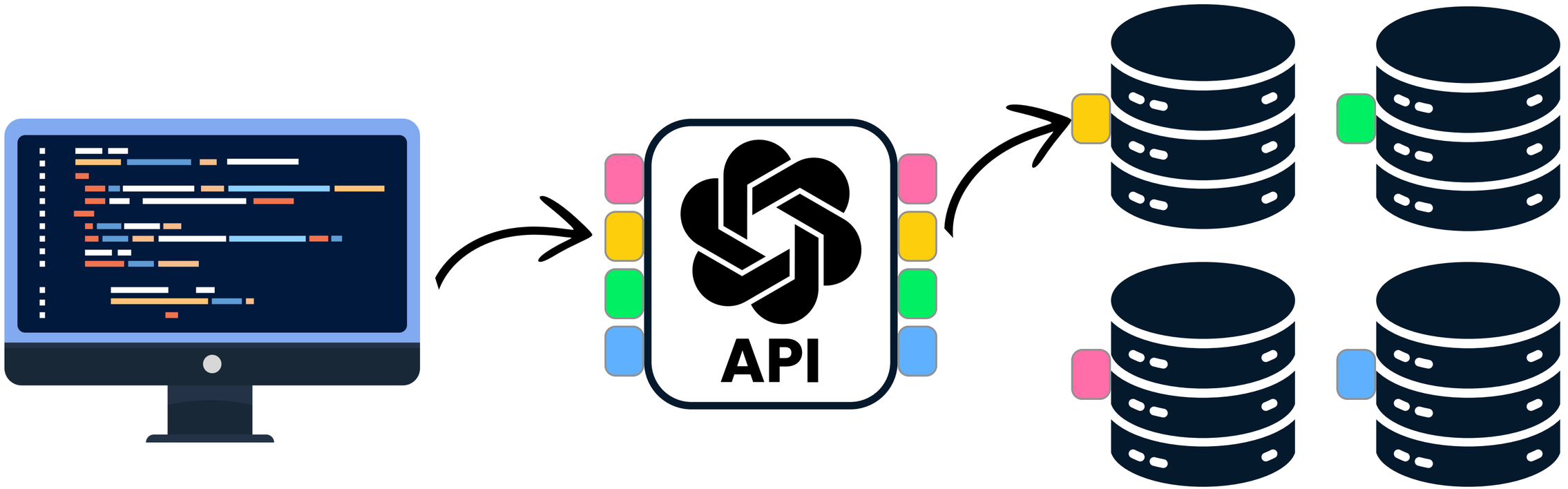




API Endpoints



API Endpoints

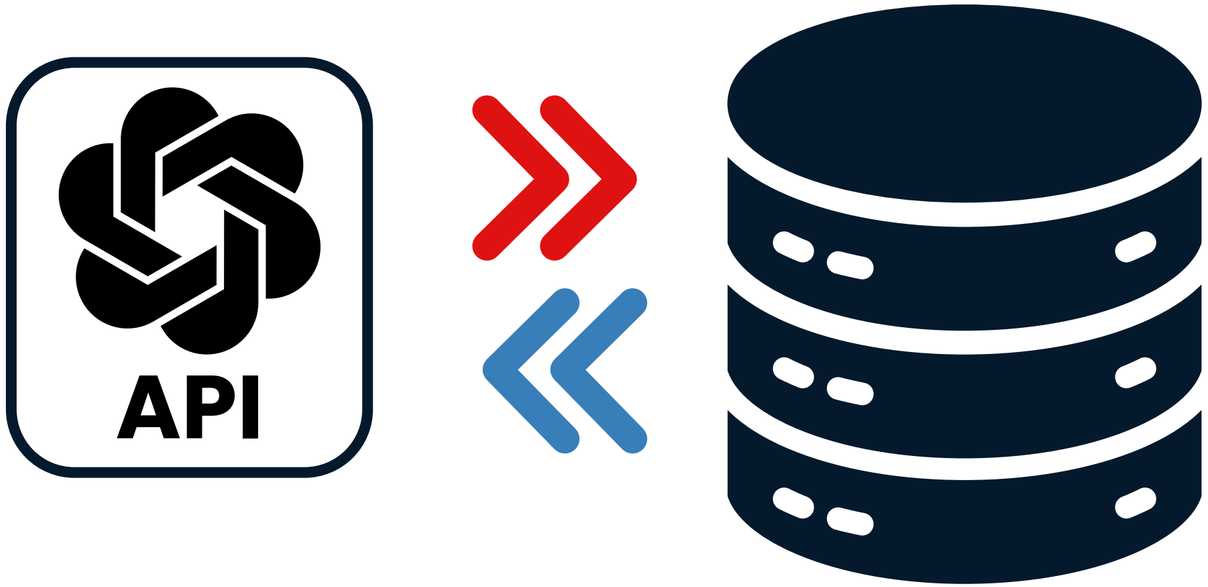


Authentication

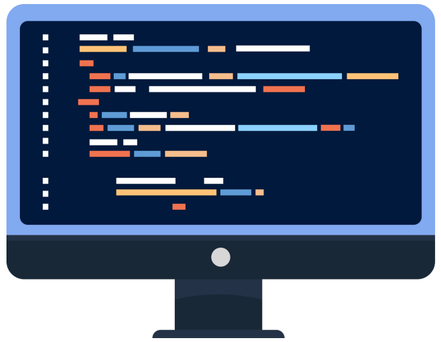
- Unique key

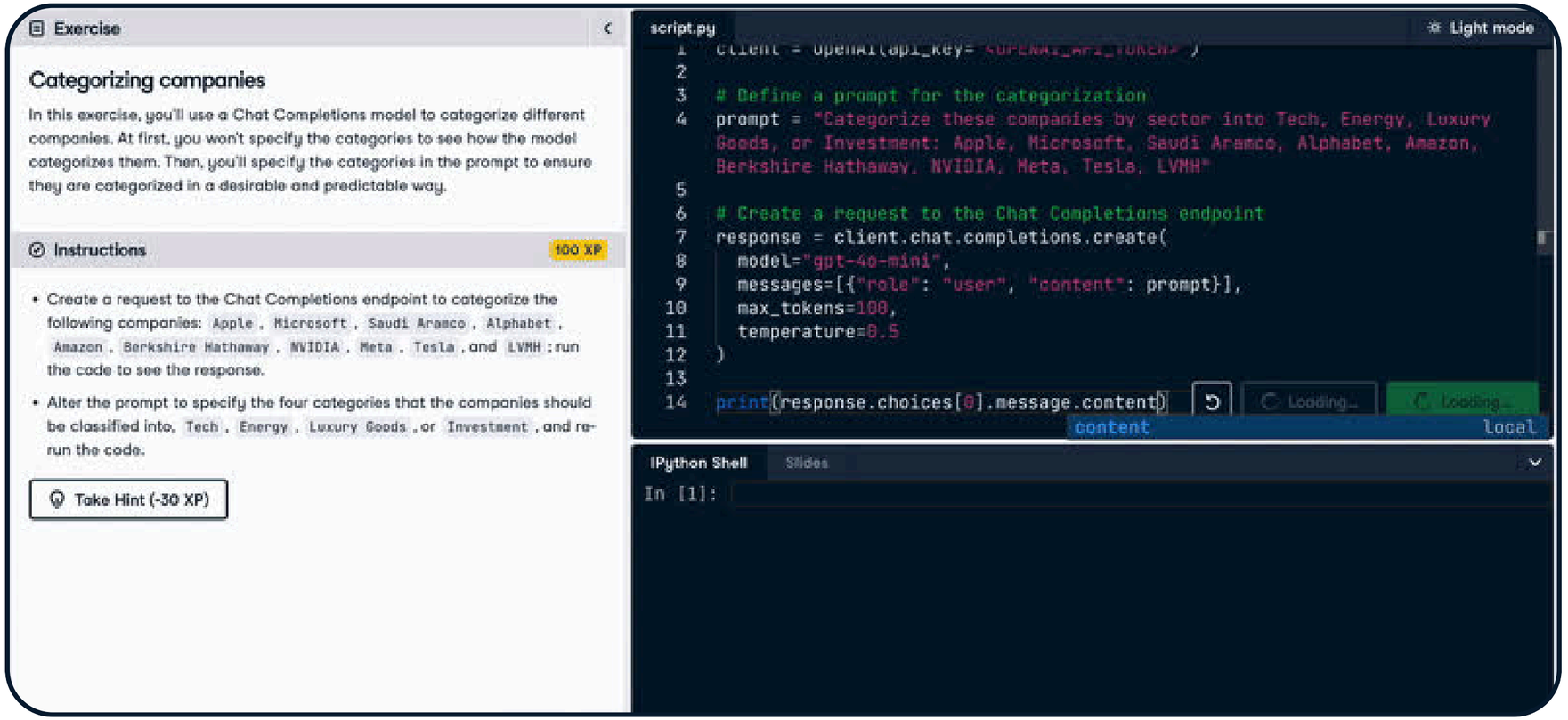
API usage costs

- OpenAI API

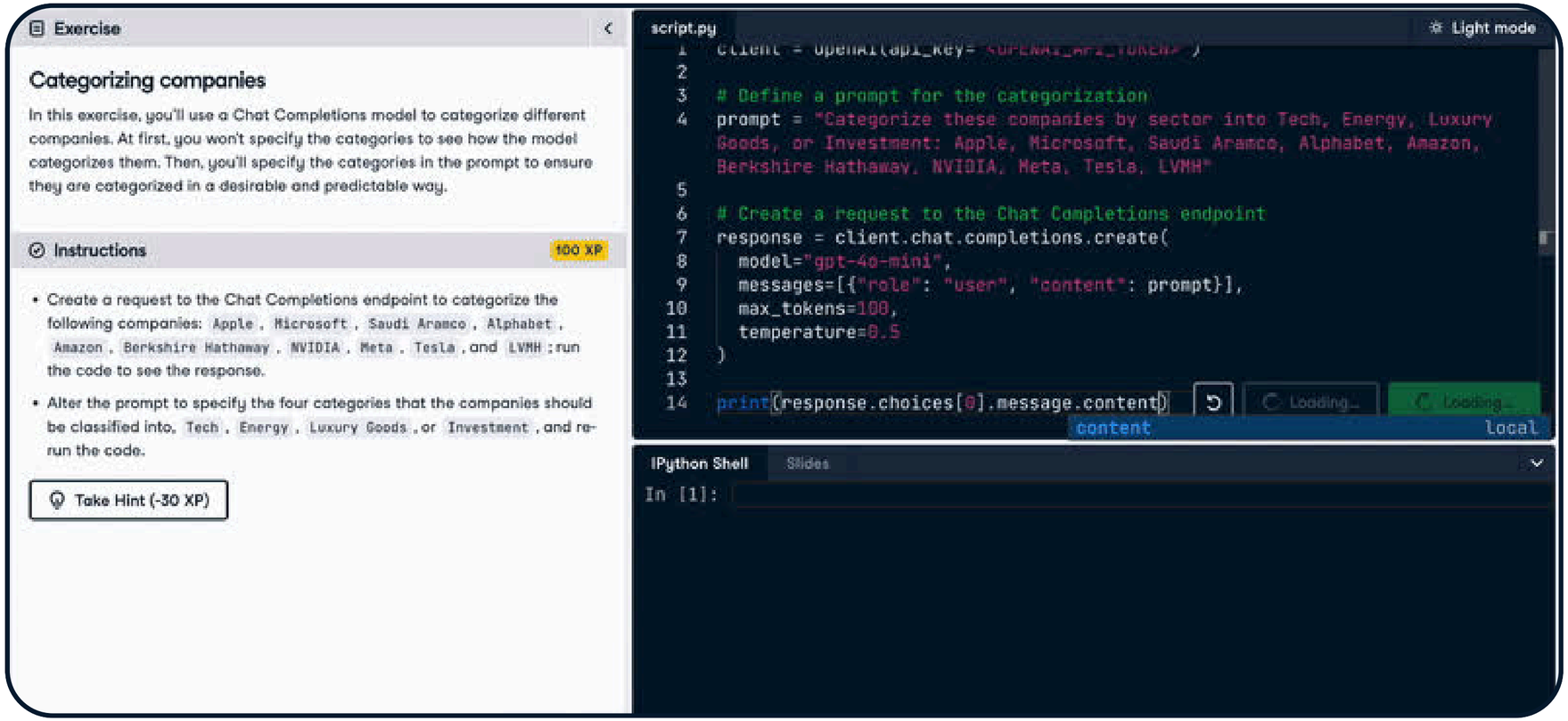


Course exercises





Course exercises



Creating an API key

1. Create an OpenAI account
2. Go to the API keys page
3. Create a new secret key

NAME	KEY	CREATED	LAST USED
Secret key	sk-...Vpp5	5 Feb 2023	25 Apr 2023

+ Create new secret key

Making a request

Making a request

```
from openai import OpenAI

client = OpenAI(api_key="ENTER YOUR KEY HERE")
```

- **Client** - configures environment for communicating with API

Making a request


```python
from openai import OpenAI

client = OpenAI(api_key="ENTER YOUR KEY HERE")
```

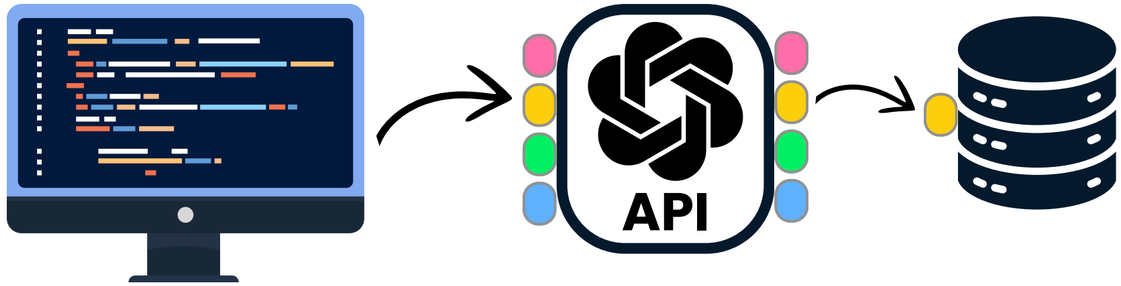
Making a request

```
from openai import OpenAI

client = OpenAI(api_key="ENTER YOUR KEY HERE")

response = client.chat.completions.create(


)
```

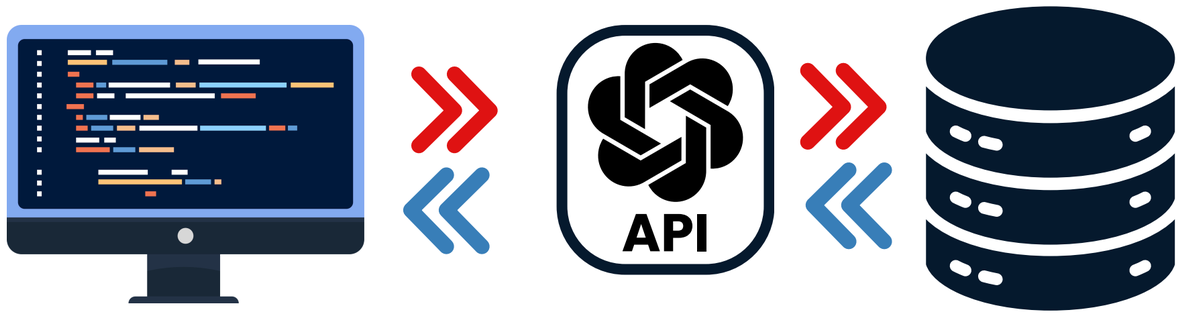


Making a request

```
from openai import OpenAI

client = OpenAI(api_key="ENTER YOUR KEY HERE")

response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[{"role": "user", "content": "What is the OpenAI API?"}]
)
```



Making a request

```
from openai import OpenAI

client = OpenAI(api_key="ENTER YOUR KEY HERE")

response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[{"role": "user", "content": "What is the OpenAI API?"}]
)
```

- List of dictionaries
- Content from **user** role prompts the model

Making a request

```
from openai import OpenAI

client = OpenAI(api_key="ENTER YOUR KEY HERE")

response = client.chat.completions.create(
    model="gpt-4o-mini",
    messages=[{"role": "user", "content": "What is the OpenAI API?"}]
)

print(response)
```

The response

```
ChatCompletion(id='chatcmpl-AEcQbQekIzxcxVAKYVAjgUAXokgrl', choices=
[Choice(finish_reason='length', index=0,logprobs=None,
message=ChatCompletionMessage(content='The OpenAI API is a cloud-based service
provided by OpenAI that allows developers to integrate advanced AI models into their
applications.', refusal=None, role='assistant', function_call=None,tool_calls=None))],
created=1728047673, model='gpt-4o-mini-2024-07-18', object='chat.completion',
service_tier=None,system_fingerprint='fp_f85bea6784',usage=CompletionUsage(completion_
tokens=30, prompt_tokens=14, total_tokens=44,prompt_tokens_details {'cached_tokens':
0}, completion_tokens_details={'reasoning_tokens': 0}))
```

The response

```
ChatCompletion(id='chatcmpl-AEcQbQekIzxcxVAKYVAjgUAXokgrl',
               choices=[Choice(finish_reason='length', index=0, logprobs=None,
                               message=ChatCompletionMessage(content='The OpenAI API is a cloud-
                               based service provided by OpenAI that allows developers to
                               integrate advanced AI models into their applications.',
                               refusal=None, role='assistant', function_call=None,
                               tool_calls=None))],
               created=1728047673,
               model='gpt-4o-mini-2024-07-18',
               object='chat.completion', service_tier=None, system_fingerprint='fp_f85bea6784',
               usage=CompletionUsage(completion_tokens=25, prompt_tokens=14, total_tokens=39,
                                     prompt_tokens_details={'cached_tokens': 0},
                                     completion_tokens_details={'reasoning_tokens': 0}))
```

Interpreting the response

```
print(response.choices)
```

```
[Choice(finish_reason='length', index=0, logprobs=None,
message=ChatCompletionMessage(content='The OpenAI API is a cloud-
based service provided by OpenAI that allows developers to integrate
advanced AI models into their applications.', refusal=None,
role='assistant', function_call=None, tool_calls=None))]
```

- List with one element

Interpreting the response

```
print(response.choices[0])
```

```
Choice(finish_reason='length', index=0, logprobs=None,
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based service provided by OpenAI that allows developers to integrate
advanced AI models into their applications.', refusal=None,
role='assistant', function_call=None, tool_calls=None))
```

Interpreting the response

```
print(response.choices[0].message)
```

```
ChatCompletionMessage(content='The OpenAI API is a cloud-based
service provided by OpenAI that allows developers to integrate
advanced AI models into their applications.', refusal=None,
role='assistant', function_call=None, tool_calls=None)
```

Interpreting the response

```
print(response.choices[0].message.content)
```

```
The OpenAI API is a cloud-based service provided by OpenAI that
allows developers to integrate advanced AI models into their
applications.
```

- Response as a string

Interpreting the response

LET’S PRACTICE!