Intro To Python and GPT-4 For Beginners

Wifi
Wifi@Village Hotel Bugis

Access Code
Village1

Resources
linktr.ee/sozcode

www.sozcode.com

Attendance QR

ABOUT US

We work with companies, institutions and government agencies of all sizes, to deliver technology training

CUSTOMISED COURSES

- SCDF – Customised training in UIPath
- Nanyang Technological University Singapore / RSIS – in Python, Tableau, Excel, Excel VBA
- Ministry of Law Singapore – Customised training in Python
- Changi airport singapore – Customised training in Generative AI tools

OPEN RUN COURSES

CNB, Singapore Food Agency, Agency for Science, Technology and Research Singapore, MTI Ministry of Trade and Industry Singapore, Nanyang Technological University Singapore, Ministry of Communications and Information, Ministry of Home Affairs, GovTech Singapore, NYC, Ministry of Education Singapore, Police Singapore, Ministry of Health Singapore, Ministry of Sustainability and the Environment Singapore, IMDA Infocomm Media Development Authority, Singapore Customs, Singapore Prison Service, HSA, Institute of Technical Education, RSIS, Singapore Polytechnic SP, National Environment Agency, SCDF The Life Saving Force, MSF Ministry of Social and Family Development, CAAS Civil Aviation Authority of Singapore, Ministry of Manpower

We bring practical tips from real-life project experience on data analytics and process automation into our courses.

We promise that learning will be fun and immediately applicable to your work!

IMPLEMENTATION SERVICES

DATA ANALYTICS

- HOOGA — Aggregated sales dashboard (Tableau)
- PUTIEN — Aggregated outlet sales dashboard
- JR GROUP — Aggregated sales dashboard
- NYC — Internal dashboard

PROCESS AUTOMATION

- NYC — Streamlined Procurement workflows
- JR GROUP — Streamlined finance workflows
- AVENTIS — Streamlined education admin workflows

WEB/APP DEVELOPMENT

- INSECT FEED TECHNOLOGIES — iOS and Android farm management app
- Saint Clare — iOS and Android parent communication app
- Silby — iOS and Android chat app connecting youths and counsellors
- Pawmeal — Dynamically priced pet food ecommerce web app

Our Training Methodology: *Big Picture Learning*

Brandon has received consistent positive feedback from the course attendees on his clear content delivery and patience in guiding the participants through scenerios which are relevant and applicable to real world challenges faced by organisations. The attendees were kept engaged during the highly interactive, well designed course and are encouraged to continue their learning of the subject matter beyond the workshop.

Doreen Ang
National Technological Univsrsity

Generic Courses: Long, chapter-by-chapter course tedious to understand

Traditional technology courses are usually taught chapter by chapter. Students often get bored and lost in a very lengthy learning process. This lengthy learning process discourages most students through their learning journey.

Sozcode Courses: Big picture understanding by teaching selected chapters in a short course

By teaching only relevant chapters to achieve a big picture understanding, we keep students engaged throughout our course. We hope to educate and inspire individuals just enough to get started, experiment and break things.

We have trained over 1000+ participants over the past 6 years, with great testimonials on participant engagement

sozcode.com/positive-reviews

Refreshingly different from other courses

Brandon is really dedicated, passionate, patient. he managed to package the training in a super interactive, concise and fun manner. Its easy to retain knowledge by seeing the application of Python. This is refreshingly different from other courses

Peck Hwang Wong
Marketing Manager, Amazon

Attendees were kept engaged during the highly interactive, well designed course

Brandon has received consistent positive feedback from the course attendees on his clear content delivery and patience in guiding the participants through scenarios which are relevant and applicable to real world challenges faced by organisations. The attendees were kept engaged during the highly interactive, well designed course and are encouraged to continue their learning of the subject matter beyond the workshop.

Doreen Ang
Trainer, Nanyang Technological University

Understands his audience's needs very well and pitches his lessons at a suitable level

I highly recommend the Data Analysis and Visualization with Python course taught by Brandon Ong. The course is suitable for both complete novices and people who have some prior coding experience.

Brandon understands his audience's needs very well and pitches his lessons at a suitable level, avoiding complex jargon and concepts where possible. He also motivates concepts and techniques he teaches with interesting anecdotes.

Kenneth Kwok
Principal Research Scientist, A*STAR

Plenty of real-life experiences in-built into his teaching

Brandon is very knowledgeable and passionate about this topic, with plenty of real-life experiences in-built into his teaching. Instead of going chapter by chapter, we learn to apply the basic but important knowledge and go straight to playing with the software and visualization.

Ding Hui Fang
Senior Executive (Procurement), Prime Minister's Office

COURSE INSTRUCTOR

Brandon Ong

Experience

- Lead Consultant and Trainer at Sozcode
- Senior Consultant, Marketing Technology at ADA
- Development Partner at Enterprise Singapore
- Taught data and digital courses for over 1000 participants over the past 5 years

Course Overview

1	Python basics
2	Introduction to popular open source libraries
3	Introduction to OpenAI
4	**Use Cases That Combines Programming With Gen AI:** **(How Can We Ask ChatGPT 100 questions and get 100 answers back at the same time?)** Content generation at scale Intelligent Classification Retrieval of structured data from PDFs Intelligent Web Scraping

Introduce yourself

1) Tell us a bit more about what you do
2) Have you used ChatGPT before? How have you used it?
3) How do you think Python can be used together with ChatGPT?

What is Python used for?

Python is a multi-purpose programming language

- Web Development (Django for Instagram)
- Numeric/Scientific – Data Analytics and Machine Learning
- Web Scraping
- Computer Vision
- Writing scripts for automation

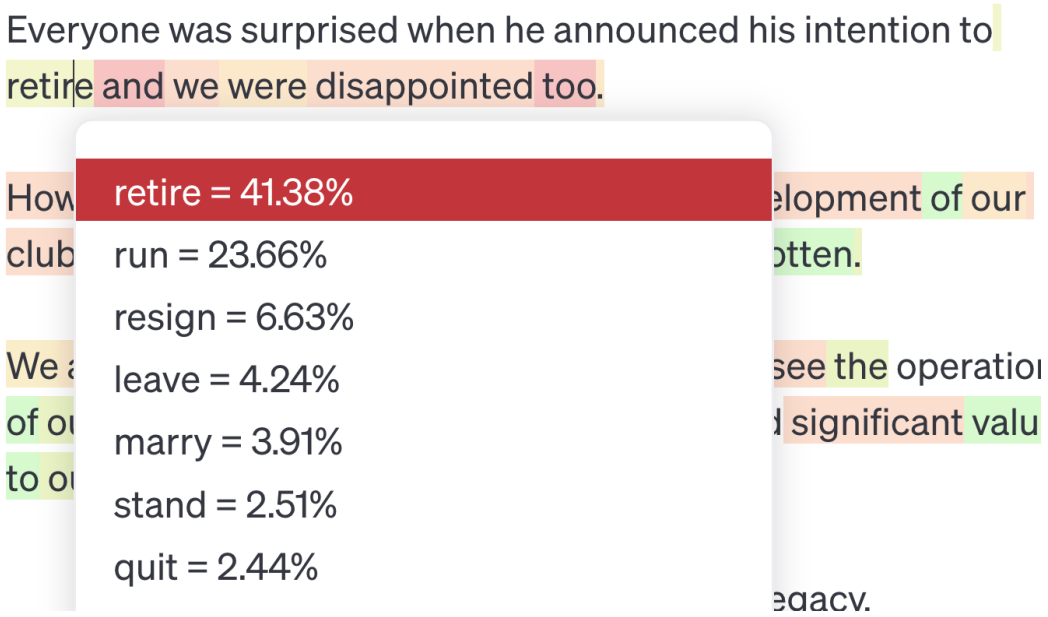
How does Large Language Models (LLM) work?

- If LLMs had to complete a sentence, there are many possible words that would make sense.

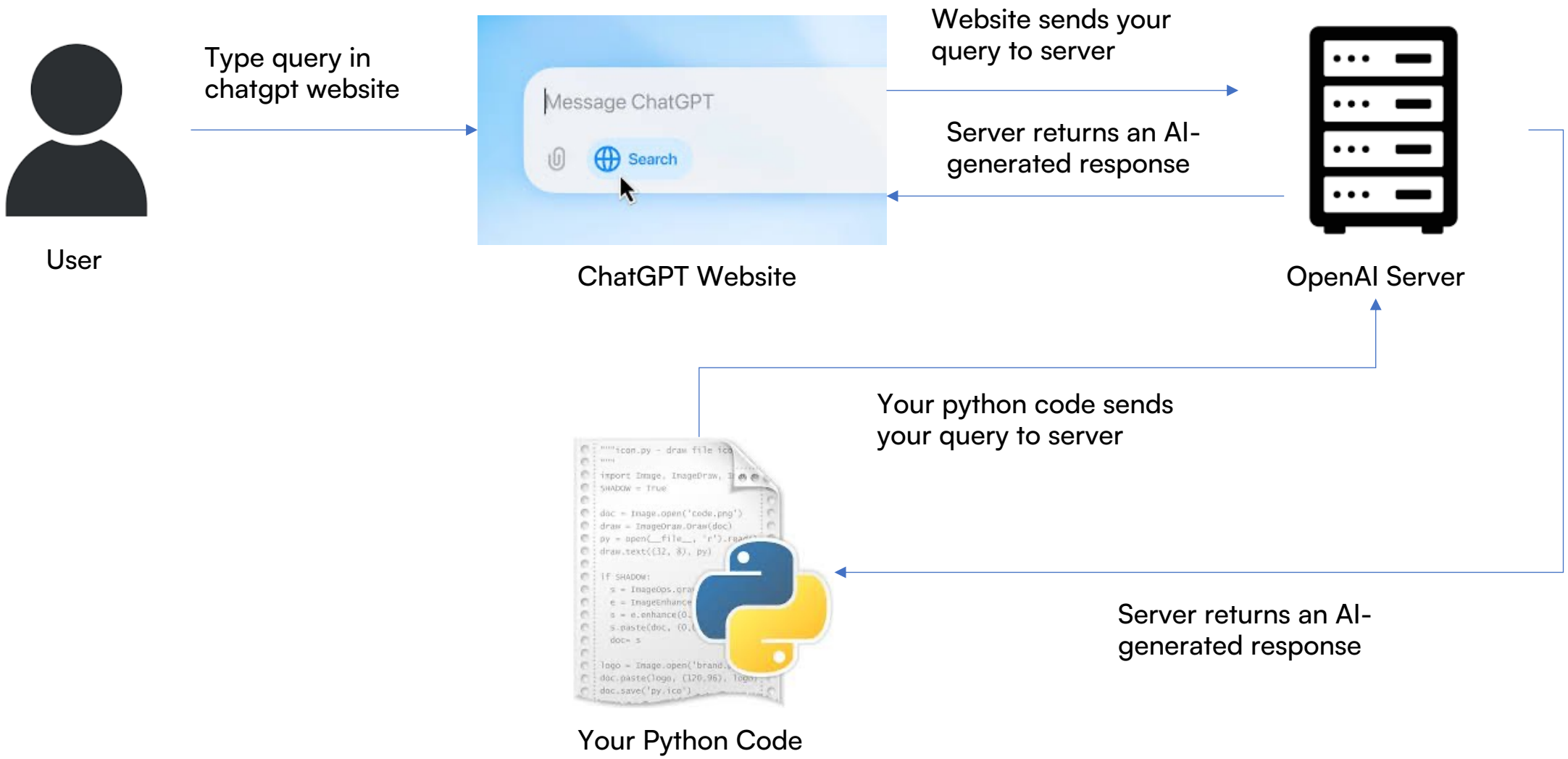
- LLMs would have to pick one of the many words that make sense. They pick based on scraping text from the web. Of all the data they scraped, they discovered that retire appears 41% of the time and run appears 23% of the time after the sentence “Everyone was surprised when he announced his intention to"

- Reductively, LLMs work by selecting **one of the next** best probable token (smaller form of a word) with the context given

- LLMs **may not always pick the token with the highest probability**, this explains why two users of different prompts may get different answers.



What is the OpenAI API?

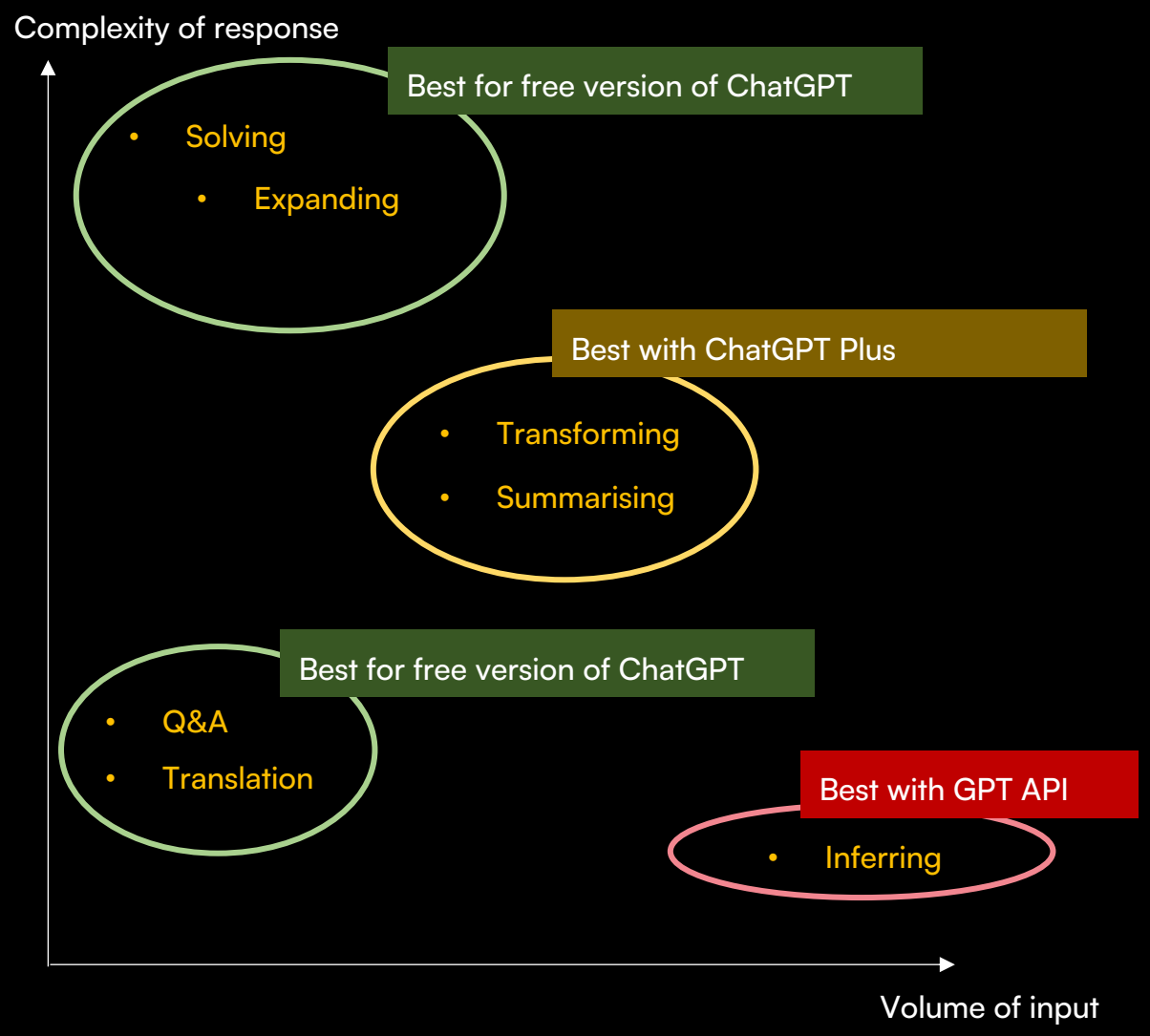


Main use cases of GPT

1) Summarising
2) Inferring/Classification/Extraction
3) Transforming
4) Expanding/Generation
5) General Q&A
6) Translation
7) Solving

Other use cases (for coding)

- Code generation
- Debugging
- Explanation
- Generate documentation



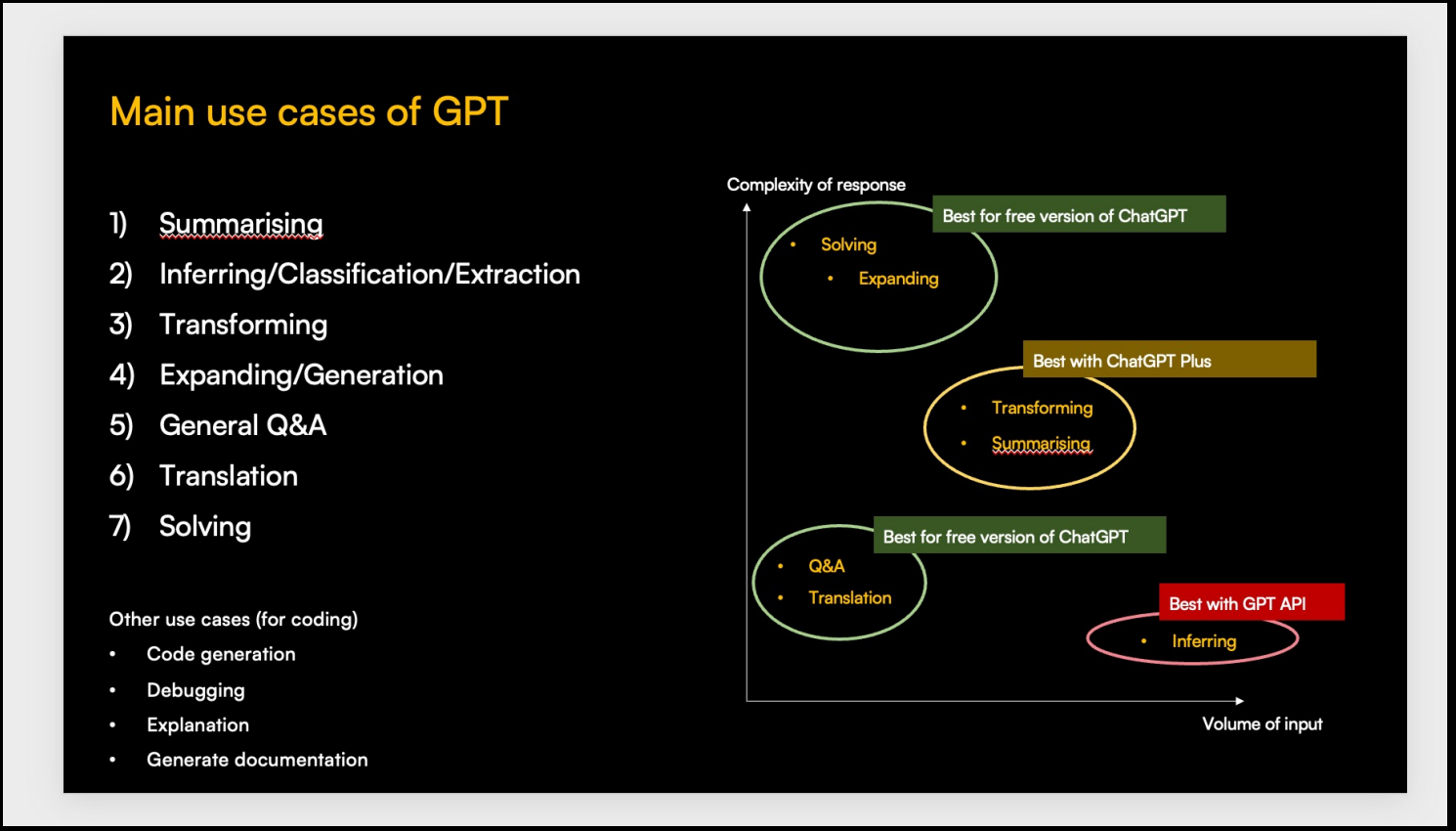
Use Cases Beyond Chatbots

Content Generation At Scale
- Expanding

Intelligent Classification
- Classification

Retrieval of Structured Data From PDF
- Inferring
- Transforming

Intelligent web scraping
- Inferring
- Summarising
- Classification



Content generation at scale

Example scenario: You like to send emails to various recipients to invite them for an event. You want to personalize each of them so that the email feels more personal.

What most companies would do today:

- Manually craft emails for each recipients

What OpenAI API can do:

- Automatically create emails based on features you have provided for each recipient.

Intelligent Classification

Example scenario: You have a list of company expenses, and you would like to categorise your expenses

What most companies would do today:

- Hire finance executives to look through expense items to manually categorise payments

What OpenAI API can do:

- Intelligently categorise expenses to a defined set of expenses

Retrieval From PDF Files

Example scenario: You have a folder of invoices sent to you by different suppliers with different invoice formats

What most companies would do today:

- Hire finance executives to look through invoices and manually enter cost items into accounting systems

What OpenAI API can do:

- Intelligently extract important items from PDFs and structure them nicely into structured data

Intelligent Web Scraping

Example scenario: You have a list of websites to read everyday to identify topics that you need to highlight to stakeholders. E.g. Epidemic analysis

Approach to this scenario today

- **Manually visit websites, scroll and find topics of interest**
- **Long, tedious process**

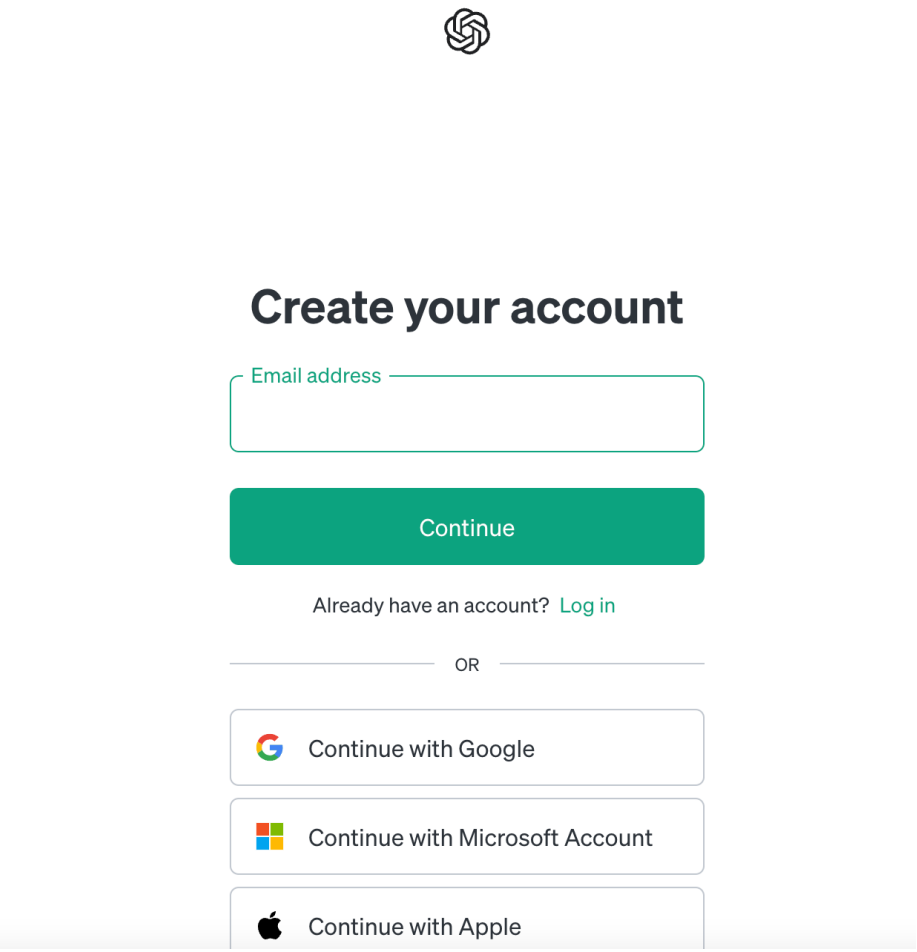
What OpenAI API can do:

- Identify relevant topics of your interest and present it in a structured data for you

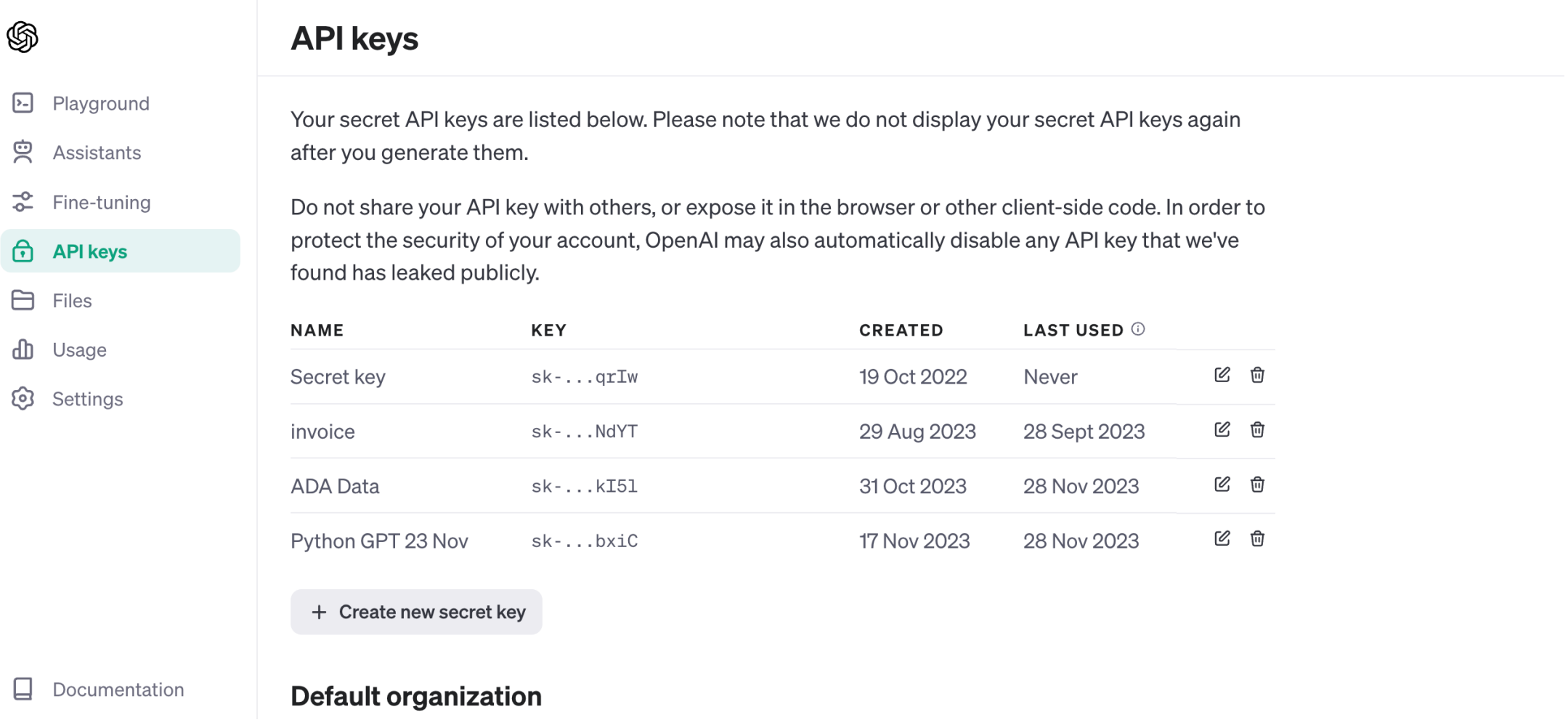
How to get the OpenAI API Key

Appendix

Sign up for an account at https://platform.openai.com/signup

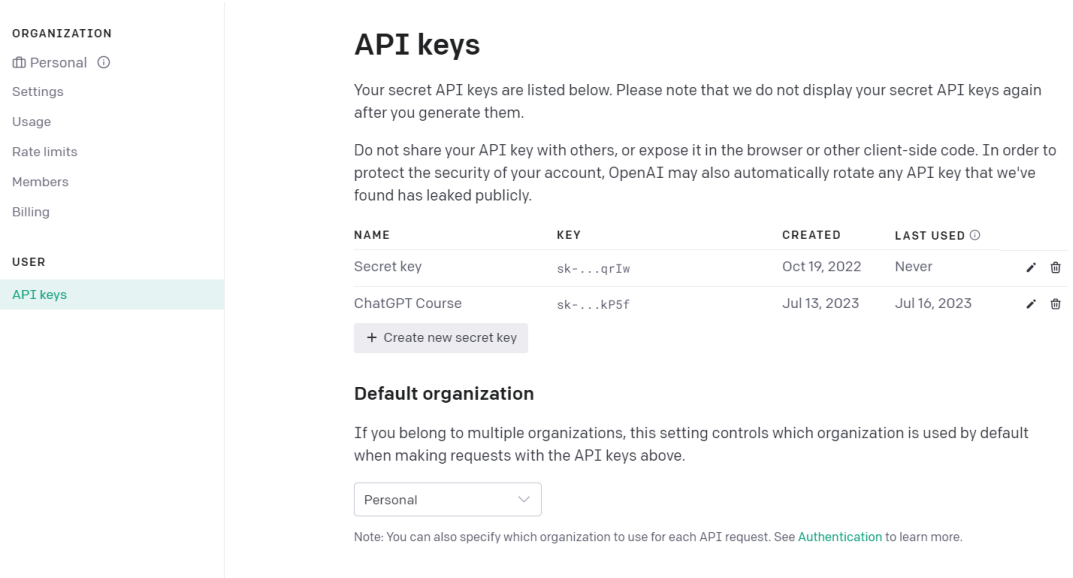


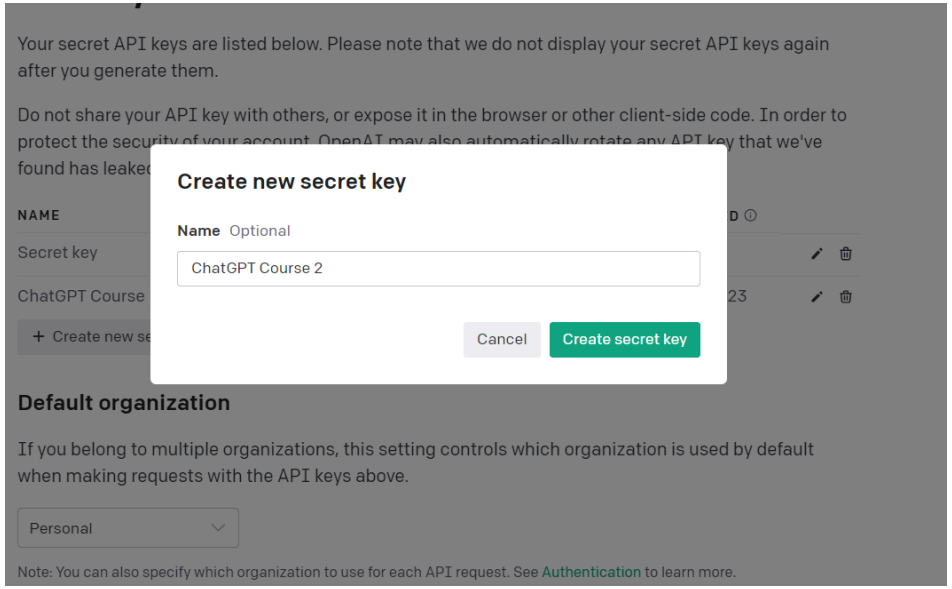
Go to https://platform.openai.com/api-keys and create a new secret key. Add your payment methods to this account.



Once your account is a paid account, go to API keys to create a new API key by pressing on “Create new secret key”.

A secret key will be presented to you. Keep this key securely.





Replace the api_key argument with the API Key that you just received from the portal

```
!pip install openai
from openai import OpenAI
client = OpenAI(api_key="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")
```

```
Collecting openai
  Downloading openai-1.3.5-py3-none-any.whl (220 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 220.8/220.8 kB 4.6 MB/s eta 0:00:00
Requirement already satisfied: anyio<4,>=3.5.0 in /usr/local/lib/python3.10/dist-packages (from opena
Requirement already satisfied: distro<2,>=1.7.0 in /usr/lib/python3/dist-packages (from openai) (1.7.
```

Course Evaluation – Course Type: SZCPY11