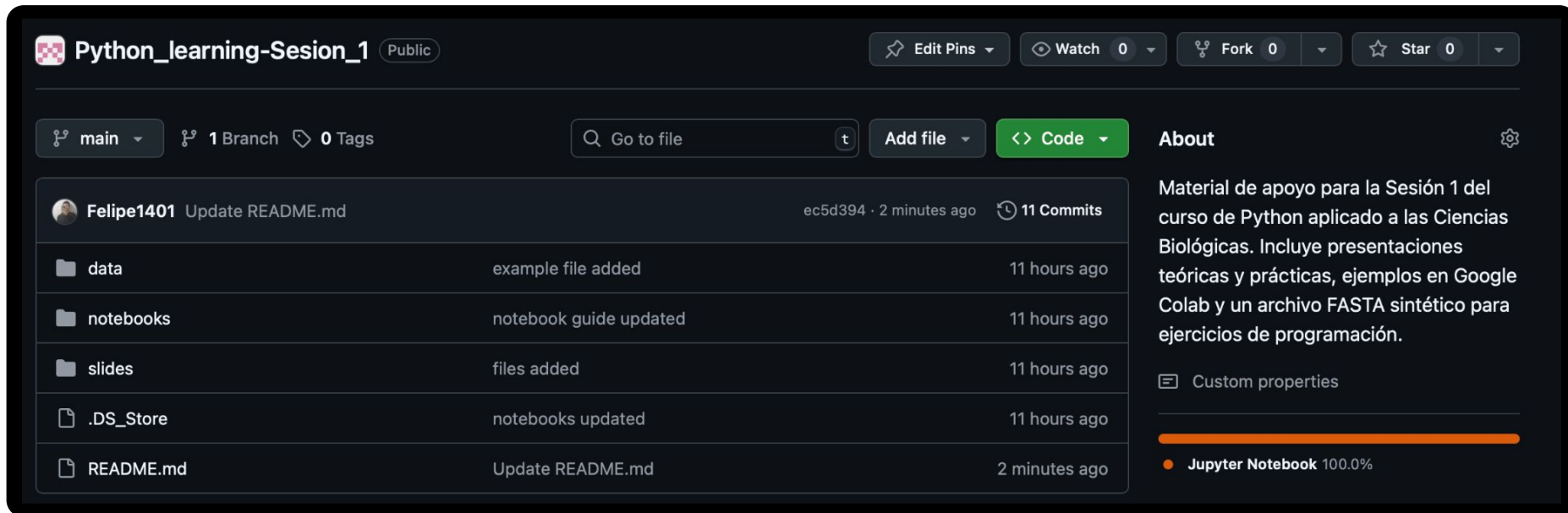




Sesión 1 – Fundamentos de **Python** para **Ciencias Biológicas**

Módulo Práctico
22-08-25

Material en GitHub



The screenshot shows the GitHub interface for the repository 'Python_learning-Sesion_1'. At the top, there are buttons for 'Edit Pins', 'Watch' (0), 'Fork' (0), and 'Star' (0). Below this, the repository is set to the 'main' branch with 1 branch and 0 tags. A search bar and 'Add file' button are present. The commit history shows a recent update to 'README.md' by Felipe1401. The file list includes 'data', 'notebooks', 'slides', '.DS_Store', and 'README.md'. The 'About' section describes the repository as support material for a Python course, including presentations, examples, and a FASTA file. A progress bar indicates that the 'Jupyter Notebook' environment is 100.0% ready.

Python_learning-Sesion_1 Public

Edit Pins Watch 0 Fork 0 Star 0

main 1 Branch 0 Tags

Go to file Add file <> Code

Felipe1401 Update README.md ec5d394 · 2 minutes ago 11 Commits

data	example file added	11 hours ago
notebooks	notebook guide updated	11 hours ago
slides	files added	11 hours ago
.DS_Store	notebooks updated	11 hours ago
README.md	Update README.md	2 minutes ago

About

Material de apoyo para la Sesión 1 del curso de Python aplicado a las Ciencias Biológicas. Incluye presentaciones teóricas y prácticas, ejemplos en Google Colab y un archivo FASTA sintético para ejercicios de programación.

Custom properties

Jupyter Notebook 100.0%

https://github.com/AGENslab/Python_learning-Sesion_1



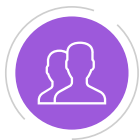
¿Qué es **GitHub** ?



Host de repositorios
para almacenar proyectos



Gestión de proyectos
utilizando Git



Colaboración
entre desarrolladores
de todo el mundo



Plataforma gratuita
para todos



Agiliza trabajo al
contar con herramientas
de revisión de código



**Y muchas ventajas
más!** cómo asistencia
por IA (Github Copilot)





¿ Qué es Google Colab ?



Jupyter Notebooks

archivos con bloques de código y de texto



Permite ejecutar **Python** en **Navegador Web**



Usa **archivos .ipynb** para guardar la información de los notebooks



Plataforma gratuita

con opción de premium



Especializado en análisis de datos y **Aprendizaje automático**



Hardware optimizado

de uso remoto, como GPUs



¿ Cómo funciona Google Colab ?

En los bloques de códigos podemos **ejecutar** python.

Además, es posible ejecutar **comandos de la terminal** dentro de estos bloques de código con el símbolo "!" al inicio.

✓
0s



```
for i in range(3):  
    print("Phyto_learning!")
```



```
Phyto_learning!  
Phyto_learning!  
Phyto_learning!
```

✓
0s



```
1 !ls ../
```



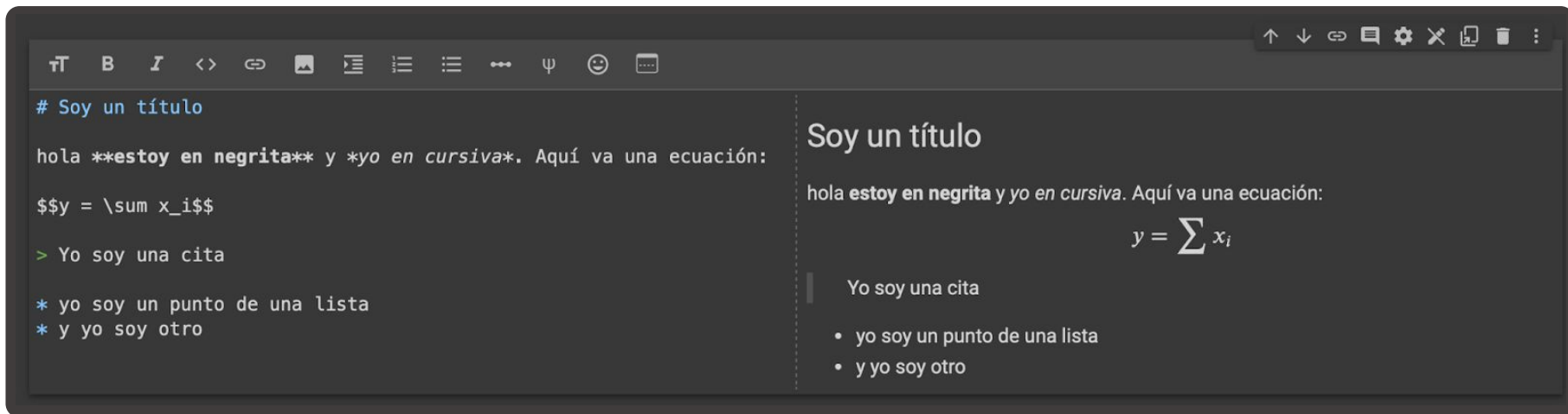
```
bin  
boot  
content
```

```
datalab  kaggle  
dev      lib  
etc      lib32
```



¿Cómo funciona Google Colab?

> En los bloques de texto utilizamos un sistema de lenguaje que le da formato al texto llamado **Markdown**, el cual nos permite poner títulos, listas, citas, ecuaciones entre otros.



The screenshot displays the Google Colab interface with a code editor on the left and a preview on the right. The code editor contains the following Markdown text:

```
# Soy un título

hola **estoy en negrita** y *yo en cursiva*. Aquí va una ecuación:


$$y = \sum x_i$$


> Yo soy una cita

* yo soy un punto de una lista
* y yo soy otro
```

The preview on the right shows the rendered output of this Markdown:

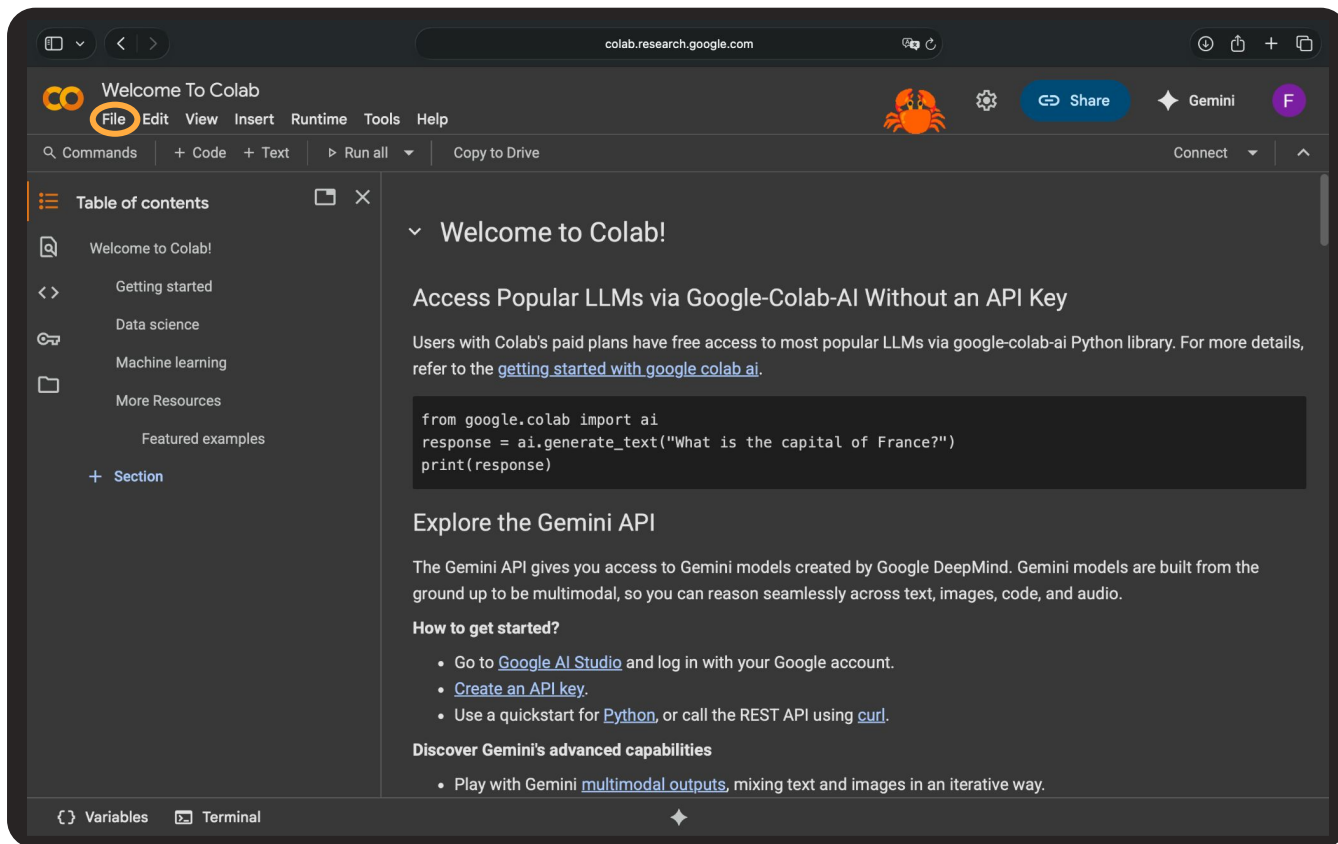
- Soy un título
- hola **estoy en negrita** y *yo en cursiva*. Aquí va una ecuación:
- $$y = \sum x_i$$
- Yo soy una cita
- yo soy un punto de una lista
- y yo soy otro

*Notar que las ecuaciones funcionan con LaTeX.

* Para más detalles ver esta [Guía sobre Markdown](#).



Abrir un Google Colab



The screenshot shows the Google Colab web interface in a browser. The address bar displays `colab.research.google.com`. The top navigation bar includes the Colab logo, a menu with **File** (highlighted with an orange circle), **Edit**, **View**, **Insert**, **Runtime**, **Tools**, and **Help**. To the right of the menu are icons for a crab, settings, a **Share** button, and a **Gemini** icon. Below the menu is a search bar and tabs for **Commands**, **+ Code**, **+ Text**, **Run all**, and **Copy to Drive**. On the left sidebar, there is a **Table of contents** panel with links to **Welcome to Colab!**, **Getting started**, **Data science**, **Machine learning**, **More Resources**, and **Featured examples**. The main content area displays a **Welcome to Colab!** message, followed by a section titled **Access Popular LLMs via Google-Colab-AI Without an API Key**. This section explains that users with Colab's paid plans have free access to most popular LLMs via the `google-colab-ai` Python library. Below this text is a code block containing the following Python code:

```
from google.colab import ai
response = ai.generate_text("What is the capital of France?")
print(response)
```

Further down, there is a section titled **Explore the Gemini API**, which states that the Gemini API provides access to Gemini models created by Google DeepMind. It also includes a **How to get started?** section with three bullet points:

- Go to [Google AI Studio](#) and log in with your Google account.
- [Create an API key](#).
- Use a quickstart for [Python](#), or call the REST API using [curl](#).

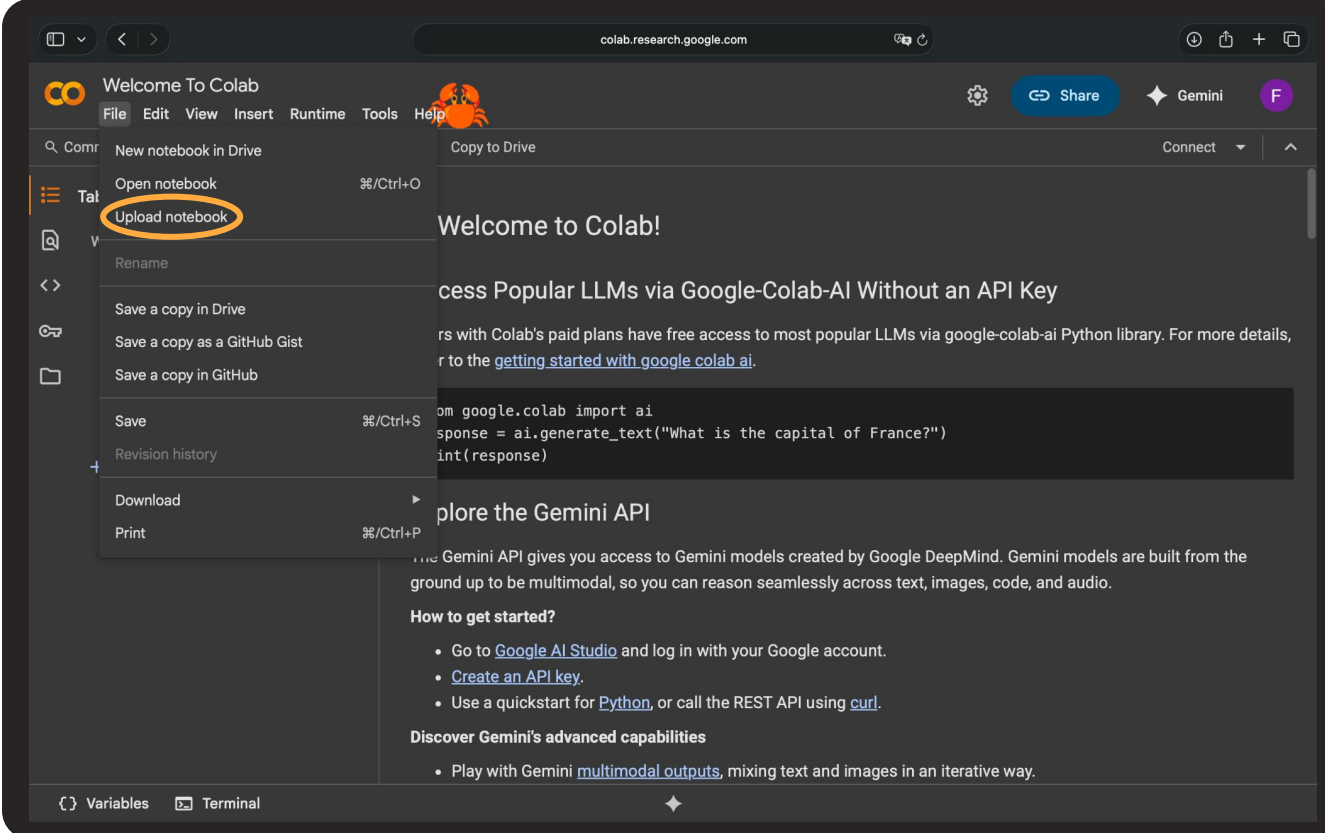
At the bottom, there is a **Discover Gemini's advanced capabilities** section with one bullet point:

- Play with Gemini [multimodal outputs](#), mixing text and images in an iterative way.

The bottom of the interface shows tabs for **Variables** and **Terminal**.



Abrir un Google Colab



The screenshot shows the Google Colab web interface in a browser window. The address bar displays `colab.research.google.com`. The interface includes a top navigation bar with the Colab logo, a menu bar (File, Edit, View, Insert, Runtime, Tools, Help), and buttons for 'Share', 'Gemin', and a user profile icon. On the left, a sidebar contains icons for 'Table of contents', 'Recent notebooks', 'History', and 'Files'. The 'File' menu is open, and the 'Upload notebook' option is circled in orange. The main workspace area displays a 'Welcome to Colab!' message and a code snippet for using the Gemini API. The bottom status bar shows 'Variables' and 'Terminal' tabs.

colab.research.google.com

Welcome To Colab

File Edit View Insert Runtime Tools Help

Search Command

- New notebook in Drive
- Open notebook %/Ctrl+O
- Upload notebook**
- Rename
- Save a copy in Drive
- Save a copy as a GitHub Gist
- Save a copy in GitHub
- Save %/Ctrl+S
- Revision history
- Download
- Print %/Ctrl+P

Copy to Drive

Connect

Welcome to Colab!

Access Popular LLMs via Google-Colab-AI Without an API Key

Users with Colab's paid plans have free access to most popular LLMs via google-colab-ai Python library. For more details, see the [getting started with google colab ai](#).

```
from google.colab import ai
response = ai.generate_text("What is the capital of France?")
print(response)
```

Explore the Gemini API

The Gemini API gives you access to Gemini models created by Google DeepMind. Gemini models are built from the ground up to be multimodal, so you can reason seamlessly across text, images, code, and audio.

How to get started?

- Go to [Google AI Studio](#) and log in with your Google account.
- [Create an API key](#).
- Use a quickstart for [Python](#), or call the REST API using [curl](#).

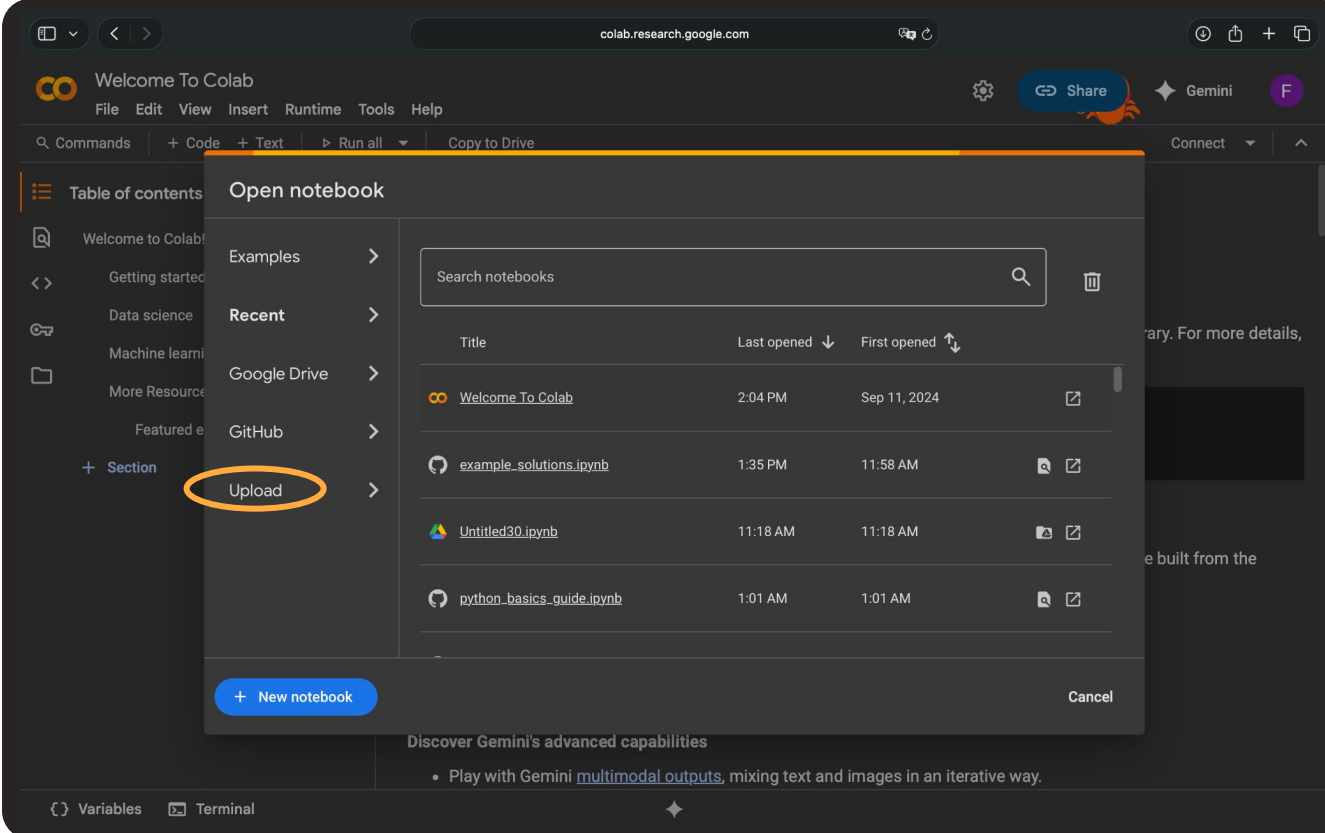
Discover Gemini's advanced capabilities

- Play with Gemini [multimodal outputs](#), mixing text and images in an iterative way.

Variables Terminal



Abrir un Google Colab



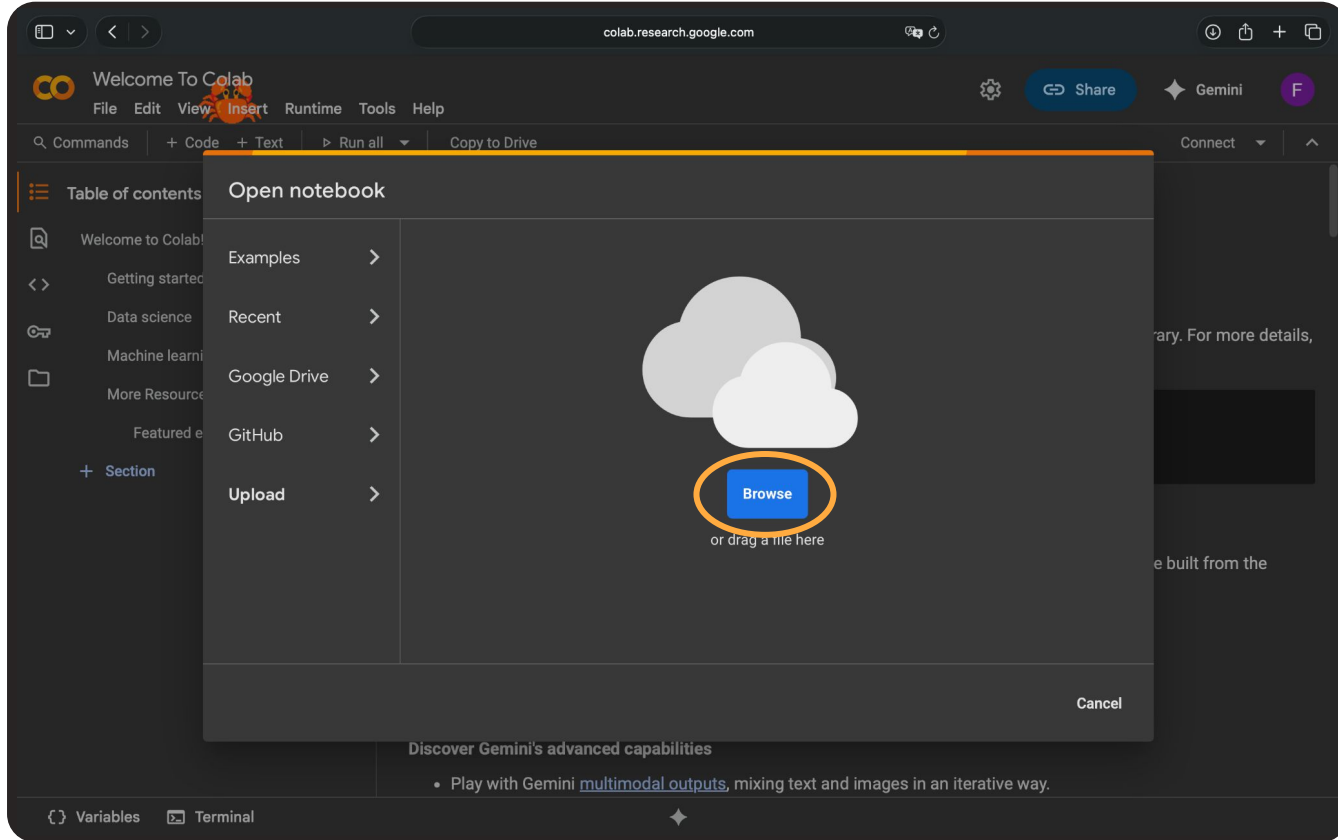
The screenshot shows the Google Colab web interface. The 'Open notebook' dialog box is open, displaying a list of notebooks. The 'Upload' option in the left sidebar is highlighted with an orange circle. The list of notebooks includes:

Title	Last opened	First opened
Welcome To Colab	2:04 PM	Sep 11, 2024
example_solutions.ipynb	1:35 PM	11:58 AM
Untitled30.ipynb	11:18 AM	11:18 AM
python_basics_guide.ipynb	1:01 AM	1:01 AM

At the bottom of the dialog box, there is a '+ New notebook' button and a 'Cancel' button. The background interface shows the 'Welcome To Colab' header and a sidebar with options like 'Table of contents', 'Welcome to Colab', 'Getting started', 'Data science', 'Machine learning', 'More Resources', 'Featured examples', and 'Section'.



Abrir un Google Colab



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