Google Colaboratory , or Google Colab for short, is a free, cloud-based Jupyter Notebook environment provided by Google . It allows users to write and execute Python code through the browser, especially suited for machine learning , data analysis , and education . Google Colab provides an online integrated development environment (IDE) for Python that requires no setup and runs entirely in the cloud. It offers free access to computing resources, including GPUs and TPUs , making it popular among researchers and students working on deep learning and data science projects.

Features

Supports Python 3

Built on top of Jupyter Notebook

Free access to limited GPU / TPU computing resources

Integration with Google Drive for saving and loading notebooks

Ability to share notebooks like Google Docs

Multiple users can collaborate and work on the same document at the same time

Compatible with popular machine learning libraries such as TensorFlow , PyTorch , and scikit-learn

Limitations

Idle timeouts and session limits

Limited access to high-performance hardware without a paid subscription

See also

Amazon SageMaker

CoCalc — does Jupyter notebooks , Markdown , LaTeX , RMarkdown , Linux terminal , SageMath , GNU Octave .

Firebase Studio and Google Cloud Shell – other online IDEs from Google

GitHub Codespaces

Kaggle — Kaggle Notebooks

List of online integrated development environments

List of online educational resources

List of Python software

References