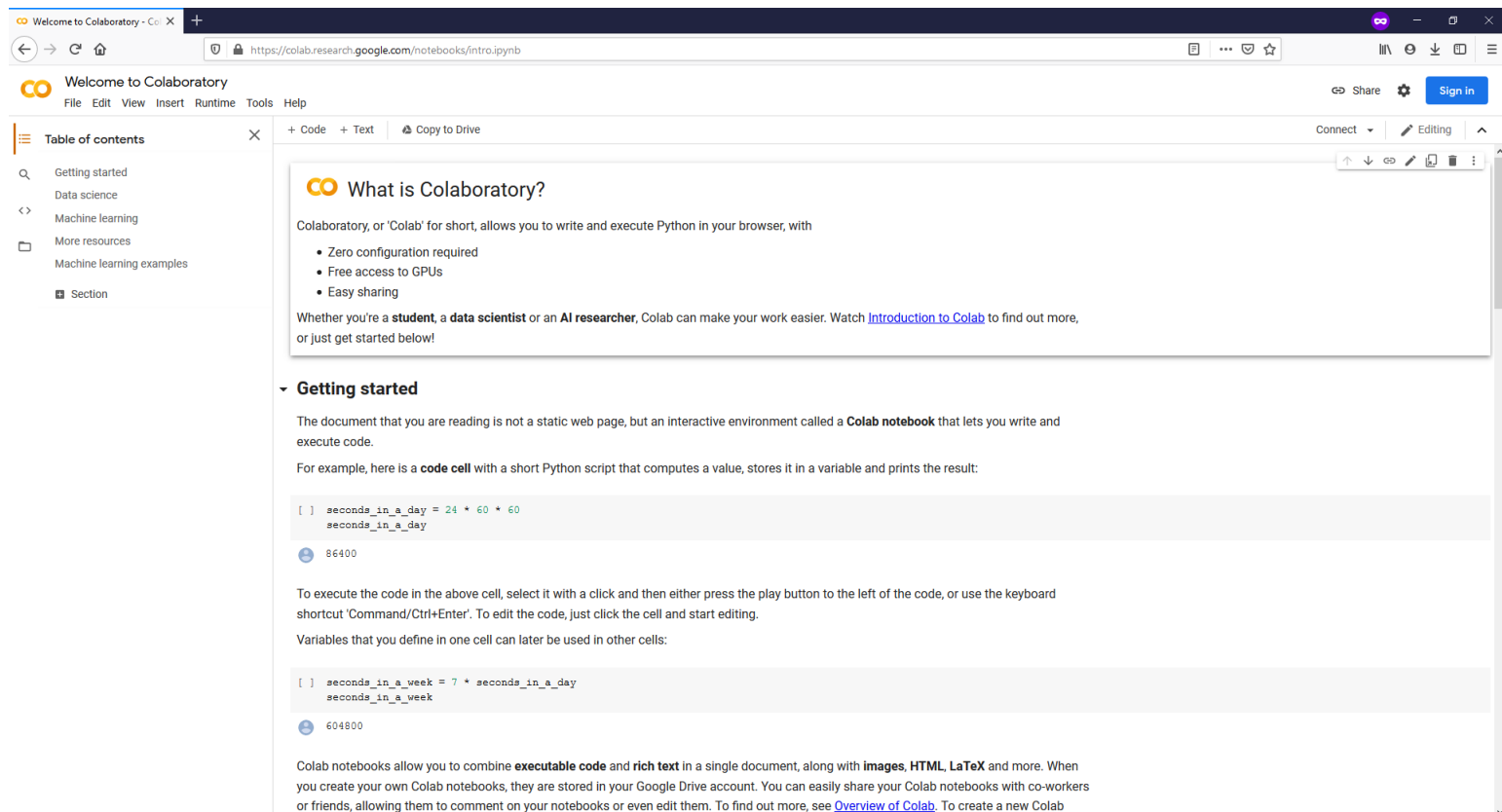


Google Colab (<https://colab.research.google.com>) is ideal for numerical work from your browser. It comes preinstalled with useful packages in Python, such as Numpy and Tensorflow. This reduces the need to deal with dependencies across systems and allows for an easy environment for learning.



Welcome to Colaboratory

File Edit View Insert Runtime Tools Help

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- Getting started
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What is Colaboratory?

Colaboratory, or 'Colab' for short, allows you to write and execute Python in your browser, with

- Zero configuration required
- Free access to GPUs
- Easy sharing

Whether you're a **student**, a **data scientist** or an **AI researcher**, Colab can make your work easier. Watch [Introduction to Colab](#) to find out more, or just get started below!

Getting started

The document that you are reading is not a static web page, but an interactive environment called a **Colab notebook** that lets you write and execute code.

For example, here is a **code cell** with a short Python script that computes a value, stores it in a variable and prints the result:

```
[ ] seconds_in_a_day = 24 * 60 * 60
    seconds_in_a_day
```

86400

To execute the code in the above cell, select it with a click and then either press the play button to the left of the code, or use the keyboard shortcut 'Command/Ctrl+Enter'. To edit the code, just click the cell and start editing.

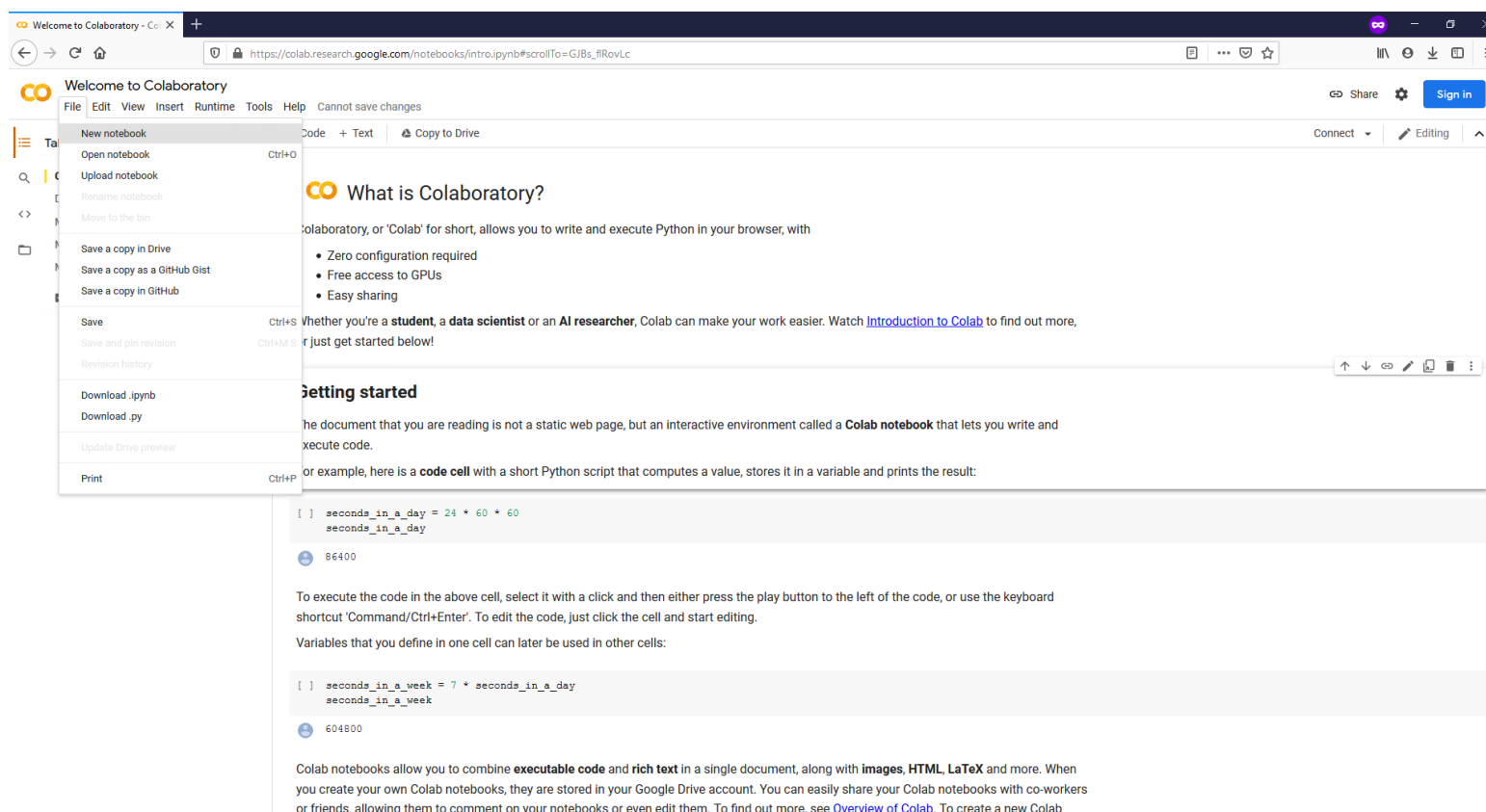
Variables that you define in one cell can later be used in other cells:

```
[ ] seconds_in_a_week = 7 * seconds_in_a_day
    seconds_in_a_week
```

604800

Colab notebooks allow you to combine **executable code** and **rich text** in a single document, along with **images**, **HTML**, **LaTeX** and more. When you create your own Colab notebooks, they are stored in your Google Drive account. You can easily share your Colab notebooks with co-workers or friends, allowing them to comment on your notebooks or even edit them. To find out more, see [Overview of Colab](#). To create a new Colab

To open a new notebook, you can go to File-> New Notebook and you're done.



Welcome to Colaboratory

File Edit View Insert Runtime Tools Help Cannot save changes

File menu options:

- New notebook
- Open notebook
- Upload notebook
- Rename notebook
- Move to the bin
- Save a copy in Drive
- Save a copy as a GitHub Gist
- Save a copy in GitHub
- Save
- Save and pin revision
- Revision history
- Download .ipynb
- Download .py
- Update Drive preview
- Print

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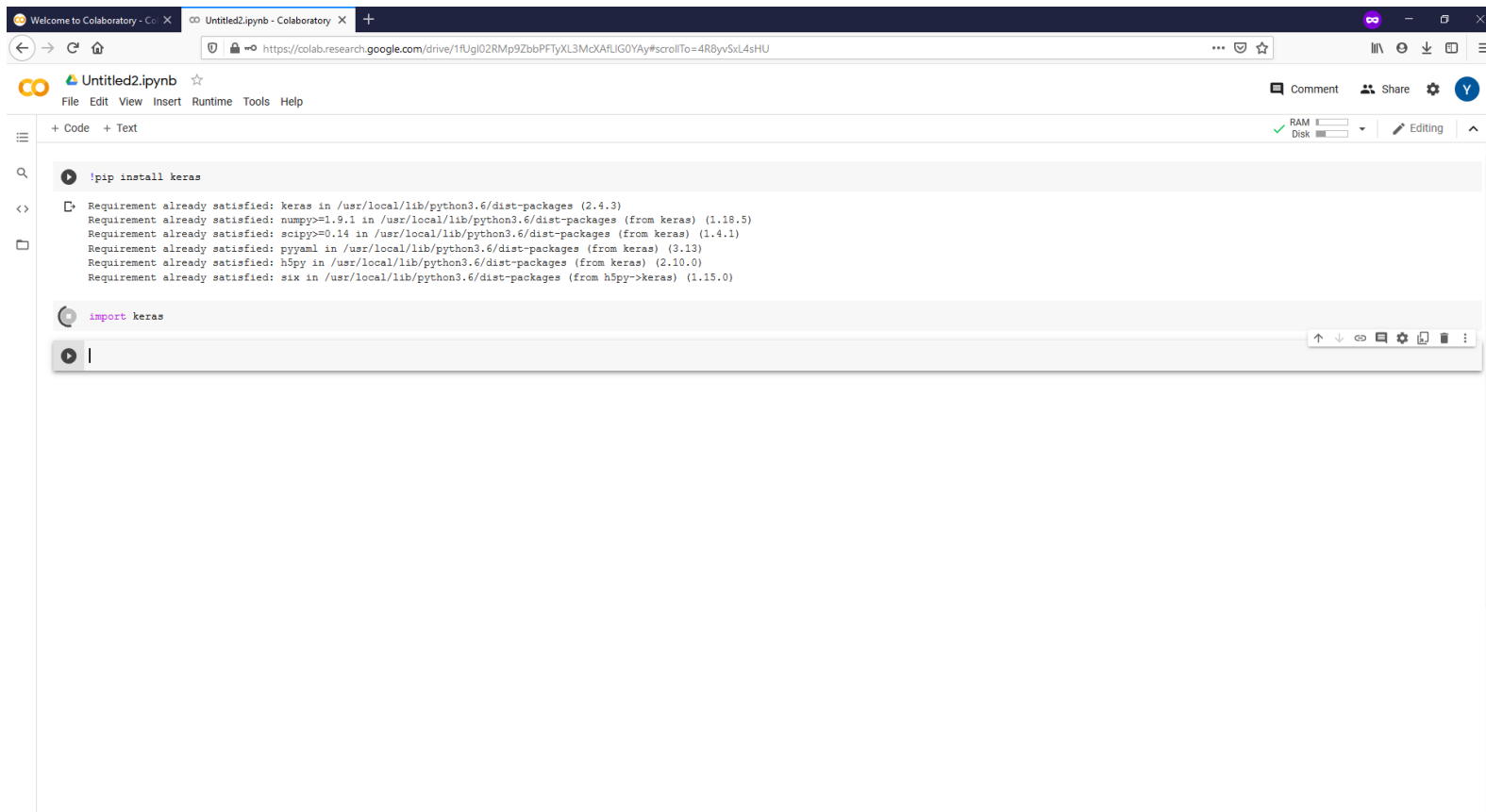
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All packages / libraries needed for the course should already be installed on Colab by default. However, if you do find anything missing, these can be installed with the command `!pip install package` as can be found below. Feel free to ask me (Yiannis Simillides) in during the tutorial if you need any further help, but it should be fairly straightforward.



The screenshot shows a Google Colaboratory notebook interface. The browser address bar displays the URL: <https://colab.research.google.com/drive/1fUgl02RMp9ZbbPFTyXL3McXAfUG0YAy#scrollTo=4R8yv5xL4sHU>. The notebook is titled "Untitled2.ipynb". The code editor shows two cells. The first cell contains the command `!pip install keras` and its output, which lists several requirements already satisfied in the environment. The second cell contains the command `import keras`. The interface includes a menu bar (File, Edit, View, Insert, Runtime, Tools, Help), a toolbar with icons for code and text, and a status bar at the bottom right showing RAM and disk usage.

```
!pip install keras
```

```
Requirement already satisfied: keras in /usr/local/lib/python3.6/dist-packages (2.4.3)
Requirement already satisfied: numpy>=1.9.1 in /usr/local/lib/python3.6/dist-packages (from keras) (1.18.5)
Requirement already satisfied: scipy>=0.14 in /usr/local/lib/python3.6/dist-packages (from keras) (1.4.1)
Requirement already satisfied: pyyaml in /usr/local/lib/python3.6/dist-packages (from keras) (3.13)
Requirement already satisfied: h5py in /usr/local/lib/python3.6/dist-packages (from keras) (2.10.0)
Requirement already satisfied: six in /usr/local/lib/python3.6/dist-packages (from h5py->keras) (1.15.0)
```

```
import keras
```