

# Installing Python and Google App Engine

## TLDR Version

This summer school involves hosting and running your own online experiments. We'll be walking you through hosting it on the Google App Engine server. In order to save time on the day, you should make sure you have the Google Cloud SDK (Python Standard Environment) installed on your laptop, along with python 2.7.x (where x=9 or higher). If you have those installed already then that's all you need to know!

## Extended Version

In the summer school we'll be working through an example of how to build, test and deploy your own online experiment. We'll be making use of Google App Engine (one piece of a larger online ecosystem know as the Google Cloud Platform).

We'll be learning a fairly simple process which can be seen as three distinct phases. Phase 1 involves building and testing your experiment on your own machine. Phase 2 involves deploying your experiment to Google App Engine. Phase 3 involves running your experiment and downloading the data that you have collected.

Phases 1 and 2 will require you to have some software installed on your laptop. So that you can make better use of your time on the day, it's a good idea to get this setup work done beforehand. Of course, if you do have problems we'll be able to help you out in class.

The software you'll need to install is called the (Google) Cloud SDK. (SDK = "Software Development Kit"). The SDK comes in many flavours, but we'll be using what's referred to as the "Python Standard Environment". A link to the SDK install instructions is given below (see "Installing Google Cloud SDK"). But before you race ahead, its worth drawing your attention to step one in the instructions which is about getting python installed. There can be some gotchas, so in what follows I'll provide a bit more detail.

## Installing Python

Currently, there are two major versions of python in use: python 2 and python 3. Sadly, they are not completely compatible. At the present time (though this will change) the Python Standard Environment for Google App Engine requires python 2. Specifically, you need to make sure that you end up with python version 2.7.x (where x=9 or higher) installed.

Below are some tips for Windows and MacOS users. You linux people have probably just finished re-compiling your kernel so that you can mine bitcoin directly on your over-clocked GPU - you don't need my help :)

## On Windows

To check whether you have the correct version installed already (some of you will have) you can try the following:

1. Open the “Command Prompt”
2. At the prompt enter the following command:

```
C:/users/alice> python --version
```

If you see something like this:

```
C:/users/alice> python --version
“python” is not recognised as an internal or external command
```

Then either you don’t have python installed - in which case read on - or you have already tried to install it but it is not configured properly. The official python install docs (<https://docs.python.org/2/using/windows.html>) have a section on configuring your “path” (Section 3.3.1) that can help you out in this regard.

If instead, you see something like:

```
C:/users/alice> python --version
Python 3.6.0
```

You do have python installed, but not version 2. So you’ll still need to install python 2.7.9 or (if it is already installed) make sure it’s on your “path”

If you’re in luck you’ll see:

```
C:/users/alice> python --version
Python 2.7.14
```

Or something similar - anything that starts with 2.7 and where the last number is 9 or above should be good enough.

So if you need to install Python 2.7 or just want to make sure that you have the latest version of the 2.7.x stream then you can download it from here:

<https://www.python.org/downloads/release/python-2715/>

Scroll down on that page and choose the installer that matches your system. If you run into problems check the official install docs for version 2:

<https://docs.python.org/2/using/windows.html>

Once you’ve installed it you can use the above procedure (python --version) to make sure that things are correctly installed.

## On Mac

Python 2 is installed by default on recent versions of MacOS, so you're probably good to go (in theory). But, theory and practice can sometimes diverge, so it's still worth checking, as follows:

1. Open the "Terminal" application
2. At the prompt enter the following command:

```
MacDougal:/home/bob$ python --version
```

Most of you should see something like:

```
MacDougal:/home/bob$ python --version
Python 2.7.14
```

(any version 2.7.x where x=9 or higher is fine).

If instead, you see:

```
MacDougal:/home/bob$ python --version
Python 3.6.0
```

You have a version of python 3 installed that is essentially "masking" python 2. If this is the case, chances are that you put it there yourself, and you'll be comfortable with getting python 2.7 on your path.

Regardless, if you need to install Python 2.7 or just want to make sure that you have the latest version of the 2.7.x stream then you can download it from here:

<https://www.python.org/downloads/release/python-2715/>

Scroll down on that page and choose the installer that matches your system. If you run into problems check the official install docs for version 2:

<https://docs.python.org/2/using/mac.html>

Once you've installed it you can use the above procedure ("python --version") to make sure that things are correctly installed.

## Installing Google Cloud SDK

Now that we've dealt with the python issues, you can go ahead and install the Cloud SDK. I believe this will require a Google account; if you don't have one, you can get one free as described here:

<https://support.google.com/mail/answer/56256?hl=en>

Once you have a Google account, the install instructions for the SDK are found here:

<https://cloud.google.com/appengine/docs/standard/python/download>

Note that you've already done the first step (Python) so you can start on Step 2. Also, you don't need to install the optional libraries if you don't want to.

Be sure to follow all of the installation steps! They should involve at some point clicking on an install icon or invoking `install.sh` from the command line.

If you're curious to learn more about the Python Standard Environment, just look to the left hand side of the page when you visit the above link. You'll see the install instructions are just one page amongst many on the topic.