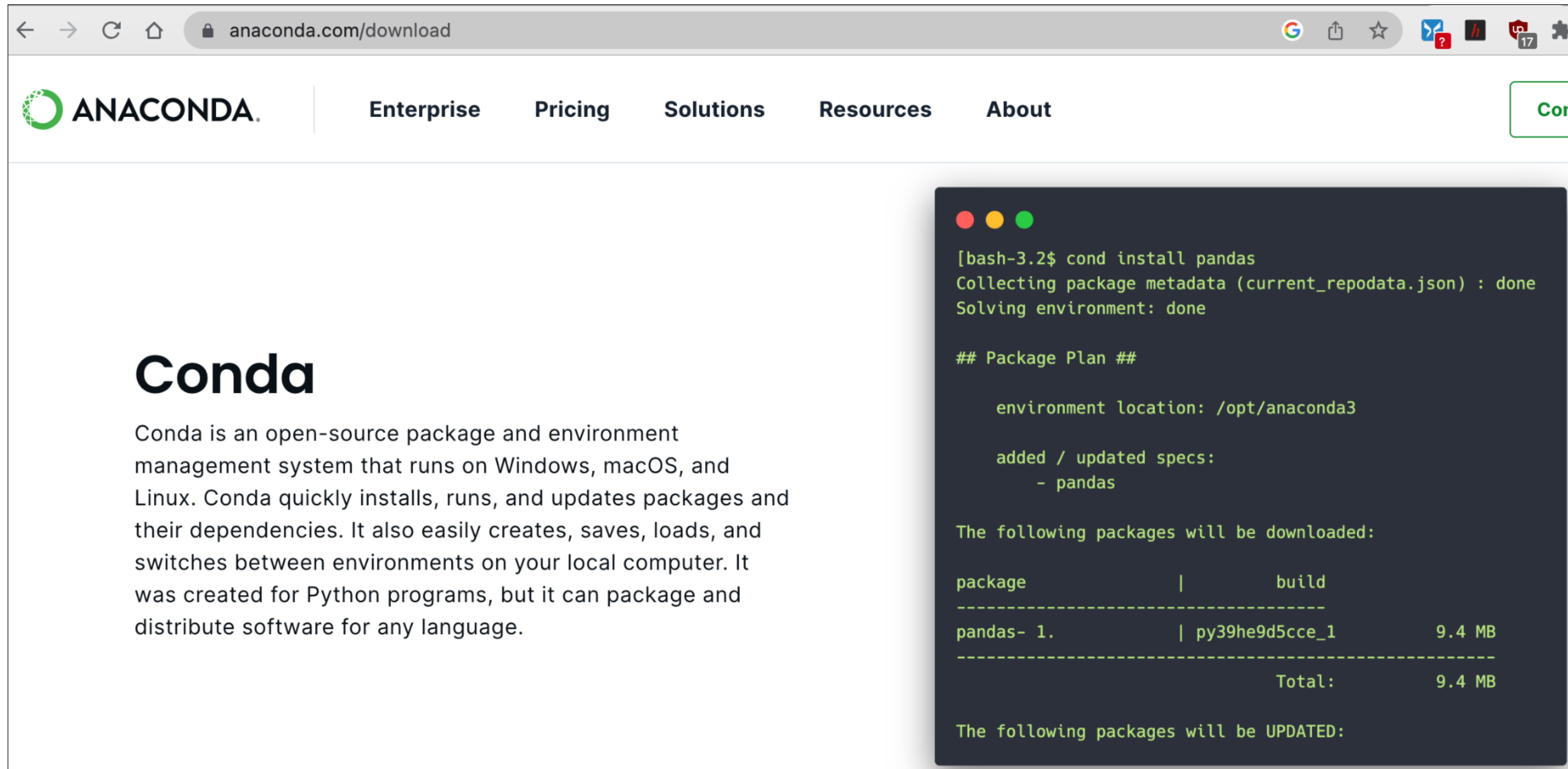# Setup and Installation of Python and Jupyter Notebooks

Setup and Installation

- Install Conda

- Download course materials

- Create environment for the course

- Initialize the environment

- Start Jupyter Notebook kernel

Conda

Conda

Conda is an open-source package and environment management system that runs on Windows, macOS, and Linux. Conda quickly installs, runs, and updates packages and their dependencies. It also easily creates, saves, loads, and switches between environments on your local computer. It was created for Python programs, but it can package and distribute software for any language.

```
[bash-3.2$ cond install pandas
Collecting package metadata (current_repodata.json) : done
Solving environment: done

## Package Plan ##

    environment location: /opt/anaconda3

    added / updated specs:
        - pandas

The following packages will be downloaded:

package              |           build
---------------------------------------
pandas- 1.           | py39he9d5cce_1        9.4 MB
---------------------------------------
                           Total:         9.4 MB

The following packages will be UPDATED:
```

Conda: create environment

- Download the course repository

- Open a terminal (or use the anaconda prompt) and create a python environment for this course from the environment.yml file in the repository

- Change directories to the root for the course materials you just downloaded

```
(base)/Users/summer$ cd blackhat_2023
```

- Run the following to create a conda environment based on the yml file

```
(base)/…/blackhat_2023$ conda env create -f environment.yml
```

- This created a conda environment called gtk-blackhat

Conda: environment.yml

```yaml
1    name: gtk-python
2    channels:
3       - defaults
4    dependencies:
5       - python=3.11
6       - pandas
7       - matplotlib
8       - seaborn
9       - jupyter
```

Conda: activate environment

```
(base)/…/blackhat_2023$
```

Note: The name of the current environment for this window is in parens.

- Initialize/activate the gtk-blackhat environment

```
(base)/…/blackhat_2023$ conda activate gtk-blackhat
```

- Now the environment for this window is gtk-blackhat which contains Python 3 along with some third party libraries

```
(gtk-blackhat)/…/blackhat_2023$
```

Conda: list environments

If you forgot what you named your environments you can list them

```
(base)/…/blackhat_2023$ conda env list

# conda environments:
#
base    *   /Users/summer/opt/anaconda3
env_py3                 /Volumes/ext200/opt/anaconda3/envs/env_py3
gtk-python              /Volumes/ext200/opt/anaconda3/envs/gtk-python
nlpBase                 /Volumes/ext200/opt/anaconda3/envs/nlpBase
pymc_env                /Volumes/ext200/opt/anaconda3/envs/pymc_env
```

Conda: deactivate environment

deactivate the gtk-blackhat environment

```
(gtk-blackhat)/…/blackhat_2023$ conda deactivate
```

Now the environment is base

```
(base)/…/blackhat_2023$
```

Jupyter: start server

Start a Jupyter Notebook server by typing the following (after you have started the gtk-blackhat environment

```
(gtk-blackhat)/…/blackhat_2023$ jupyter notebook
```

Once it is started, you will see a link to the notebook that will look something like

```
http://localhost:8888/?token=09ees....
```