

```
pi@raspberrypi:~ $ pip3 -V
pip 18.1 from /usr/lib/python3/dist-packages/pip (python 3.7)
```

```
pi@raspberrypi:~ $ pip3 list
```

Package	Version
absl-py	1.0.0
asn1crypto	0.24.0
astor	0.8.1
astroid	2.1.0
asttokens	1.1.13
attrs	21.4.0
automationhat	0.2.0
backcall	0.2.0
beautifulsoup4	4.7.1
blinker	1.4
blinky	0.1.2
buttonshim	0.0.2
cached-property	1.5.2
cachetools	4.2.4
Caplxxx	0.1.3
certifi	2018.8.24
chardet	3.0.4
Click	7.0
colorama	0.3.7
colorzero	1.1
cookies	2.2.1
cryptography	2.6.1
cupshelpers	1.0
cycler	0.10.0
Cython	0.29.28
decorator	4.3.0
dill	0.3.4
dlx	1.0.4
docplex	2.23.222
docutils	0.14
drumhat	0.1.0
entrypoints	0.3
envirophat	1.0.0
ExplorerHAT	0.4.2
fastdtw	0.3.4
fastjsonschema	2.15.3
Flask	1.0.2
fourletterphat	0.1.0
gast	0.2.2
google-auth	1.35.0
google-auth-oauthlib	0.4.6
google-pasta	0.2.0
gpiozero	1.5.1
grpcio	1.46.1
h5py	3.6.0
html5lib	1.0.1
httplib2	0.20.4
idna	2.6
importlib-metadata	4.11.3
importlib-resources	5.7.1
inflection	0.5.1
isort	4.3.4
itsdangerous	0.24
jedi	0.13.2
Jinja2	2.10
joblib	1.1.0
jsonschema	4.5.1
Keras	2.3.1
Keras-Applications	1.0.8
Keras-Preprocessing	1.1.2
keyring	17.1.1

pysmbc	1.0.15.6
python-apt	1.8.4.3
python-constraint	1.4.0
python-dateutil	2.8.2
pytz	2019.1
pyxdg	0.25
PyYAML	6.0
qiskit-aer	0.7.1
qiskit-aqua	0.8.1
qiskit-ibmq-provider	0.11.1
qiskit-ignis	0.5.1
qiskit-terra	0.16.1
Quandl	3.7.0
rainbowhat	0.1.0
regex	2022.4.24
reportlab	3.5.13
requests	2.21.0
requests-ntlm	1.1.0
requests-oauthlib	1.0.0
responses	0.9.0
retworkx	0.11.0
roman	2.0.0
RPi.GPIO	0.7.0
rsa	4.8
RTIMULib	7.2.1
scikit-learn	1.0.2
scipy	1.1.0
scrollphat	0.0.7
scrollphathd	1.2.1
seaborn	0.11.2
SecretStorage	2.3.1
semantic-version	2.9.0
Send2Trash	1.5.0
sense-hat	2.2.0
setuptools	62.2.0
setuptools-rust	1.3.0
simplejson	3.16.0
six	1.12.0
skywriter	0.0.7
sn3218	1.2.7
soupsieve	1.8
spidev	3.4
ssh-import-id	5.7
sympy	1.10.1
tables	3.4.4
tensorboard	2.0.2
tensorflow	1.14.0
tensorflow-estimator	1.14.0
termcolor	1.1.0
thonny	3.3.6
threadpoolctl	3.1.0
touchphat	0.0.1
traitlets	5.2.0
twython	3.7.0
typed-ast	1.3.1
typing-extensions	4.2.0
unicornhathd	0.0.4
urllib3	1.24.1
wcwidth	0.2.5
webencodings	0.5.1
websockets	10.3
Werkzeug	0.14.1
wheel	0.32.3
wrapt	1.14.1
yfinance	0.1.70
zipp	3.8.0

```
pi@raspberrypi:~$ sudo pip3 install -U setuptools
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Requirement already up-to-date: setuptools in /usr/local/lib/python3.7/dist-packages (62.2.0)
pi@raspberrypi:~$ sudo pip3 install -U django
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting django
  Downloading https://files.pythonhosted.org/packages/c3/68/b63abc009ade25c1bd26b3740e173eab656608cf21641594a37e02cf57/Django-3.2.13-py3-none-any.whl (7.9MB)
    100% |#####| 7.9MB 59kB/s
Collecting sqlparse>=0.2.2 (from django)
  Downloading https://files.pythonhosted.org/packages/05/40/d836d55fb3f467243ee839ab7b814822fda522cd395fa41e282684e71ee5/sqlparse-0.4.2-py3-none-any.whl (42kB)
    100% |#####| 51kB 3.8MB/s
Requirement already satisfied, skipping upgrade: pytz in /usr/lib/python3/dist-packages (from django) (2019.1)
Requirement already satisfied, skipping upgrade: typing-extensions; python_version < "3.8" in /usr/local/lib/python3.7/dist-packages (from django) (4.2.0)
Installing collected packages: sqlparse, asgiref, django
Successfully installed asgiref-3.5.1 django-3.2.13 sqlparse-0.4.2
pi@raspberrypi:~$ sudo pip3 install -U djangoestframework
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting djangoestframework
  Downloading https://files.pythonhosted.org/packages/c8/45/2588c7c5a01a7da6822c6ffbc9a731d498c318a803a29ae780ec635ea41d/djangorestframework-3.13.1-py3-none-any.whl (958kB)
    100% |#####| 962kB 457kB/s
Requirement already satisfied, skipping upgrade: django>=2.2 in /usr/local/lib/python3.7/dist-packages (from djangorestframework) (3.2.13)
Requirement already satisfied, skipping upgrade: pytz in /usr/lib/python3/dist-packages (from djangorestframework) (2019.1)
Requirement already satisfied, skipping upgrade: asgiref<4,>=3.3.2 in /usr/local/lib/python3.7/dist-packages (from django>=2.2->djangorestframework) (3.5.1)
Requirement already satisfied, skipping upgrade: sqlparse>=0.2.2 in /usr/local/lib/python3.7/dist-packages (from django>=2.2->djangorestframework) (0.4.2)
Requirement already satisfied, skipping upgrade: typing-extensions; python_version < "3.8" in /usr/local/lib/python3.7/dist-packages (from asgiref<4,>=3.3.2->django>=2.2->djangorestframework) (4.2.0)
Installing collected packages: djangorestframework
Successfully installed djangorestframework-3.13.1
pi@raspberrypi:~$ sudo pip3 install -U django-filter
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting django-filter
  Downloading https://files.pythonhosted.org/packages/3f/90/8fbf530e14dcafc502cd80078cbac9e4f805f20888973488ebe8480c3c28/django_filter-21.1-py3-none-any.whl (81kB)
    100% |#####| 81kB 2.2MB/s
Requirement already satisfied, skipping upgrade: Django>=2.2 in /usr/local/lib/python3.7/dist-packages (from django-filter) (3.2.13)
Requirement already satisfied, skipping upgrade: asgiref<4,>=3.3.2 in /usr/local/lib/python3.7/dist-packages (from django>=2.2->django-filter) (3.5.1)
Requirement already satisfied, skipping upgrade: sqlparse>=0.2.2 in /usr/local/lib/python3.7/dist-packages (from Django>=2.2->django-filter) (0.4.2)
Requirement already satisfied, skipping upgrade: pytz in /usr/lib/python3/dist-packages (from Django>=2.2->django-filter) (2019.1)
Requirement already satisfied, skipping upgrade: typing-extensions; python_version < "3.8" in /usr/local/lib/python3.7/dist-packages (from asgiref<4,>=3.3.2->Django>=2.2->django-filter) (4.2.0)
Installing collected packages: django-filter
Successfully installed django-filter-21.1
pi@raspberrypi:~$ sudo pip3 install -U markdown
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Requirement already up-to-date: markdown in /usr/local/lib/python3.7/dist-packages (3.3.7)
Requirement already satisfied, skipping upgrade: importlib-metadata>=4.4; python_version >= "3.10" in /usr/local/lib/python3.7/dist-packages (from markdown) (4.11.3)
Requirement already satisfied, skipping upgrade: typing-extensions>=3.6.4; python_version < "3.8" in /usr/local/lib/python3.7/dist-packages (from importlib-metadata>=4.4; python_version < "3.10"->markdown) (4.2.0)
Requirement already satisfied, skipping upgrade: zipp>=0.5 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata>=4.4; python_version < "3.10"->markdown) (3.8.0)
pi@raspberrypi:~$ sudo pip3 install -U requests
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting requests
  Downloading https://files.pythonhosted.org/packages/2d/61/08076519c80041bc0ffala8af0cbd3bf3e2b62af10435d269a9d0f40564d/requests-2.27.1-py2.py3-none-any.whl (63kB)
    100% |#####| 71kB 3.0MB/s
Requirement already satisfied, skipping upgrade: urllib3<1.27,>=1.21.1 in /usr/lib/python3/dist-packages (from requests) (1.24.1)
Collecting charset-normalizer==2.0.0; python_version >= "3" (from requests)
  Downloading https://files.pythonhosted.org/packages/06/b3/24afc8868eba069a7f03650ac750a778862dc34941a4bebeb58706715726/charset_normalizer-2.0.12-py3-none-any.whl
Requirement already satisfied, skipping upgrade: certifi>=2017.4.17 in /usr/lib/python3/dist-packages (from requests) (2018.8.24)
Requirement already satisfied, skipping upgrade: idna<4,>=2.5; python_version >= "3" in /usr/lib/python3/dist-packages (from requests) (2.6)
yfinance 0.1.70 has requirement pandas>=0.24.0, but you'll have pandas 0.23.3+dfsg which is incompatible.
giskit-aqua 0.8.1 has requirement numpy>=1.17, but you'll have numpy 1.16.2 which is incompatible.
giskit-aqua 0.8.1 has requirement scipy>=1.4, but you'll have scipy 1.1.0 which is incompatible.
Installing collected packages: charset-normalizer, requests
Found existing installation: requests 2.21.0
Not uninstalling requests at /usr/lib/python3/dist-packages, outside environment /usr
Can't uninstall 'requests'. No files were found to uninstall.
Successfully installed charset-normalizer-2.0.12 requests-2.27.1
```

```
pi@raspberrypi:~$ sudo apt install mariadb-server mariadb-client
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  galera-3 gawk libcgi-fast-perl libcgi-pm-perl libconfig-inifiles-perl libdbd-mysql-perl libdbi-perl libencode-locale-perl libfcgi-perl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libreadline5 libsigsegv2
  libterm-readkey-perl libtimedate-perl liburi-perl mariadb-client-10.3 mariadb-client-core-10.3 mariadb-common mariadb-server-10.3 mariadb-server-core-10.3 socat
Suggested packages:
  gawk-doc libclone-perl libmldbm-perl libnet-daemon-perl libsql-statement-perl libdata-dump-perl libipc-sharedcache-perl libwww-perl mariadb-test tinyca
The following NEW packages will be installed:
  galera-3 gawk libcgi-fast-perl libcgi-pm-perl libconfig-inifiles-perl libdbd-mysql-perl libdbi-perl libencode-locale-perl libfcgi-perl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libreadline5 libsigsegv2
  libterm-readkey-perl libtimedate-perl liburi-perl mariadb-client mariadb-client-10.3 mariadb-client-core-10.3 mariadb-server mariadb-server-10.3
  mariadb-server-core-10.3 socat
The following packages will be upgraded:
  mariadb-common
1 upgraded, 28 newly installed, 0 to remove and 179 not upgraded.
Need to get 18.2 MB of archives.
After this operation, 150 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.mirror.constant.com/raspbian buster/main armhf libsigsegv2 armhf 2.12-2 [32.3 kB]
Get:2 http://raspbian.mirror.constant.com/raspbian buster/main armhf gawk armhf 1:4.2.1+dfsg-1 [590 kB]
Get:3 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-common all 1:10.3.34-0+deb10u1 [33.0 kB]
Get:4 http://raspbian.mirror.constant.com/raspbian buster/main armhf galera-3 armhf 25.3.25-2 [811 kB]
Get:5 http://raspbian.mirror.constant.com/raspbian buster/main armhf libdbi-perl armhf 1.642-1+deb10u2 [767 kB]
Get:6 http://raspbian.mirror.constant.com/raspbian buster/main armhf libconfig-inifiles-perl all 3.000001-1 [51.9 kB]
Get:7 http://raspbian.mirror.constant.com/raspbian buster/main armhf libreadline5 armhf 5.2+dfsg-3 [103 kB]
Get:8 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-client-core-10.3 armhf 1:10.3.34-0+deb10u1 [4,738 kB]
Get:9 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-client-10.3 armhf 1:10.3.34-0+deb10u1 [990 kB]
Get:10 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-server-core-10.3 armhf 1:10.3.34-0+deb10u1 [5,240 kB]
Get:11 http://raspbian.mirror.constant.com/raspbian buster/main armhf socat armhf 1.7.3.2-2 [324 kB]
Get:12 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-server-10.3 armhf 1:10.3.34-0+deb10u1 [3,575 kB]
Get:13 http://raspbian.mirror.constant.com/raspbian buster/main armhf libhtml-tagset-perl all 3.20-3 [12.7 kB]
Get:14 http://raspbian.mirror.constant.com/raspbian buster/main armhf liburi-perl all 1.76-1 [89.9 kB]
Get:15 http://raspbian.mirror.constant.com/raspbian buster/main armhf libhtml-parser-perl armhf 3.72-3+b2 [101 kB]
Get:16 http://raspbian.mirror.constant.com/raspbian buster/main armhf libcgi-pm-perl all 4.40-1 [222 kB]
Get:17 http://raspbian.mirror.constant.com/raspbian buster/main armhf libfcgi-perl armhf 0.78-2+b2 [35.0 kB]
Get:18 http://raspbian.mirror.constant.com/raspbian buster/main armhf libcgi-fast-perl all 1:2.13-1 [11.4 kB]
Get:19 http://raspbian.mirror.constant.com/raspbian buster/main armhf libdbd-mysql-perl armhf 4.050-2 [114 kB]
Get:20 http://raspbian.mirror.constant.com/raspbian buster/main armhf libencode-locale-perl all 1.05-1 [13.7 kB]
Get:21 http://raspbian.mirror.constant.com/raspbian buster/main armhf libhtml-template-perl all 2.97-1 [66.0 kB]
Get:22 http://raspbian.mirror.constant.com/raspbian buster/main armhf libtimedate-perl all 2.3000-2+deb10u1 [38.1 kB]
Get:23 http://raspbian.mirror.constant.com/raspbian buster/main armhf libhttp-date-perl all 6.02-1 [10.7 kB]
Get:24 http://raspbian.mirror.constant.com/raspbian buster/main armhf libio-html-perl all 1.001-1 [17.6 kB]
Get:25 http://raspbian.mirror.constant.com/raspbian buster/main armhf liblwp-mediatypes-perl all 6.02-1 [22.1 kB]
Get:26 http://raspbian.mirror.constant.com/raspbian buster/main armhf libhttp-message-perl all 6.18-1 [77.8 kB]
Get:27 http://raspbian.mirror.constant.com/raspbian buster/main armhf libterm-readkey-perl armhf 2.38-1 [26.3 kB]
Get:28 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-client all 1:10.3.34-0+deb10u1 [31.8 kB]
Get:29 http://raspbian.mirror.constant.com/raspbian buster/main armhf mariadb-server all 1:10.3.34-0+deb10u1 [32.0 kB]
Fetched 18.2 MB in 8s (2,392 kB/s)
Reading changelogs... Done
Preconfiguring packages ...
Selecting previously unselected package libsigsegv2:armhf.
(Reading database ... 121012 files and directories currently installed.)
Preparing to unpack .../libsigsegv2_2.12-2_armhf.deb ...
Unpacking libsigsegv2:armhf (2.12-2) ...
Setting up libsigsegv2:armhf (2.12-2) ...
Selecting previously unselected package gawk.
(Reading database ... 121021 files and directories currently installed.)
Preparing to unpack .../0-gawk_1%3a4.2.1+dfsg-1_armhf.deb ...
Unpacking gawk (1:4.2.1+dfsg-1) ...
Preparing to unpack .../1-mariadb-common_1%3a10.3.34-0+deb10u1_all.deb ...
Unpacking mariadb-common (1:10.3.34-0+deb10u1) over (1:10.3.27-0+deb10u1) ...
Selecting previously unselected package galera-3.
Preparing to unpack .../2-galera-3_25.3.25-2_armhf.deb ...
Unpacking galera-3 (25.3.25-2) ...
```

```
pi@raspberrypi:~ $ sudo apt install python3-mysqldb
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  python-egenix-mxdatetime python3-mysqldb-dbg
The following NEW packages will be installed:
  python3-mysqldb
0 upgraded, 1 newly installed, 0 to remove and 179 not upgraded.
Need to get 53.1 kB of archives.
After this operation, 177 kB of additional disk space will be used.
Get:1 http://raspbian.mirror.constant.com/raspbian buster/main armhf python3-mysqldb armhf 1.3.10-2+b1 [53.1 kB]
Fetched 53.1 kB in 0s (145 kB/s)
Selecting previously unselected package python3-mysqldb.
(Reading database ... 122007 files and directories currently installed.)
Preparing to unpack .../python3-mysqldb_1.3.10-2+b1_armhf.deb ...
Unpacking python3-mysqldb (1.3.10-2+b1) ...
Setting up python3-mysqldb (1.3.10-2+b1) ...
pi@raspberrypi:~ $ sudo pip3 install -U mysqlclient
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting mysqlclient
  Downloading https://www.piwheels.org/simple/mysqlclient/mysqlclient-2.1.0-cp37-cp37m-linux_armv7l.whl (107kB)
    100% |████████████████████████████████████████| 112kB 510kB/s
Installing collected packages: mysqlclient
  Found existing installation: mysqlclient 1.3.10
    Not uninstalling mysqlclient at /usr/lib/python3/dist-packages, outside environment /usr
    Can't uninstall 'mysqlclient'. No files were found to uninstall.
Successfully installed mysqlclient-2.1.0
pi@raspberrypi:~ $ sudo mysql_secure_installation
```

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB  
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current  
password for the root user. If you've just installed MariaDB, and  
you haven't set the root password yet, the password will be blank,  
so you should just press enter here.

Enter current password for root (enter for none):  
OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MariaDB  
root user without the proper authorisation.

You already have a root password set, so you can safely answer 'n'.

Change the root password? [Y/n] n  
... skipping.

By default, a MariaDB installation has an anonymous user, allowing anyone  
to log into MariaDB without having to have a user account created for  
them. This is intended only for testing, and to make the installation  
go a bit smoother. You should remove them before moving into a  
production environment.

Remove anonymous users? [Y/n] n  
... skipping.

Normally, root should only be allowed to connect from 'localhost'. This  
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] n  
... skipping.

```
pi@raspberrypi:~ $ cd ~/iot/lesson4
pi@raspberrypi:~/iot/lesson4 $ python3 hello_world.py
* Serving Flask app "hello_world" (lazy loading)
* Environment: production
  WARNING: Do not use the development server in a production environment.
  Use a production WSGI server instead.
* Debug mode: off
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

```
pi@raspberrypi:~/iot/lesson4 $ sudo pip3 install -U flask-ask
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting flask-ask
  Downloading https://www.piwheels.org/simple/flask-ask/Flask_Ask-0.9.8-py2.py3-none-any.whl
Collecting six==1.11.0 (from flask-ask)
  Downloading https://files.pythonhosted.org/packages/67/4b/141a581104bf6397bfa78ac9d43d8ad29a7ca43ea90a2d863fe3056e86a/six-1.11.0-py2.py3-none-any.whl
Collecting Flask==0.12.1 (from flask-ask)
  Downloading https://files.pythonhosted.org/packages/f4/43/fb2d5fb1d10e1d0402dd57836cf9a78b7f69c8b5f76a04b6e1133d07c5a/Flask-0.12.1-py2.py3-none-any.whl (82kB)
100% |████████████████████████████████████████| 92kB 3.3MB/s
Collecting PyYAML==3.12 (from flask-ask)
  Downloading https://www.piwheels.org/simple/pyyaml/PyYAML-3.12-cp37-cp37m-linux_armv7l.whl (43kB)
100% |████████████████████████████████████████| 51kB 308kB/s
Collecting pyOpenSSL==17.0.0 (from flask-ask)
  Downloading https://files.pythonhosted.org/packages/8c/b7/0048adb09ad93f571e70fb3100e696d4711cdcbfe38161690d716a5ed35/pyOpenSSL-17.0.0-py2.py3-none-any.whl (51kB)
100% |████████████████████████████████████████| 61kB 3.7MB/s
Collecting aniso8601==1.2.0 (from flask-ask)
  Downloading https://www.piwheels.org/simple/aniso8601/aniso8601-1.2.0-py3-none-any.whl
Requirement already satisfied, skipping upgrade: Jinja2>=2.4 in /usr/lib/python3/dist-packages (from Flask==0.12.1->flask-ask) (2.10)
Requirement already satisfied, skipping upgrade: Werkzeug>=0.7 in /usr/lib/python3/dist-packages (from Flask==0.12.1->flask-ask) (0.14.1)
Requirement already satisfied, skipping upgrade: click>=2.0 in /usr/lib/python3/dist-packages (from Flask==0.12.1->flask-ask) (7.0)
Requirement already satisfied, skipping upgrade: itsdangerous>=0.21 in /usr/lib/python3/dist-packages (from Flask==0.12.1->flask-ask) (0.24)
Requirement already satisfied, skipping upgrade: cryptography>=1.7 in /usr/lib/python3/dist-packages (from pyOpenSSL==17.0.0->flask-ask) (2.6.1)
Requirement already satisfied, skipping upgrade: python-dateutil in /usr/local/lib/python3.7/dist-packages (from aniso8601==1.2.0->flask-ask) (2.8.2)
qiskit-aqua 0.8.1 has requirement numpy>=1.17, but you'll have numpy 1.16.2 which is incompatible.
qiskit-aqua 0.8.1 has requirement scipy>=1.4, but you'll have scipy 1.1.0 which is incompatible.
Installing collected packages: six, Flask, PyYAML, pyOpenSSL, aniso8601, flask-ask
Found existing installation: six 1.12.0
  Not uninstalling six at /usr/lib/python3/dist-packages, outside environment /usr
  Can't uninstall 'six'. No files were found to uninstall.
Found existing installation: Flask 1.0.2
  Not uninstalling flask at /usr/lib/python3/dist-packages, outside environment /usr
  Can't uninstall 'Flask'. No files were found to uninstall.
Found existing installation: PyYAML 6.0
  Uninstalling PyYAML-6.0:
    Successfully uninstalled PyYAML-6.0
Found existing installation: pyOpenSSL 19.0.0
  Not uninstalling pyopenssl at /usr/lib/python3/dist-packages, outside environment /usr
  Can't uninstall 'pyOpenSSL'. No files were found to uninstall.
Successfully installed Flask-0.12.1 PyYAML-3.12 aniso8601-1.2.0 flask-ask-0.9.8 pyOpenSSL-17.0.0 six-1.11.0
pi@raspberrypi:~/iot/lesson4 $ sudo pip3 install 'cryptography<2.2'
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting cryptography<2.2
  Downloading https://www.piwheels.org/simple/cryptography/cryptography-2.1.4-cp37-cp37m-linux_armv7l.whl (974kB)
100% |████████████████████████████████████████| 983kB 414kB/s
Requirement already satisfied: idna>=2.1 in /usr/lib/python3/dist-packages (from cryptography<2.2) (2.6)
Collecting cffi==1.7; platform_python_implementation != "PyPy" (from cryptography<2.2)
  Using cached https://www.piwheels.org/simple/cffi/cffi-1.15.0-cp37-cp37m-linux_armv7l.whl
Requirement already satisfied: six>=1.4.1 in /usr/local/lib/python3.7/dist-packages (from cryptography<2.2) (1.11.0)
Requirement already satisfied: asn1crypto>=0.21.0 in /usr/lib/python3/dist-packages (from cryptography<2.2) (0.24.0)
Collecting pycparser (from cffi==1.7; platform_python_implementation != "PyPy"->cryptography<2.2)
  Using cached https://files.pythonhosted.org/packages/62/d5/5f610ebe421e8589f2e55e33b7f9a6795bd982198517d912eb1c76e1a53/pycparser-2.21-py2.py3-none-any.whl
Installing collected packages: pycparser, cffi, cryptography
Found existing installation: cryptography 2.6.1
  Not uninstalling cryptography at /usr/lib/python3/dist-packages, outside environment /usr
  Can't uninstall 'cryptography'. No files were found to uninstall.
Successfully installed cffi-1.15.0 cryptography-2.1.4 pycparser-2.21
```



# Terminal 2

```
pi@raspberrypi:~ $ cd ~/iot/lesson4
pi@raspberrypi:~/iot/lesson4 $ python3 memory_game.py
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 941-083-912
```

```
pi@raspberrypi:~/iot/lesson4 $ sudo apt update
Hit:1 http://raspbian.raspberrypi.org/raspbian buster InRelease
Hit:2 http://archive.raspberrypi.org/debian buster InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
179 packages can be upgraded. Run 'apt list --upgradable' to see them.
pi@raspberrypi:~/iot/lesson4 $ sudo apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
0 upgraded, 8 newly installed, 0 to remove and 179 not upgraded.
Need to get 1,973 kB of archives.
After this operation, 6,169 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.mirror.constant.com/raspbian buster/main armhf libapr1 armhf 1.6.5-1 [83.3 kB]
Get:2 http://raspbian.mirror.constant.com/raspbian buster/main armhf libaprutil1 armhf 1.6.1-4 [81.7 kB]
Get:3 http://raspbian.mirror.constant.com/raspbian buster/main armhf libaprutil1-dbd-sqlite3 armhf 1.6.1-4 [17.3 kB]
Get:4 http://raspbian.mirror.constant.com/raspbian buster/main armhf libaprutil1-ldap armhf 1.6.1-4 [16.3 kB]
Get:5 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2-bin armhf 2.4.38-3+deb10u7 [1,122 kB]
Get:6 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2-data all 2.4.38-3+deb10u7 [165 kB]
Get:7 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2-utils armhf 2.4.38-3+deb10u7 [236 kB]
Get:8 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2 armhf 2.4.38-3+deb10u7 [252 kB]
Fetched 1,973 kB in 2s (931 kB/s)
Selecting previously unselected package libapr1:armhf.
(Reading database ... 122034 files and directories currently installed.)
Preparing to unpack .../0-libapr1_1.6.5-1_armhf.deb ...
Unpacking libapr1:armhf (1.6.5-1) ...
Selecting previously unselected package libaprutil1:armhf.
Preparing to unpack .../1-libaprutil1_1.6.1-4_armhf.deb ...
Unpacking libaprutil1:armhf (1.6.1-4) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:armhf.
Preparing to unpack .../2-libaprutil1-dbd-sqlite3_1.6.1-4_armhf.deb ...
Unpacking libaprutil1-dbd-sqlite3:armhf (1.6.1-4) ...
Selecting previously unselected package libaprutil1-ldap:armhf.
Preparing to unpack .../3-libaprutil1-ldap_1.6.1-4_armhf.deb ...
Unpacking libaprutil1-ldap:armhf (1.6.1-4) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../4-apache2-bin_2.4.38-3+deb10u7_armhf.deb ...
Unpacking apache2-bin (2.4.38-3+deb10u7) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../5-apache2-data_2.4.38-3+deb10u7_all.deb ...
Unpacking apache2-data (2.4.38-3+deb10u7) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../6-apache2-utils_2.4.38-3+deb10u7_armhf.deb ...
Unpacking apache2-utils (2.4.38-3+deb10u7) ...
Selecting previously unselected package apache2.
Preparing to unpack .../7-apache2_2.4.38-3+deb10u7_armhf.deb ...
Unpacking apache2 (2.4.38-3+deb10u7) ...
Setting up libapr1:armhf (1.6.5-1) ...
Setting up apache2-data (2.4.38-3+deb10u7) ...
Setting up libaprutil1:armhf (1.6.1-4) ...
Setting up libaprutil1-ldap:armhf (1.6.1-4) ...
Setting up libaprutil1-dbd-sqlite3:armhf (1.6.1-4) ...
Setting up apache2-utils (2.4.38-3+deb10u7) ...
Setting up apache2-bin (2.4.38-3+deb10u7) ...
Setting up apache2 (2.4.38-3+deb10u7) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
```

```

Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.
Processing triggers for systemd (241-7~deb10u7+rpil) ...
Processing triggers for man-db (2.8.5-2) ...
pi@raspberrypi:~/iot/lesson4 $ sudo apt update
Hit:1 http://raspbian.raspberrypi.org/raspbian buster InRelease
Hit:2 http://archive.raspberrypi.org/debian buster InRelease
Reading package lists... Done
Building dependency tree
Reading state information... Done
179 packages can be upgraded. Run 'apt list --upgradable' to see them.
pi@raspberrypi:~/iot/lesson4 $ sudo apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
0 upgraded, 8 newly installed, 0 to remove and 179 not upgraded.
Need to get 1,973 kB of archives.
After this operation, 6,169 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.mirror.constant.com/raspbian buster/main armhf libapr1 armhf 1.6.5-1 [83.3 kB]
Get:2 http://raspbian.mirror.constant.com/raspbian buster/main armhf libaprutil1 armhf 1.6.1-4 [81.7 kB]
Get:3 http://raspbian.mirror.constant.com/raspbian buster/main armhf libaprutil1-dbd-sqlite3 armhf 1.6.1-4 [17.3 kB]
Get:4 http://raspbian.mirror.constant.com/raspbian buster/main armhf libaprutil1-ldap armhf 1.6.1-4 [16.3 kB]
Get:5 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2-bin armhf 2.4.38-3+deb10u7 [1,122 kB]
Get:6 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2-data all 2.4.38-3+deb10u7 [165 kB]
Get:7 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2-utils armhf 2.4.38-3+deb10u7 [236 kB]
Get:8 http://raspbian.mirror.constant.com/raspbian buster/main armhf apache2 armhf 2.4.38-3+deb10u7 [252 kB]
Fetched 1,973 kB in 2s (931 kB/s)
Selecting previously unselected package libapr1:armhf.
(Reading database ... 122034 files and directories currently installed.)
Preparing to unpack .../0-libapr1_1.6.5-1_armhf.deb ...
Unpacking libapr1:armhf (1.6.5-1) ...
Selecting previously unselected package libaprutil1:armhf.
Preparing to unpack .../1-libaprutil1_1.6.1-4_armhf.deb ...
Unpacking libaprutil1:armhf (1.6.1-4) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:armhf.
Preparing to unpack .../2-libaprutil1-dbd-sqlite3_1.6.1-4_armhf.deb ...
Unpacking libaprutil1-dbd-sqlite3:armhf (1.6.1-4) ...
Selecting previously unselected package libaprutil1-ldap:armhf.
Preparing to unpack .../3-libaprutil1-ldap_1.6.1-4_armhf.deb ...
Unpacking libaprutil1-ldap:armhf (1.6.1-4) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../4-apache2-bin_2.4.38-3+deb10u7_armhf.deb ...
Unpacking apache2-bin (2.4.38-3+deb10u7) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../5-apache2-data_2.4.38-3+deb10u7_all.deb ...
Unpacking apache2-data (2.4.38-3+deb10u7) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../6-apache2-utils_2.4.38-3+deb10u7_armhf.deb ...
Unpacking apache2-utils (2.4.38-3+deb10u7) ...
Selecting previously unselected package apache2.
Preparing to unpack .../7-apache2_2.4.38-3+deb10u7_armhf.deb ...
Unpacking apache2 (2.4.38-3+deb10u7) ...
Setting up libapr1:armhf (1.6.5-1) ...
Setting up apache2-data (2.4.38-3+deb10u7) ...
Setting up libaprutil1:armhf (1.6.1-4) ...
Setting up libaprutil1-ldap:armhf (1.6.1-4) ...
Setting up libaprutil1-dbd-sqlite3:armhf (1.6.1-4) ...
Setting up apache2-utils (2.4.38-3+deb10u7) ...
Setting up apache2-bin (2.4.38-3+deb10u7) ...
Setting up apache2 (2.4.38-3+deb10u7) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.

```

```
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.
Processing triggers for systemd (241-7-deb10u7+rpil) ...
Processing triggers for man-db (2.8.5-2) ...
Processing triggers for libc-bin (2.28-10+rpil) ...
pi@raspberrypi:~/iot/lesson4 $ sudo service apache2 restart
```

```
pi@raspberrypi:~/iot/lesson4 $ sudo apt install php
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php7.3 php-common php7.3 php7.3-cli php7.3-common php7.3-json php7.3-opcache php7.3-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php7.3 php php-common php7.3 php7.3-cli php7.3-common php7.3-json php7.3-opcache php7.3-readline
0 upgraded, 9 newly installed, 0 to remove and 179 not upgraded.
Need to get 2,985 kB of archives.
After this operation, 14.1 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.mirror.constant.com/raspbian buster/main armhf php-common all 2:69 [15.0 kB]
Get:2 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3-common armhf 7.3.31-1-deb10u1 [527 kB]
Get:3 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3-json armhf 7.3.31-1-deb10u1 [16.2 kB]
Get:4 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3-opcache armhf 7.3.31-1-deb10u1 [155 kB]
Get:5 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3-readline armhf 7.3.31-1-deb10u1 [10.7 kB]
Get:6 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3-cli armhf 7.3.31-1-deb10u1 [1,127 kB]
Get:7 http://raspbian.mirror.constant.com/raspbian buster/main armhf libapache2-mod-php7.3 armhf 7.3.31-1-deb10u1 [1,082 kB]
Get:8 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3 all 7.3.31-1-deb10u1 [47.3 kB]
Get:9 http://raspbian.mirror.constant.com/raspbian buster/main armhf php all 2:7.3+69 [5,964 B]
Fetched 2,985 kB in 2s (1,221 kB/s)
Selecting previously unselected package php-common.
(Reading database ... 122737 files and directories currently installed.)
Preparing to unpack .../0-php-common_2%3a69_all.deb ...
Unpacking php-common (2:69) ...
Selecting previously unselected package php7.3-common.
Preparing to unpack .../1-php7.3-common_7.3.31-1-deb10u1_armhf.deb ...
Unpacking php7.3-common (7.3.31-1-deb10u1) ...
Selecting previously unselected package php7.3-json.
Preparing to unpack .../2-php7.3-json_7.3.31-1-deb10u1_armhf.deb ...
Unpacking php7.3-json (7.3.31-1-deb10u1) ...
Selecting previously unselected package php7.3-opcache.
Preparing to unpack .../3-php7.3-opcache_7.3.31-1-deb10u1_armhf.deb ...
Unpacking php7.3-opcache (7.3.31-1-deb10u1) ...
Selecting previously unselected package php7.3-readline.
Preparing to unpack .../4-php7.3-readline_7.3.31-1-deb10u1_armhf.deb ...
Unpacking php7.3-readline (7.3.31-1-deb10u1) ...
Selecting previously unselected package php7.3-cli.
Preparing to unpack .../5-php7.3-cli_7.3.31-1-deb10u1_armhf.deb ...
Unpacking php7.3-cli (7.3.31-1-deb10u1) ...
Selecting previously unselected package libapache2-mod-php7.3.
Preparing to unpack .../6-libapache2-mod-php7.3_7.3.31-1-deb10u1_armhf.deb ...
Unpacking libapache2-mod-php7.3 (7.3.31-1-deb10u1) ...
Selecting previously unselected package php7.3.
Preparing to unpack .../7-php7.3_7.3.31-1-deb10u1_all.deb ...
Unpacking php7.3 (7.3.31-1-deb10u1) ...
Selecting previously unselected package php.
Preparing to unpack .../8-php_2%3a7.3+69_all.deb ...
Unpacking php (2:7.3+69) ...
Setting up php-common (2:69) ...
Created symlink /etc/systemd/system/timers.target.wants/phpsessionclean.timer → /lib/systemd/system/phpsessionclean.timer.
Setting up php7.3-common (7.3.31-1-deb10u1) ...

Creating config file /etc/php/7.3/mods-available/calendar.ini with new version

Creating config file /etc/php/7.3/mods-available/ctype.ini with new version

Creating config file /etc/php/7.3/mods-available/exif.ini with new version

Creating config file /etc/php/7.3/mods-available/fileinfo.ini with new version

Creating config file /etc/php/7.3/mods-available/ftp.ini with new version
```



```
Creating config file /etc/php/7.3/mods-available/calendar.ini with new version
Creating config file /etc/php/7.3/mods-available/ctype.ini with new version
Creating config file /etc/php/7.3/mods-available/exif.ini with new version
Creating config file /etc/php/7.3/mods-available/fileinfo.ini with new version
Creating config file /etc/php/7.3/mods-available/ftp.ini with new version
Creating config file /etc/php/7.3/mods-available/gettext.ini with new version
Creating config file /etc/php/7.3/mods-available/iconv.ini with new version
Creating config file /etc/php/7.3/mods-available/pdo.ini with new version
Creating config file /etc/php/7.3/mods-available/phar.ini with new version
Creating config file /etc/php/7.3/mods-available/posix.ini with new version
Creating config file /etc/php/7.3/mods-available/shmop.ini with new version
Creating config file /etc/php/7.3/mods-available/sockets.ini with new version
Creating config file /etc/php/7.3/mods-available/sysvmsg.ini with new version
Creating config file /etc/php/7.3/mods-available/sysvsem.ini with new version
Creating config file /etc/php/7.3/mods-available/sysvshm.ini with new version
Creating config file /etc/php/7.3/mods-available/tokenizer.ini with new version
Setting up php7.3-opcache (7.3.31-1~deb10u1) ...

Creating config file /etc/php/7.3/mods-available/opcache.ini with new version
Setting up php7.3-json (7.3.31-1~deb10u1) ...

Creating config file /etc/php/7.3/mods-available/json.ini with new version
Setting up php7.3-readline (7.3.31-1~deb10u1) ...

Creating config file /etc/php/7.3/mods-available/readline.ini with new version
Setting up php7.3-cli (7.3.31-1~deb10u1) ...
update-alternatives: using /usr/bin/php7.3 to provide /usr/bin/php (php) in auto mode
update-alternatives: using /usr/bin/phar7.3 to provide /usr/bin/phar (phar) in auto mode
update-alternatives: using /usr/bin/phar.phar7.3 to provide /usr/bin/phar.phar (phar.phar) in auto mode

Creating config file /etc/php/7.3/cli/php.ini with new version
Setting up libapache2-mod-php7.3 (7.3.31-1~deb10u1) ...

Creating config file /etc/php/7.3/apache2/php.ini with new version
Module mpm_event disabled.
Enabling module mpm_prefork.
apache2_switch_mpm Switch to prefork
apache2_invoke: Enable module php7.3
Setting up php7.3 (7.3.31-1~deb10u1) ...
Setting up php (2:7.3+69) ...
Processing triggers for man-db (2.8.5-2) ...
```

```
pi@raspberrypi:~/iot/lesson4 $ cd /var/www/html
pi@raspberrypi:/var/www/html $ ls
index.html
```

```

pi@raspberrypi:/var/www/html $ sudo mv index.html index.html.bak
pi@raspberrypi:/var/www/html $ sudo cp ~/iot/lesson4/index.php .
pi@raspberrypi:/var/www/html $ sudo service apache2 restart
pi@raspberrypi:/var/www/html $ sudo apt install php-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  php7.3-mysql
The following NEW packages will be installed:
  php-mysql php7.3-mysql
0 upgraded, 2 newly installed, 0 to remove and 179 not upgraded.
Need to get 102 kB of archives.
After this operation, 368 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.mirror.constant.com/raspbian buster/main armhf php7.3-mysql armhf 7.3.31-1-deb10u1 [96.4 kB]
Get:2 http://mirror.us.leaseweb.net/raspbian/raspbian buster/main armhf php-mysql all 2:7.3+69 [5,992 B]
Fetched 102 kB in 1s (121 kB/s)
Selecting previously unselected package php7.3-mysql.
(Reading database ... 122877 files and directories currently installed.)
Preparing to unpack .../php7.3-mysql_7.3.31-1-deb10u1_armhf.deb ...
Unpacking php7.3-mysql (7.3.31-1-deb10u1) ...
Selecting previously unselected package php-mysql.
Preparing to unpack .../php-mysql_2%3a7.3+69_all.deb ...
Unpacking php-mysql (2:7.3+69) ...
Setting up php7.3-mysql (7.3.31-1-deb10u1) ...

Creating config file /etc/php/7.3/mods-available/mysqlnd.ini with new version

Creating config file /etc/php/7.3/mods-available/mysqlcli.ini with new version

Creating config file /etc/php/7.3/mods-available/pdo_mysql.ini with new version
Setting up php-mysql (2:7.3+69) ...
Processing triggers for libapache2-mod-php7.3 (7.3.31-1-deb10u1) ...
pi@raspberrypi:/var/www/html $ cd /var/www/html
pi@raspberrypi:/var/www/html $ sudo chown pi: .
pi@raspberrypi:/var/www/html $ mv index.php index.php.bak
pi@raspberrypi:/var/www/html $ wget http://wordpress.org/latest.tar.gz
--2022-05-13 12:50:51-- http://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org)|198.143.164.252|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://wordpress.org/latest.tar.gz [following]
--2022-05-13 12:50:51-- https://wordpress.org/latest.tar.gz
Connecting to wordpress.org (wordpress.org)|198.143.164.252|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 18725197 (18M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz          100%[=====>] 17.86M  19.3MB/s  in 0.9s

2022-05-13 12:50:52 (19.3 MB/s) - 'latest.tar.gz' saved [18725197/18725197]

pi@raspberrypi:/var/www/html $ tar xzf latest.tar.gz
pi@raspberrypi:/var/www/html $ mv wordpress/* .
pi@raspberrypi:/var/www/html $ rm -rf wordpress latest.tar.gz

```

```

pi@raspberrypi:/var/www/html $ sudo mysql -u root -p

```

Enter password:

Welcome to the MariaDB monitor. Commands end with ; or \g.

Your MariaDB connection id is 38

Server version: 10.3.34-MariaDB-0+deb10u1 Raspbian 10

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```

MariaDB [(none)]> use mysql

```

Reading table information for completion of table and column names

You can turn off this feature to get a quicker startup with -A

Database changed

```

MariaDB [mysql]> create database wordpress;

```

ERROR 1007 (HY000): Can't create database 'wordpress'; database exists

```

MariaDB [mysql]> grant all privileges on wordpress.* to pi@raspberrypi;

```

ERROR 1133 (28000): Can't find any matching row in the user table

```

MariaDB [mysql]> quit

```

Bye

```

pi@raspberrypi:/var/www/html $ sudo service apache2 restart

```