Python & IoT

Programming, monitoring and controlling things

Agenda

- Förkunskaper
  - Git
  - Unix
- Environment
- Basics in python
- (MQTT)

Raspbian

- https://www.raspberrypi.org/documentation/
    - https://www.raspberrypi.org/documentation/linux/software/apt.md

- Debian Linux on the Raspberry pi

Git

- Version control system

- sudo apt-get install git
- git clone https://your.repo.dns/some/repo
- Get it for your pc!

Python

- If you are brave.. use python 3.
  - I will stick with python 2, thank you very much.
- On the pie, python should come preinstalled
- Install it on your pc!
  - https://www.python.org/
- https://docs.python.org
- https://docs.python.org/2.7/tutorial/

Editor

- Several good options
  - https://code.visualstudio.com/
  - https://www.sublimetext.com/
  - …

- Develop on your PC

- Test it on your pi!

Hello mom!

```
$ python
Python 2.7.12 (default, Jun 29 2016, 12:52:38)
[GCC 4.2.1 Compatible Apple LLVM 7.0.2 (clang-700.1.81)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>>
>>>
>>> print("Hello mom!")
>>> Hello mom!
```

ESCAPE!

- ctrl+D
- ctrl+Z
- quit()
- if your terminal gets screwed up.. try the reset command

mom.py

```
$ cat mom.py
print("Hej på dig lilla mamma!")

$ python mom.py
  File "mom.py", line 1
SyntaxError: Non-ASCII character '\xc3' in file mom.py on line 1, but no encoding
declared; see http://python.org/dev/peps/pep-0263/ for details
```

mom2.py

```
$ cat mom2.py
#!/usr/bin/env python
# -*- coding: utf-8 -*-
print("Hej på dig lilla mamma!")
```

```
$ python mom2.py
Hej på dig lilla mamma!
```

Helpful fun

```
$ python
Python 2.7.12 (default, Jun 29 2016, 12:52:38)
[GCC 4.2.1 Compatible Apple LLVM 7.0.2 (clang-700.1.81)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
```

```
>>> import random
>>> help(random)

>>> import paho.mqtt.client as mqtt
>>> help(mqtt)
```

Examples

- git clone https://github.com/JohanZackrisson/python-iot-course.git