

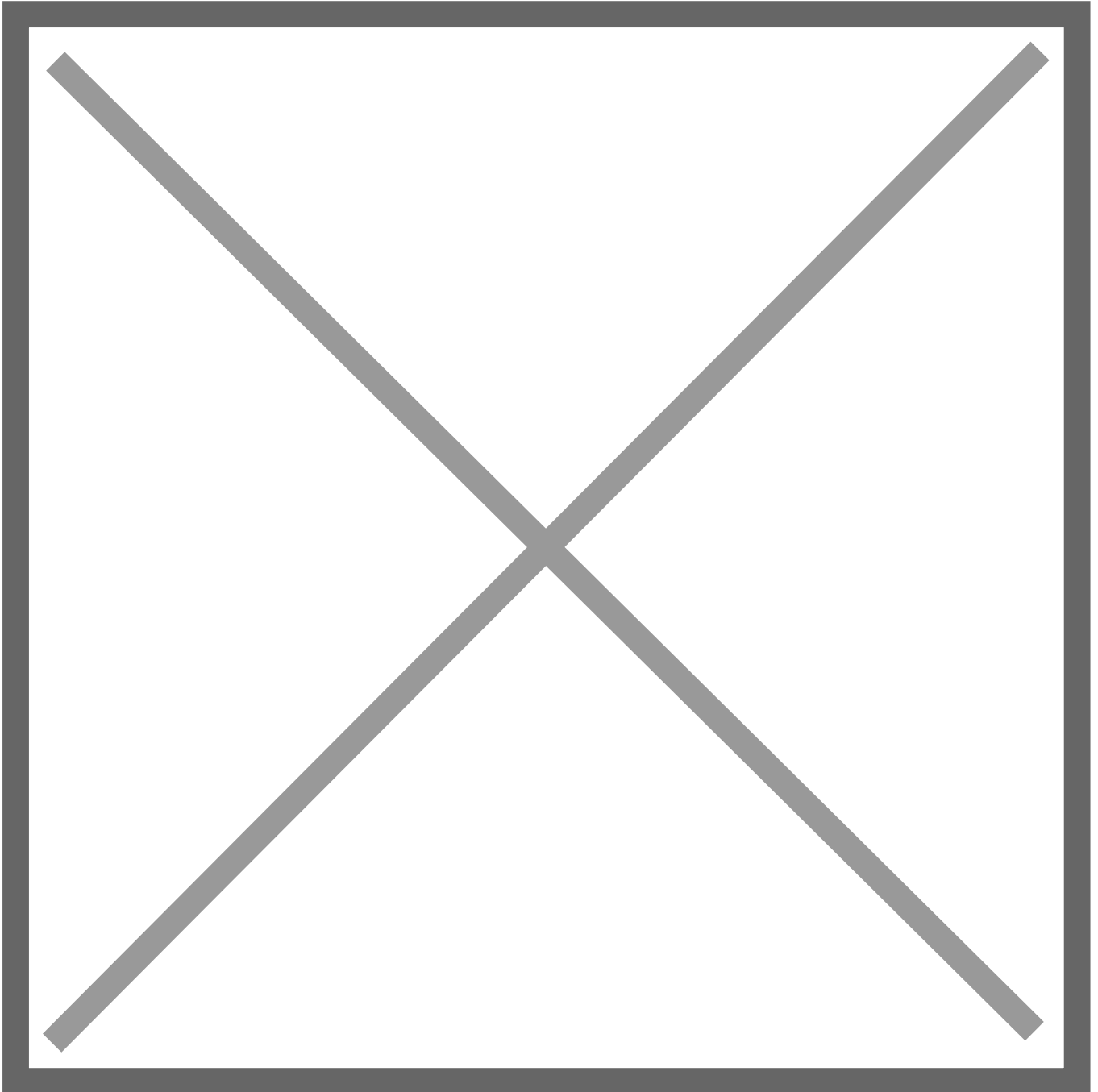
# Week 4 - Other inputs and APIs

## Outcomes

- Independently researching new features of p5.js using **the documentation**
- Using inputs to control behaviour of your sketch
- Understanding the concept of web-based APIs and basic use
- In groups create a sketch that uses either at least one input (learnt today) or APIs to create an interactive sketch

## Local web server

So far during this series of workshops testing your code has involved opening the `index.html` file in your browser, which results in an absolute *file path* in the browser address bar (see below). You can see this indicated by the `file://` protocol followed by the absolute file path to the index.html file:



For some examples you will need to run a local HTTP web server that serves the files in a project. If you have **Node.js** already installed you can run the following command to install an HTTP web server:

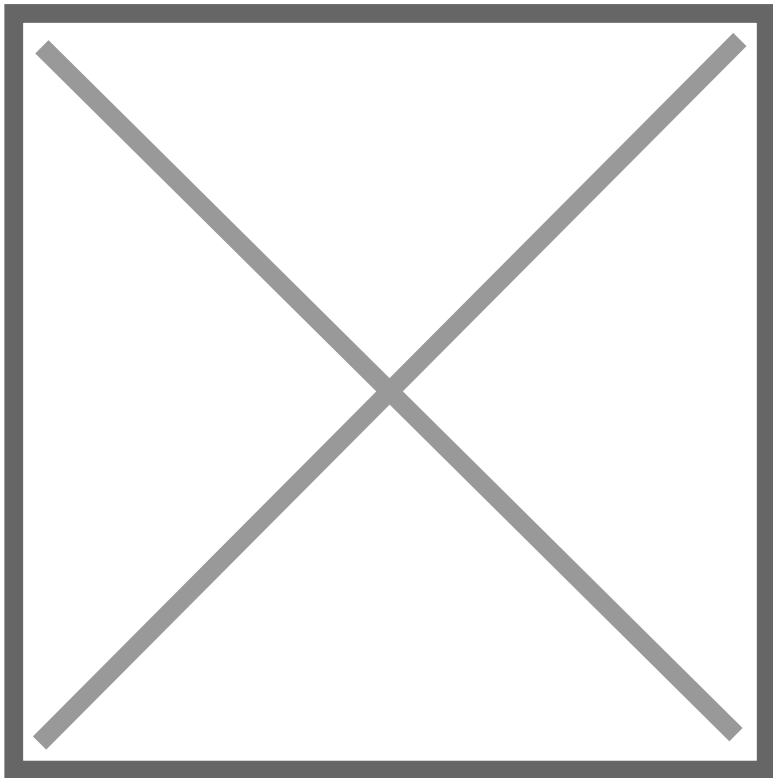
```
sudo npm install -g http-server
```

If you receive an error from the above command it's likely that you *do not* have Node.js installed. In which case visit the **Node.js homepage** and download/install the **LTS** version and repeat the command above.

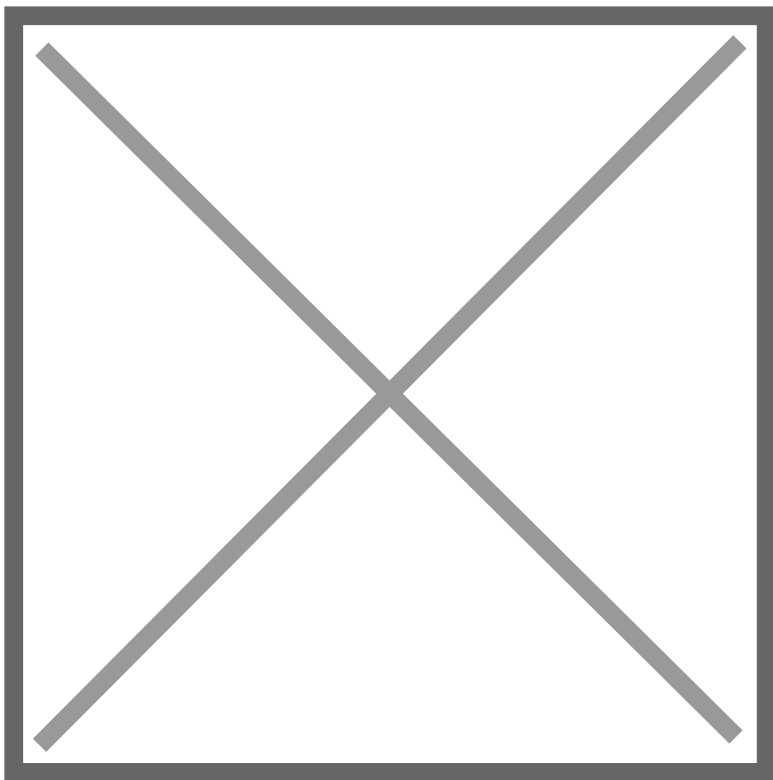
Once you have installed the HTTP web server you will need to *change directory* (`cd`) into the project directory on the command line and run the server:

```
cd ~/Desktop/intro-to-programming-2017/15_image_pixel_array/  
http-server
```

If successful you will see messages in the command line similar to this:



You can then copy and paste one of the URLs into you browser:



# Other Inputs

So far you have used the input for mouse position to affect the visual output in your sketch.

There are a range of other inputs we can use to create dynamic / interactive sketches:

- Click
- Keyboard
- Touch / Drag
- Rotation

Experiment with these other inputs using the **p5.js reference**. Search for 'Events' section in the reference.

## APIs

### Supporting Code

The code to support this section is located in the following directory and is available to view on **Github**:

```
/19_api_playground/
```

Here are a list of APIs you can use for this example:

APIs

### OPEN

- Blockchain (**Documentation**):  
**<https://blockchain.info/latestblock>**
- Most Recent Earthquakes:  
**<http://apis.is/earthquake/is>**
- Icelandic Open Data (**Documentation**):

1. **<http://apis.is/cyclecounter>**
2. **<http://apis.is/horses?id=IS1987187700>**
3. **<http://apis.is/ship?search=engey>**

- MusicBrainz:  
**<http://musicbrainz.org/ws/2/artist/5b11f4ce-a62d-471e-81fc-a69a8278c7da?inc=aliases&fmt=json>**
- Exchange Rates (**[Documentation](#)**):  
**<https://api.fixer.io/latest?symbols=USD,GBP>**

## REQUIRES API KEY

- Weather (**[Documentation](#)**):  
**[http://api.apixu.com/v1/current.json?key=YOUR\\_API\\_KEY\\_HERE&q=London](http://api.apixu.com/v1/current.json?key=YOUR_API_KEY_HERE&q=London)**
- Population Statistics (**[Documentation](#)**):  
**[http://ingstatsapi.inqubu.com/?api\\_key=YOUR\\_API\\_KEY\\_HERE&countries=us&data=population&years=1980:1990](http://ingstatsapi.inqubu.com/?api_key=YOUR_API_KEY_HERE&countries=us&data=population&years=1980:1990)**
- NASA Near Earth Objects (**[Documentation](#)**):  
**[https://api.nasa.gov/neo/rest/v1/feed?start\\_date=2016-12-24&end\\_date=2016-12-25&api\\_key=YOUR\\_API\\_KEY\\_HERE](https://api.nasa.gov/neo/rest/v1/feed?start_date=2016-12-24&end_date=2016-12-25&api_key=YOUR_API_KEY_HERE)**

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