

# 1.4 Jupyter – Markdown Cells

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
## 1 Markdown in Jupyter

This notebook is based on [Lectures on scientific computing with Python](#) by J.R. Johansson.

### 1.1 Markdown cells

Text can be added to Jupyter Notebooks using Markdown cells. You can change the cell type to Markdown by using the “Cell” -> “Cell Type” menu, or with a hardware keyboard shortcut M. Markdown is a popular markup language that is a superset of HTML. Its specification can be found here:

<https://daringfireball.net/projects/markdown/>

As noted earlier, markdown cells can either be **rendered** or **unrendered**. When they are rendered, you will see a nice formatted representation of the cell’s contents. When they are unrendered, you will see the raw text source of the cell. To render the selected cell, click the  button. To unrender, select the markdown cell, and then tap again on the rendered text.

### 1.2 Markdown basics

You can make text *italic* or **bold**.

You can build nested itemized or enumerated lists:

- One
  - Sublist
    - \* This
  - Sublist - That - The other thing
- Two
  - Sublist
- Three
  - Sublist

Now another list:

1. Here we go
  1. Sublist
  2. Sublist
2. There we go
3. Now this

You can add horizontal rules:

---

Here is a blockquote:

Beautiful is better than ugly. Explicit is better than implicit. Simple is better than complex. Complex is better than complicated. Flat is better than nested. Sparse is better than dense. Readability counts. Special cases aren't special enough to break the rules. Although practicality beats purity. Errors should never pass silently. Unless explicitly silenced. In the face of ambiguity, refuse the temptation to guess. There should be one – and preferably only one – obvious way to do it. Although that way may not be obvious at first unless you're Dutch. Now is better than never. Although never is often better than *right* now. If the implementation is hard to explain, it's a bad idea. If the implementation is easy to explain, it may be a good idea. Namespaces are one honking great idea – let's do more of those!

And shorthand for links:

[Jupyter's website](#)

## 1.3 Headings

You can add headings by starting a line with one (or multiple) `#` followed by a space, as in the following example:

```
# Heading 1
# Heading 2
## Heading 2.1
## Heading 2.2
```

## 1.4 Embedded code

You can embed code meant for illustration instead of execution in Python:

```
def f(x):
    """a docstring"""
    return x**2
```

or other languages:

```
if (i=0; i<n; i++) {
    printf("hello %d\n", i);
    x += 4;
}
```

## 1.5 LaTeX equations

Courtesy of MathJax, you can include mathematical expressions both inline:  $e^{i\pi} + 1 = 0$  and displayed:

$$e^x = \sum_{i=0}^{\infty} \frac{1}{i!} x^i$$

Inline expressions can be added by surrounding the latex code with \$:

$e^{i\pi} + 1 = 0$

Expressions on their own line are surrounded by \$\$:

$$e^x = \sum_{i=0}^{\infty} \frac{1}{i!} x^i$$

## 1.6 GitHub flavored markdown

The Notebook webapp supports Github flavored markdown meaning that you can use triple back-ticks for code blocks:

```
```python
print "Hello World"
```
```

```
```javascript
console.log("Hello World")
```
```

Gives:

```
print "Hello World"
console.log("Hello World")
```

And a table like this:

```
This	is
a	table
```

A nice HTML Table:

|      |       |
|------|-------|
| This | is    |
| a    | table |

## 1.7 General HTML

Because Markdown is a superset of HTML you can even add things like HTML tables:

Header 1

Header 2

row 1, cell 1

row 1, cell 2

row 2, cell 1

row 2, cell 2

## 1.8 Local files

If you have local files in your Notebook directory, you can refer to these files in Markdown cells directly:

```
[subdirectory/]<filename>
```

For example, in the images folder, we have the Python logo:

```

```

...And a video with the HTML5 video tag:

```
<video controls src="resources/animation.m4v" />
```

These do not embed the data into the notebook file, and require that the files exist when you are viewing the notebook.

### 1.8.1 Security of local files

Note that this means that the Jupyter notebook server also acts as a generic file server for files inside the same tree as your notebooks. Access is not granted outside the notebook folder so you have strict control over what files are visible, but for this reason it is highly recommended that you do not run the notebook server with a notebook directory at a high level in your filesystem (e.g. your home directory).

When you run the notebook in a password-protected manner, local file access is restricted to authenticated users unless read-only views are active.