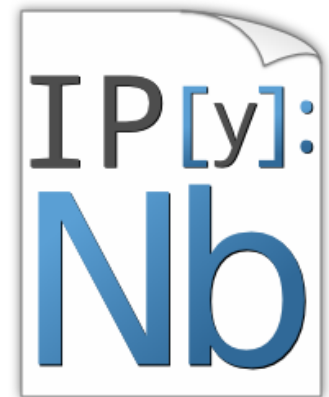# Nbconvert

Make things from notebooks

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Inside a notebook

```json
{
 "cells": [
  {
   "cell_type": "markdown",
   "metadata": {},
   "source": [
    "# Third Party Libraries With Rich Output"
   ]
  }, {
   "cell_type": "code",
   "execution_count": 1,
   "metadata": {},
   "outputs": [],
   "source": [
    "from IPython.display import display"
   ]
  },
  ...
```

Why convert?

- People without Notebook application
  - Nbviewer runs Nbconvert
- Extract code
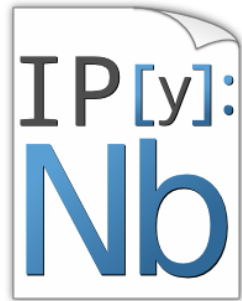- Notebooks in documentation
- Notebook operations

Command line
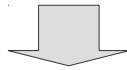
- Files

  `jupyter nbconvert --to pdf MyNotebook.ipynb`

- Pipes

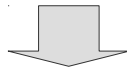 `| jupyter nbconvert --stdin --execute --to notebook --stdout |`
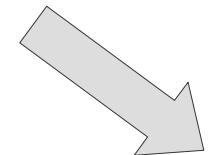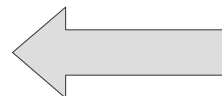
The chain

Preprocessors

Exporter

Output data

Files

Writer

(stdout)

Postprocessors

Exporters

- Turn notebook into output format

- Can use external tools, e.g. *pandoc*

- Most use templates (*Jinja2*)

```
24    {% block in_prompt -%}
25    <div class="prompt input_prompt">
26    {%- if cell.execution_count is defined -%}
27    In [{{ cell.execution_count|replace(None, " ") }}]:
28    {%- else -%}
29    In [ ]:
30    {%- endif -%}
31    </div>
32    {%- endblock in_prompt %}
33
34    {% block empty_in_prompt -%}
35    <div class="prompt input_prompt">
36    </div>
37    {%- endblock empty_in_prompt %}
38
```

Python API

```python
import nbformat
from nbconvert.exporters import RSTExporter

nb = nbformat.read('Presentation.ipynb',
                   as_version=4)
rst, res = \
    RSTExporter().from_notebook_node(nb)
```

Custom templates

- e.g. Hiding output

 michaelpacer/hiding_tags_nbconvert

Demo

Custom exporters

- e.g. nbconvert-reportlab

 takluyver/nbconvert-reportlab

- Entry points & distribution

Building into other projects

- Notebook application
  - 'Download as' & 'Print preview'
- **Nbviewer** & Github
- **Nbsphinx**
- Nbparameterise
- **Bookbook**

Demos

Future development

- Epub export

- Embedded notebooks

- Round-trip HTML?

- To docker/VM images?

  - Environment metadata

Links to demos

http://nbconvert.readthedocs.io/en/latest/customizing.html#Template-structure

https://github.com/michaelpacer/hiding_tags_nbconvert

https://github.com/takluyver/nbconvert-reportlab

http://nbviewer.jupyter.org/url/norvig.com/ipython/Convex%20Hull.ipynb

http://nbsphinx.readthedocs.io/en/stable/code-cells.html#ANSI-Colors

https://github.com/takluyver/bookbook