

# 1. Introduction to Sphinx

Sphinx is a widely used documentation generation tool, originally designed for Python projects. It converts reStructuredText (reST) or Markdown files into various formats like HTML, PDF, LaTeX, and ePub. Sphinx is especially known for generating sophisticated, professional documentation with features such as cross-referencing, version control integration, and extensibility through various plugins.

Although its primary focus is on Python projects, it can be adapted to work with Java by leveraging additional tools and configurations.

## 2. Sphinx Installation:

### 2.1 Setting up your project and development environment:

In a new directory, create a file called README.rst with the following content.

```
README.rst
Lumache
*****

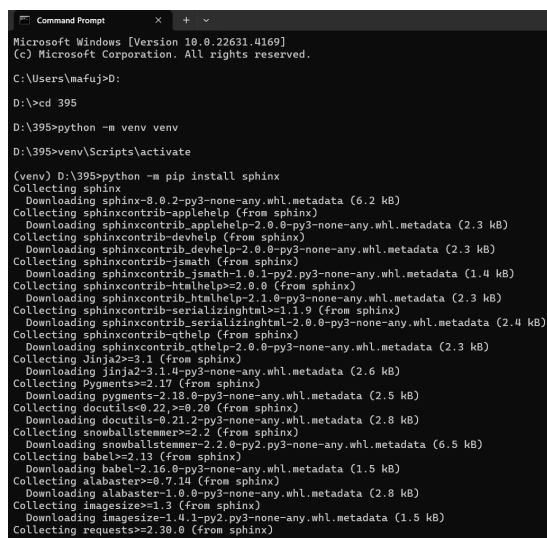
**Lumache** (/lu'make/) is a Python library for cooks and food lovers that
creates recipes mixing random ingredients.
```

Figure 2.1

## 2.2 Create Python Virtual Environment and install the required tools.

For that, open a command line terminal, cd into the directory you just created, and run the following commands:by following steps:

- `python -m venv .venv`
- `source .venv/bin/activate`
- `python -m pip install sphinx`



```

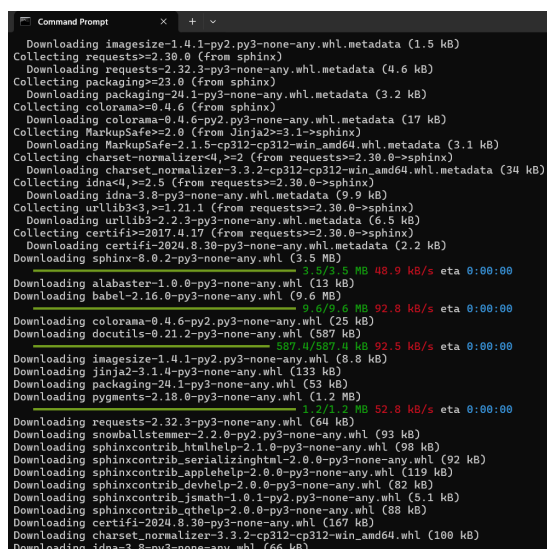
Microsoft Windows [Version 10.0.22631.4169]
(c) Microsoft Corporation. All rights reserved.

C:\Users\mafuj>D:
D:\>cd 395
D:\395>python -m venv .venv
D:\395>.venv\Scripts\activate

(.venv) D:\395>python -m pip install sphinx
Collecting sphinx
  Downloading sphinx-8.0.2-py3-none-any.whl.metadata (6.2 kB)
Collecting sphinxcontrib-applehelp (from sphinx)
  Downloading sphinxcontrib_applehelp-2.0.0-py3-none-any.whl.metadata (2.3 kB)
Collecting sphinxcontrib-devhelp (from sphinx)
  Downloading sphinxcontrib_devhelp-2.0.0-py3-none-any.whl.metadata (2.3 kB)
Collecting sphinxcontrib-jsmath (from sphinx)
  Downloading sphinxcontrib_jsmath-1.0.1-py2.py3-none-any.whl.metadata (1.4 kB)
Collecting sphinxcontrib-htmlhelp (from sphinx)
  Downloading sphinxcontrib_htmlhelp-2.1.0-py3-none-any.whl.metadata (2.3 kB)
Collecting sphinxcontrib-serializinghtml (from sphinx)
  Downloading sphinxcontrib_serializinghtml-2.0.0-py3-none-any.whl.metadata (2.4 kB)
Collecting sphinxcontrib-qthelp (from sphinx)
  Downloading sphinxcontrib_qthelp-2.0.0-py3-none-any.whl.metadata (2.3 kB)
Collecting Jinja2>=3.1 (from sphinx)
  Downloading Jinja2-3.1.4-py3-none-any.whl.metadata (2.6 kB)
Collecting Pygments>=2.17 (from sphinx)
  Downloading pygments-2.18.0-py3-none-any.whl.metadata (2.5 kB)
Collecting docutils<0.22,>=0.20 (from sphinx)
  Downloading docutils-0.21.2-py3-none-any.whl.metadata (2.8 kB)
Collecting snowballstemmer>=2.2 (from sphinx)
  Downloading snowballstemmer-2.2.0-py2.py3-none-any.whl.metadata (6.5 kB)
Collecting babel>=2.13 (from sphinx)
  Downloading babel-2.16.0-py3-none-any.whl.metadata (1.5 kB)
Collecting alabaster>=0.7.10 (from sphinx)
  Downloading alabaster-1.0.0-py3-none-any.whl.metadata (2.8 kB)
Collecting imagesize>=1.3 (from sphinx)
  Downloading imagesize-1.4.1-py2.py3-none-any.whl.metadata (1.5 kB)
Collecting requests>=2.30.0 (from sphinx)

```

Figure 2.2



```

  Downloading imagesize-1.4.1-py2.py3-none-any.whl.metadata (1.5 kB)
Collecting requests>=2.30.0 (from sphinx)
  Downloading requests-2.32.3-py3-none-any.whl.metadata (4.6 kB)
Collecting packaging>=23.0 (from sphinx)
  Downloading packaging-24.1-py3-none-any.whl.metadata (3.2 kB)
Collecting colorama>=0.4.6 (from sphinx)
  Downloading colorama-0.4.6-py2.py3-none-any.whl.metadata (17 kB)
Collecting MarkupSafe>=2.0 (from Jinja2>=3.1->sphinx)
  Downloading MarkupSafe-2.1.5-cp312-cp312-win_amd64.whl.metadata (3.1 kB)
Collecting charset-normalizer<4,>=2 (from requests>=2.30.0->sphinx)
  Downloading charset_normalizer-3.3.2-cp312-cp312-win_amd64.whl.metadata (34 kB)
Collecting idna<4,>=2.5 (from requests>=2.30.0->sphinx)
  Downloading idna-3.8-py3-none-any.whl.metadata (9.9 kB)
Collecting urllib3<3,>=1.21.1 (from requests>=2.30.0->sphinx)
  Downloading urllib3-2.2.3-py3-none-any.whl.metadata (6.5 kB)
Collecting certifi>=2017.4.17 (from requests>=2.30.0->sphinx)
  Downloading certifi-2024.8.30-py3-none-any.whl.metadata (2.2 kB)
Downloading sphinx-8.0.2-py3-none-any.whl (3.5 MB)
 9.6/9.6 MB 48.9 kB/s eta 0:00:00
Downloading alabaster-1.0.0-py3-none-any.whl (13 kB)
 9.6/9.6 MB 92.8 kB/s eta 0:00:00
Downloading babel-2.16.0-py3-none-any.whl (9.6 MB)
 9.6/9.6 MB 92.8 kB/s eta 0:00:00
Downloading colorama-0.4.6-py2.py3-none-any.whl (25 kB)
 587.4/587.4 kB 92.5 kB/s eta 0:00:00
Downloading docutils-0.21.2-py3-none-any.whl (587 kB)
 587.4/587.4 kB 92.5 kB/s eta 0:00:00
Downloading imagesize-1.4.1-py2.py3-none-any.whl (8.8 kB)
 127.4/127.4 kB 52.8 kB/s eta 0:00:00
Downloading Jinja2-3.1.4-py3-none-any.whl (133 kB)
 127.4/127.4 kB 52.8 kB/s eta 0:00:00
Downloading packaging-24.1-py3-none-any.whl (53 kB)
 127.4/127.4 kB 52.8 kB/s eta 0:00:00
Downloading pygments-2.18.0-py3-none-any.whl (1.2 MB)
 1.2/1.2 MB 52.8 kB/s eta 0:00:00
Downloading requests-2.32.3-py3-none-any.whl (64 kB)
 64.0/64.0 kB 52.8 kB/s eta 0:00:00
Downloading snowballstemmer-2.2.0-py2.py3-none-any.whl (93 kB)
 93.0/93.0 kB 52.8 kB/s eta 0:00:00
Downloading sphinxcontrib_htmlhelp-2.1.0-py3-none-any.whl (98 kB)
 98.0/98.0 kB 52.8 kB/s eta 0:00:00
Downloading sphinxcontrib-serializinghtml-2.0.0-py3-none-any.whl (92 kB)
 92.0/92.0 kB 52.8 kB/s eta 0:00:00
Downloading sphinxcontrib-applehelp-2.0.0-py3-none-any.whl (119 kB)
 119.0/119.0 kB 52.8 kB/s eta 0:00:00
Downloading sphinxcontrib-devhelp-2.0.0-py3-none-any.whl (82 kB)
 82.0/82.0 kB 52.8 kB/s eta 0:00:00
Downloading sphinxcontrib_jsmath-1.0.1-py2.py3-none-any.whl (5.1 kB)
 5.1/5.1 kB 52.8 kB/s eta 0:00:00
Downloading sphinxcontrib_qthelp-2.0.0-py3-none-any.whl (88 kB)
 88.0/88.0 kB 52.8 kB/s eta 0:00:00
Downloading certifi-2024.8.30-py3-none-any.whl (167 kB)
 167.0/167.0 kB 52.8 kB/s eta 0:00:00
Downloading charset_normalizer-3.3.2-cp312-cp312-win_amd64.whl (100 kB)
 100.0/100.0 kB 52.8 kB/s eta 0:00:00
Downloading idna-3.8-py3-none-any.whl (66 kB)
 66.0/66.0 kB 52.8 kB/s eta 0:00:00

```

Figure 2.3

Figure 2.4

Figure 2.5

## 2.3 Creating the documentation layout

This will present to you a series of questions required to create the basic directory and configuration layout for your project inside the docs folder. To proceed, answer each question as follows:

- After the last question, you will see the new docs directory with the following content.

```

You have two options for placing the build directory for Sphinx output.
Either, you use a directory "build" within the root path, or you separate
"source" and "build" directories within the root path.
> Separate source and build directories (y/n) [n]: y

The project name will occur in several places in the built documentation.
> Project name: Lumache
> Author name(s): Graziella
> Project release []: 0.1

If the documents are to be written in a language other than English,
you can select a language here by its language code. Sphinx will then
translate text that it generates into that language.

For a list of supported codes, see
https://www.sphinx-doc.org/en/master/usage/configuration.html#confval-language.
> Project language [en]:

Creating file D:\395\docs\source\conf.py.
Creating file D:\395\docs\source\index.rst.
Creating file D:\395\docs\Makefile.
Creating file D:\395\docs\make.bat.

```

Figure 2.6

Thanks to this bootstrapping step, you already have everything needed to render the documentation as HTML for the first time. To do that, run this command:

```
sphinx-build -M html docs/source/ docs/build/
```

And finally, open docs/build/html/index.html in your browser. You should see something like this:

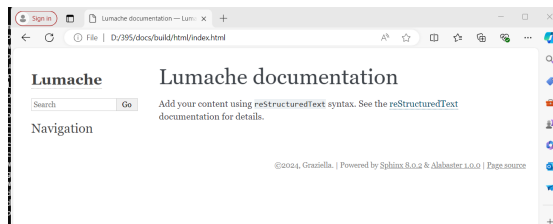


Figure 2.7

Freshly created documentation of Lumache

There we go! You created your first HTML documentation using Sphinx.

For your better understanding and explore more about Sphinx you can visit Sphinx websites by clicking below link: <https://www.sphinx-doc.org/en/>

My second user story is about “How much access without signing in”.

Our system permit Guest user to access some features like, 1. Browse the full product catalog. 2. View daily offers and special deals. 3. View available payment methods. 4. Add items to their cart without creating an account, but they will be prompted to log in or sign up to complete a purchase.