notebook

April 27, 2023

```python
[36]: import os
      import nbformat as nbf
      from nbformat.v4 import new_code_cell, new_markdown_cell

      def create_ipynb_from_repo(repo_path, output_filename):
          nb = nbf.v4.new_notebook()
          cells = []

          for root, dirs, files in os.walk(repo_path):
              for file in files:
                  if file.endswith('.md') or file.endswith('.py'):
                      file_path = os.path.join(root, file)
                      rel_path = os.path.relpath(file_path, repo_path)
                      file_url = f"https://github.com/your_username/your_repo_name/
      ↪blob/main/{rel_path}"

                      cells.append(new_markdown_cell(f"## [{rel_path}]({file_url})"))

                      with open(file_path, 'r') as f:
                          file_content = f.read()
                          if file.endswith('.md'):
                              cells.append(new_markdown_cell(file_content))
                          else:
                              cells.append(new_code_cell(file_content))

          nb['cells'] = cells

          with open(output_filename, 'w') as f:
              nbf.write(nb, f)

      if __name__ == '__main__':
          repo_path = "."
          output_filename = "combined.ipynb"
          create_ipynb_from_repo(repo_path, output_filename)
```

```python
[37]: import os
      import yaml
```

```python
def create_yaml_from_repo(repo_path, output_filename):
    def add_to_dict_hierarchy(d, path_parts, file):
        if len(path_parts) == 1:
            d[path_parts[0]] = file
        else:
            if path_parts[0] not in d:
                d[path_parts[0]] = {}
            add_to_dict_hierarchy(d[path_parts[0]], path_parts[1:], file)

    repo_dict = {}

    for root, dirs, files in os.walk(repo_path):
        # Ignore .git directories
        if ".git" in root:
            continue

        for file in files:
            file_path = os.path.join(root, file)
            rel_path = os.path.relpath(file_path, repo_path)
            path_parts = rel_path.split(os.sep)

            add_to_dict_hierarchy(repo_dict, path_parts, file)

    with open(output_filename, 'w') as f:
        yaml.dump(repo_dict, f, sort_keys=True, indent=4)

if __name__ == '__main__':
    repo_path = "."
    output_filename = "repository_structure.yaml"
    create_yaml_from_repo(repo_path, output_filename)
```

```python
[40]: %pip install nbconvert
import nbconvert
import os

def convert_ipynb_to_pdf(input_file, output_file):
    os.system(f"jupyter nbconvert --to pdf {input_file} --output {output_file}")

if __name__ == "__main__":
    input_file = "combined.ipynb"
    output_file = "Digital_Twin_Guide.pdf"
    convert_ipynb_to_pdf(input_file, output_file)
```

Requirement already satisfied: nbconvert in c:\users\todd_\appdata\local\package
s\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (7.3.1)
Requirement already satisfied: jinja2>=3.0 in c:\users\todd_\appdata\local\packa

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ges\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (3.1.2)
Requirement already satisfied: defusedxml in c:\users\todd_\appdata\local\packag
es\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (0.7.1)
Requirement already satisfied: jupyter-core>=4.7 in c:\users\todd_\appdata\local
\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (5.3.0)
Requirement already satisfied: pygments>=2.4.1 in c:\users\todd_\appdata\local\p
ackages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (2.14.0)
Requirement already satisfied: tinycss2 in c:\users\todd_\appdata\local\packages
\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (1.2.1)
Requirement already satisfied: traitlets>=5.0 in c:\users\todd_\appdata\local\pa
ckages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (5.9.0)
Requirement already satisfied: bleach in c:\users\todd_\appdata\local\packages\p
ythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (6.0.0)
Requirement already satisfied: markupsafe>=2.0 in c:\users\todd_\appdata\local\p
ackages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (2.1.1)
Requirement already satisfied: nbformat>=5.1 in c:\users\todd_\appdata\local\pac
kages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (5.8.0)
Requirement already satisfied: beautifulsoup4 in c:\users\todd_\appdata\local\pa
ckages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (4.12.1)
Requirement already satisfied: packaging in c:\users\todd_\appdata\local\package
s\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (21.3)
Requirement already satisfied: jupyterlab-pygments in c:\users\todd_\appdata\loc
al\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (0.2.2)
Requirement already satisfied: mistune<3,>=2.0.3 in c:\users\todd_\appdata\local
\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (2.0.5)
Requirement already satisfied: nbclient>=0.5.0 in c:\users\todd_\appdata\local\p
ackages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from nbconvert) (0.7.4)
Requirement already satisfied: pandocfilters>=1.4.1 in c:\users\todd_\appdata\lo
cal\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local
-packages\python310\site-packages (from nbconvert) (1.5.0)
Requirement already satisfied: platformdirs>=2.5 in c:\users\todd_\appdata\local
\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-
packages\python310\site-packages (from jupyter-core>=4.7->nbconvert) (3.3.0)
Requirement already satisfied: pywin32>=300 in c:\users\todd_\appdata\local\pack
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ages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from jupyter-core>=4.7->nbconvert) (306)
Requirement already satisfied: jupyter-client>=6.1.12 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from nbclient>=0.5.0->nbconvert) (8.2.0)
Requirement already satisfied: fastjsonschema in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from nbformat>=5.1->nbconvert) (2.16.3)
Requirement already satisfied: jsonschema>=2.6 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from nbformat>=5.1->nbconvert) (4.17.3)
Requirement already satisfied: soupsieve>1.2 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from beautifulsoup4->nbconvert) (2.4)
Requirement already satisfied: six>=1.9.0 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from bleach->nbconvert) (1.16.0)
Requirement already satisfied: webencodings in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from bleach->nbconvert) (0.5.1)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from packaging->nbconvert) (3.0.9)
Requirement already satisfied: pyrsistent!=0.17.0,!=0.17.1,!=0.17.2,>=0.14.0 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert) (0.19.3)
Requirement already satisfied: attrs>=17.4.0 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert) (22.2.0)
Requirement already satisfied: tornado>=6.2 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from jupyter-client>=6.1.12->nbclient>=0.5.0->nbconvert) (6.3.1)
Requirement already satisfied: pyzmq>=23.0 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from jupyter-client>=6.1.12->nbclient>=0.5.0->nbconvert) (25.0.2)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\todd_\appdata\local\packages\pythonsoftwarefoundation.python.3.10_qbz5n2kfra8p0\localcache\local-packages\python310\site-packages (from jupyter-client>=6.1.12->nbclient>=0.5.0->nbconvert) (2.8.2)
Note: you may need to restart the kernel to use updated packages.

[notice] A new release of pip is available: 23.0.1 -> 23.1.1
[notice] To update, run: C:\Users\todd_\AppData\Local\Microsoft\WindowsApps\Pyth

```
onSoftwareFoundation.Python.3.10_qbz5n2kfra8p0\python.exe -m pip install
--upgrade pip
```