

Developing modular pipeline components with Viash : : **CHEAT SHEET**

Example Viash config (config.vsh.yaml)

```
functionality:
  name: mycomponent
  description: |
    A useful description of the functionality
    provided by this component.
  usage: mycomponent --input foo.txt --output bar.txt
  arguments:
    - name: "--input"
      alternatives: ["-i"]
      type: file
      description: Input text file.
    - name: "--output"
      alternatives: ["-o"]
      type: file
      direction: output
  resources:
    - type: python_script
      path: script.py
  tests:
    - type: python_script
      path: test.py
  runners:
    - type: executable
    - type: nextflow
  engines:
    - type: docker
      image: "python:3.8"
      setup: [...] # further customisation of container
    - type: native
```

Example main script (script.py)

```
## VIASH START
# this codeblock is for debugging purposes and
# is removed by Viash at runtime.
par = {'input': 'debugging.txt', 'output': 'out.txt'}
## VIASH END

# do something with par dict
print(f"Input: {par['input']}")
print(f"Output: {par['output']}")
```

Common commands during the development cycle

Prototyping and testing

<code>viash run config.vsh.yaml -- \</code> <code>--help</code>	Display CLI help page. (Auto-generated from config file)
<code>viash run config.vsh.yaml -- \</code> <code>-i in.txt -o out.txt</code>	Run a component. (CLI auto-generated from config file)
<code>viash run config.vsh.yaml \</code> <code>-e native -- <args></code>	Run a component natively.
<code>viash run config.vsh.yaml \</code> <code>-e docker -- <args></code>	Run a component inside a Docker. (Input files mounted automatically)
<code>viash test config.vsh.yaml</code>	Run unit tests and display results.

Docker-specific commands

<code>viash run config.vsh.yaml \</code> <code>-e docker -- ---dockerfile</code>	View the Dockerfile used by Viash to build the Docker container.
<code>viash run config.vsh.yaml \</code> <code>-e docker -- ---setup build</code>	Rebuild a Docker container from scratch.

Building and deploying

<code>viash build config.vsh.yaml \</code> <code>-e docker -o bin</code>	Build a component into a containerised standalone executable.
<code>bin/method --help</code>	Show help page (same as above)
<code>bin/method -i in.txt -o out.txt</code>	Run a component (same as above)
<code>viash build config.vsh.yaml \</code> <code>-r nextflow -o modules</code>	Build a component into a standalone Nextflow module

Releasing and maintaining

<code>viash ns build</code>	Build all components under src/
<code>viash ns test</code>	Test all components under src/