



# Installation

1. Python environnement
2. Install GATE
3. Check and test
4. Install exercices

# Virtual environment

- Use a **terminal** as a command line interface
- Use an **editor** to write python scripts

**Step1:** Create a Python environment

```
$ python --version  
Python 3.12.7
```

```
$ python -m venv venv_opengate
```

```
$ source venv_opengate/bin/activate
```

This create a folder  
named *venv\_opengate*

This activate the virtual  
environment

# Virtual environment

This is needed **every time** you open a new terminal !

You **must** be in the folder that contains *venv\_opengate* folder

```
$ source venv_opengate/bin/activate
```

The virtual environment will contain all software installed by GATE

# Installation

Step2: Install GATE in the environment

```
$ pip install opengate
```

```
[oh-my-zsh] plugin 'macos' not found
```

Installation: Geant4,  
ITK, Gate, etc



# Installation

Step3: Print info. First time: install associated data (Geant4)

```
$ opengate_info
```

```
Python version 3.12.2 | packaged by conda-forge | (main, Feb 16 2024, 20:54:21) [Clang 16.0.6 ]
Platform darwin
Site package /Users/dsarrut/src/py/miniconda3/envs/gate_3_12/lib/python3.12/site-packages
Geant4 version geant4-11-01-patch-01 [MT]
Geant4 MT True
Geant4 GDML False
Geant4 date (10-February-2023)
Geant4 data /Users/dsarrut/src/gate2/opengate/core/opengate_core/geant4_data
ITK version 5.2.1
GATE version 10.0b7
GATE folder /Users/dsarrut/src/gate2/opengate/opengate
GATE git sha 46d4376e10c9713a754a6e17b5f6eab1fc533686
GATE date 2024-05-06 08:40:36+02:00 (last commit)
```

# Installation

**Step4:** run tests. First time: install associated data (Geant4)

```
$ opengate_tests
```

```
Looking for tests in: /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/src
Ignoring: test015_iec_phantom_4_wip.py
Ignoring: test039_hits_memory_check_mp_wip.py
Ignoring: test013_phys_lists_2_wip.py
Ignoring: test043_garf_training_dataset_full_wip.py
Ignoring: test013_phys_lists_5_wip.py
Ignoring: test024_py_actor_wip.py
Ignoring: test018_pet_wip.py
Ignoring: test060_phsp_source_particletype_fromphs_particlename_wip.py
Ignoring: test013_phys_lists_3_wip.py
Ignoring: test021_voxel_source_old_wip.py
Ignoring: test045_speedup_all_wip.py
Running 189 tests
-----
Running: test001_g4threewector.py      OK      1.9 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test001_g4threewector.py.log
Running: test002_g4string.py           OK      1.8 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test002_g4string.py.log
Running: test003_g4material.py         OK      2.1 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test003_g4material.py.log
Running: test004_simple.py             OK      2.8 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test004_simple.py.log
Running: test004_simple_mt.py          OK      5.7 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test004_simple_mt.py.log
Running: test004_simple_subprocess.py  OK      6.6 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test004_simple_subprocess.py.log
Running: test004_simulation_stats_actor.py OK      2.7 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test004_simulation_stats_actor.py.l
Running: test005_proton.py             OK      2.8 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test005_proton.py.log
Running: test006_runs.py              OK      2.3 s   /Users/dsarrut/src/gate2/opengate/opengate/tests/./tests/log/test006_runs.py.log
```

# Exercices

WARNING: LFS need to be installed first <https://git-lfs.com>

```
$ git lfs install
```

```
$ git clone https://gitlab.in2p3.fr/davidsarrut/gate_exercices_2.git
```

```
$ cd gate_exercices_2
```

```
$ pip install -r requirements.txt
```

```
$ ./download_data.py
```

This will download a folder named "gate\_exercices\_2" that contains all examples

# URLs

- Source code

[https://gitlab.in2p3.fr/davidsarrut/gate\\_exercices\\_2](https://gitlab.in2p3.fr/davidsarrut/gate_exercices_2)

- Data

<https://www.creatis.insa-lyon.fr/~dsarrut/dqprm/gate-exercices/2025>

# Editors

Goal: read and edit the Python code

You can use the one you prefer. Examples:

- Spyder
- VS code
- Pycharm
- gedit
- ... many others !