uv Fast Python package manager

CONCEPTS

uv run and uv add lock and sync automatically, so you rarely need uv lock or uv sync by hand. Commit uv.lock; keep .venv out of git.

pyproject.toml your dependencies
↓ uv lock
uv.lock exact pinned versions
↓ uv sync
.venv installed packages
↓ uv run
Your command runs inside .venv
Project workflow

uv pip ... is a drop-in style interface for existing venvs and requirements files; it does not touch pyproject.toml or uv.lock. Use uv add for projects.

PROJECTS

`uv init <name>`
Create a project in a new directory

`uv init`
Initialise the current directory

`uv init --lib <name>`
Library layout with src/ and build system

`uv init --app <name>`
Application project

PROJECTS (cont.)

`uv add <pkg>...`
Add dependencies and install them

`uv add '<pkg>≥<ver>'`
Add with a version constraint

`uv add --dev <pkg>`
Add to the dev dependency group

`uv add --group <name> <pkg>`
Add to a named dependency group

`uv add -r requirements.txt`
Import dependencies from a requirements file

`uv remove <pkg>...`
Remove dependencies

`uv sync`
Make .venv match the lockfile exactly

`uv sync --locked`
Fail if uv.lock is out of date (CI)

`uv sync --frozen`
Install from uv.lock without re-locking

`uv sync --no-dev`
Skip the dev group

`uv sync --all-extras`
Include every optional extra

`uv lock`
Write or update uv.lock

PROJECTS (cont.)

`uv lock --upgrade`
Re-resolve to the newest allowed versions

`uv lock --upgrade-package <pkg>`
Upgrade one package only

`uv tree`
Show the dependency tree

`uv export -o requirements.txt`
Export the lock as a requirements file

`uv build`
Build sdist and wheel into dist/

RUNNING

`uv run <cmd> [args]`
Run a command in the project environment

`uv run python`
Python REPL with project deps

`uv run <script.py>`
Run a script (inline metadata is honoured)

`uv run --with <pkg> <cmd>`
Add a temporary dependency for this run

`uv run --no-project <script.py>`
Ignore the surrounding project

RUNNING (cont.)

`uv run --python <ver> <cmd>`
Run on a specific Python version

`uv run --no-sync <cmd>`
Skip the auto-sync step

`uv init --script <file.py>`
Create a script with inline metadata

`uv add --script <file.py> <pkg>`
Declare a script's dependencies

TOOLS

`uvx <tool> [args]`
Run a tool in a throwaway env

`uvx <tool>@<ver> [args]`
Run an exact version

`uvx --from <pkg> <cmd>`
Command name differs from package name

`uv tool install <pkg>`
Install a tool onto PATH

`uv tool list`
List installed tools

PYTHON VERSIONS

`uv python install <ver>`
Download a managed Python

PYTHON VERSIONS (cont.)

`uv python list`
Show available and installed Pythons

`uv python pin <ver>`
Write .python-version for this directory

VIRTUAL ENVS AND PIP

`uv venv [<path>]`
Create a venv (default .venv)

`uv venv --python <ver>`
Create with a specific Python

`uv pip install <pkg>`
Install into the active or local .venv

`uv pip install -r requirements.txt`
Install from a requirements file

`uv pip compile <in> -o requirements.txt`
Resolve to a pinned requirements file

CACHE AND SELF

`uv --version`
Print the uv version

`uv help <command>`
Show help for a command