

## Introduction

**pixi** is a modern, cross-platform package manager and workflow tool built on top of the Conda ecosystem. It focuses on speed, reproducibility, and a seamless developer experience.

## Project Initialization

- `pixi init`: Initialize a new project (creates `pixi.toml`).
- `pixi init --import environment.yml`: Import an existing Conda environment file.

## Dependency Management

- `pixi add [package]`: Add a dependency to the project (e.g., `pixi add python numpy`).
- `pixi add --pypi [package]`: Add a Python package directly from PyPI.
- `pixi remove [package]`: Remove a dependency.
- `pixi install`: Install all dependencies specified in `pixi.toml` and generate/update `pixi.lock`.

## Running Tasks and Environments

- `pixi run [task_name]`: Execute a task defined in the `[tasks]` section of `pixi.toml`.
- `pixi shell`: Start a shell within the project's isolated environment.
- `pixi run python main.py`: Run a command directly in the environment without entering the shell.

## Configuration (pixi.toml)

```
[project]
name = "my_project"
channels = ["conda-forge"]
platforms = ["linux-64", "osx-arm64",
"win-64"]
```

```
[dependencies]
python = "≥3.10"
pandas = "*"

[tasks]
```

```
start = "python main.py"
test = "pytest"
```

## Multi-environment Support

Add different environments for testing, production, or different Python versions.

```
[environments]
test = ["test-dependencies"]
```

Use `pixi run -e test [command]` to run within a specific environment.

## Global Installation

- `pixi global install [package]`: Install a tool globally for use outside specific projects (replaces `conda install -g` or `pipx`).
- `pixi global list`: List globally installed tools.

## Why pixi? (Pro Tips)

### Lock Files

Pixi always generates a `pixi.lock` file, ensuring that every contributor and CI system uses the exact same versions of all dependencies.

### Speed

Written in Rust, it is significantly faster than traditional `conda` and even `mamba` in many operations.

### No Conda required

Pixi is a standalone binary. You don't need to have Conda or Mamba installed on your system to use it.

### Zero-config CI

Since all environment information is in `pixi.toml`, setting up a CI pipeline is as simple as running `pixi run [task]`.