# Cargo Rust package manager

## CONCEPTS

Use cargo check while editing: it skips code generation and is much faster than build.

**Workspace** root Cargo.toml, Cargo.lock, target/

**Package** one Cargo.toml, a crate or more

**Target** lib, bin, example, test, bench

A workspace shares one Cargo.lock and one target/ directory

Cargo.toml is what you edit; Cargo.lock records the exact resolved versions. Commit the lock for binaries.

Arguments after -- go to the program or test harness, not to Cargo.

## PROJECTS

`cargo new <name>`
Create a binary package

`cargo init`
Make the current directory a package

`cargo run`
Build and run the binary

`cargo install <crate>`
Install a binary crate

## BUILD & CHECK

`cargo build`
Compile in the dev profile

`cargo build --release`
Compile with optimisations

`cargo check`
Type-check without building

## TEST & LINT

`cargo test`
Run unit, integration and doc tests

`cargo test <filter>`
Run tests whose name contains text

## TEST & LINT (cont.)

`cargo test -- --nocapture`
Show output of passing tests

`cargo fmt`
Format with rustfmt

`cargo clippy`
Lint with Clippy

## DEPENDENCIES

`cargo add <crate>`
Add a dependency

`cargo add --dev <crate>`
Add a dev-dependency

`cargo remove <crate>`
Remove a dependency

`cargo update`
Update Cargo.lock within semver

`cargo tree`
Show the dependency tree

`cargo tree -i <crate>`
Who depends on this crate?

## FEATURES

`cargo build --features <list>`
Enable features

`cargo build --no-default-features`
Turn off the default feature set

## WORKSPACES

`cargo build --workspace`
Build every member

`cargo test -p <pkg>`
Test one package

`cargo build -p <pkg>`
Build one package

## PUBLISHING

`cargo publish --dry-run`
Run all checks, upload nothing

`cargo publish`
Upload to crates.io