rustfmt Rust code formatter

CONCEPTS

cargo fmt reads the edition from Cargo.toml; bare rustfmt assumes 2015 unless told otherwise.

Source files *.rs
↓ parse (edition)
rustfmt rustfmt.toml + style_edition
↓ emit
Result files, stdout or diff

edition controls parsing; style_edition controls the formatting rules. Set both in rustfmt.toml.

Unstable options need nightly plus unstable_features = true; stable rustfmt ignores them with a warning.

INSTALL AND RUN

rustup component add rustfmt
Install on the stable toolchain

cargo fmt
Format all targets of the crate

cargo fmt --all
Format every workspace member

cargo fmt -- <rustfmt-args>
Pass flags through to rustfmt

cargo +nightly fmt
Run the nightly formatter

rustfmt <file.rs>
Format a file and its out-of-line modules

CHECKING AND OUTPUT

cargo fmt --check
Exit 1 and print a diff if unformatted

cargo fmt --all -- --check
Check the whole workspace in CI

rustfmt --check <file.rs>
Check one file without writing

Exit codes: --check returns 1 on needed changes; other modes return 1 only on errors (parse failure).

CONFIGURATION

rustfmt.toml / .rustfmt.toml
Config file in the project or any parent dir

CONFIGURATION (cont.)

rustfmt --print-config default rustfmt.toml
Write all defaults to a file

rustfmt --config max_width=80 <file.rs>
Override an option from the CLI

edition = "2021"
Parse with this language edition

style_edition = "2024"
Pick the style guide edition

rustfmt --edition 2021 <file.rs>
Set the edition on the command line

Set edition and style_edition in rustfmt.toml so cargo fmt and plain rustfmt agree.

COMMON OPTIONS (STABLE)

max_width = 100
Maximum line width

tab_spaces = 4
Spaces per indent level

use_small_heuristics = "Default"
Scale small-width limits: Off, Max, Default

NIGHTLY-ONLY OPTIONS

unstable_features = true
Opt in to unstable options

imports_granularity = "Crate"
Merge imports: Preserve, Crate, Module, Item, One

group_imports = "StdExternalCrate"
Group imports: Preserve, StdExternalCrate, One

wrap_comments = true
Re-wrap long comments

format_code_in_doc_comments
Format Rust code blocks in docs

ignore = ["<path>"]
Skip files/dirs (gitignore patterns)

SKIPPING AND ATTRIBUTES

#[rustfmt::skip]
Do not format the next item or statement