Rake Ruby task runner

START HERE

`rake`
Run the default task

`rake -n <task>`
Dry run: show what would run

`rake <task>`
Run one task

`rake -j <N>`
Run with N threads

`rake -T`
List tasks that have a desc

`rake <task>[<arg>,<arg>]`
Pass task arguments

`rake -P`
Show tasks and their prerequisites

`rake -t <task>`
Trace invoke and execute

Rakefile Ruby DSL → load → **Task graph** tasks + prereqs → resolve → **Prerequisites** each runs once → then → **Task block** Ruby code

Rake resolves prerequisites before running a task

CONCEPTS

A Rakefile is plain Ruby. A task runs its prerequisites first, once per run, then its block. Use do...end, not braces, so prerequisites bind correctly.

Rake looks for Rakefile, rakefile, Rakefile.rb or rakefile.rb in the current directory, then in parent directories. Tasks run from the Rakefile's directory.

Only tasks with a desc appear in rake -T. Use rake -T -A or rake -P to see the rest. Quote task arguments in zsh: rake 'build[x]'.

RUN

`rake`
Run the default task

`rake <task> <task>`
Run several tasks in order

`rake <ns>:<task>`
Run a namespaced task

`rake -n <task>`
Dry run: print tasks without executing

`rake -j <N>`
Run up to N tasks concurrently
Only tasks that are independent run in parallel; multitask and -m force it.

`rake -m`
Treat all tasks as multitasks

`rake -f <file>`
Use another Rakefile

`rake -N`
Do not search parent directories

`rake -R <dir>`
Auto-load .rake files from dir
Default is rakelib/.

`rake -g`
Use system-wide rakefiles only

`rake <NAME>=<value>`
Set an ENV variable for the run

`bundle exec rake <task>`
Run with the bundled gem versions

INSPECT

`rake -T`
List tasks that have a desc

`rake -T <pattern>`
List tasks matching pattern

`rake -T -A`
List all tasks, including undocumented

INSPECT (cont.)

`rake -D <task>`
Show the long description of tasks

`rake -P`
List tasks with prerequisites

`rake -W <task>`
Show where a task is defined

`rake -W --comments`
Locate only tasks with comments

`rake --rules`
Trace how rules resolve tasks

`rake -V`
Print the Rake version

`rake -H`
Show help

DEBUG AND OUTPUT

`rake -t`
Trace invoke and execute, with backtraces

`rake --backtrace`
Show full backtraces on errors

`rake --suppress-backtrace <regex>`
Hide matching backtrace lines

`rake -v`
Echo shell commands run by FileUtils

`rake -q`
Do not echo FileUtils commands

`rake -s`
Quiet, and no in directory message

`rake -r <lib>`
Require a library before the Rakefile

`rake -I <dir>`
Add dir to the require path

`rake -e '<ruby>'`
Run Ruby code and exit

`rake -p '<ruby>'`
Run Ruby code, print result, exit

DEFINE TASKS

`task :<name> do ... end`
Define a task

`task <name>: %w[<a> <b>]`
Task with prerequisites

`task default: :<name>`
Set the default task

`desc '<text>'`
Describe the next task for -T

DEFINE TASKS (cont.)

`namespace :<ns> do ... end`
Group tasks under a prefix

`task :<name>, [:<a>, :<b>] do |t, args|`
Task with named arguments

`args.with_defaults(<a>: <v>)`
Default values for arguments

`task :<name> => :environment`
Load Rails app first (Rails)

`Rake::Task[:<name>].invoke`
Call a task once from Ruby
Skipped if it already ran in this process.

`Rake::Task[:<name>].reenable`
Allow a task to run again

`Rake::Task[:<name>].execute`
Run a task's actions, ignoring prerequisites

`task :<name>, [:<a>] => [:<pre>]`
Arguments plus prerequisites

`^<task>` / `rake:<task>`
Parent / top-level lookup inside a namespace

`multitask :<name> => %w[<a> <b>]`
Run prerequisites in parallel

FILES AND HELPERS

`file '<out>' => %w[<src>] do |t|`
Rebuild when a source is newer

`directory '<path>'`
Create a directory (and parents) on demand

`rule '.o' => '.c' do |t|`
Pattern rule for generated files

`t.name / t.source`
Target name / rule source in a block

`t.prerequisites`
Prerequisite names in a block

`FileList['<glob>']`
Lazy list of files by glob

`FileList[...].ext('<.o>')`
Change extensions

`FileList[...].exclude('<glob>')`
Drop matching files

`sh '<cmd>'`
Run a shell command, fail the task on error

FILES AND HELPERS (cont.)

`sh '<cmd>', verbose: false`
Run quietly

`ruby '<file.rb>'`
Run a Ruby script with the current Ruby

`cp / mv / rm_rf / mkdir_p`
FileUtils helpers available in tasks

`require 'rake/clean'`
Add clean and clobber tasks

`CLEAN.include('<glob>')`
Files removed by rake clean

`CLOBBER.include('<glob>')`
Files removed by rake clobber

`Rake::TestTask.new do |t| ... end`
Define a test task

`rake <task>[<a>,<b>]`
Pass arguments on the command line

`rake 'name[a b,c]'`
Quote arguments that contain spaces

RECIPES

Documented tasks with arguments

```
desc "Deploy to an environment"
task :deploy, [:env] => :build
do |t, args|
  args.with_defaults(env:
"staging")
  sh "./deploy.sh #{args.env}"
end
# rake deploy[production]
```

Compile C files incrementally

```
SRC = FileList["src/*.c"]
OBJ = SRC.ext("o")

rule ".o" => ".c" do |t|
  sh "cc -c -o #{t.name}
#{t.source}"
end

file "app" => OBJ do |t|
  sh "cc -o #{t.name}
#{t.prerequisites.join(' ')}"
end
```

Namespaces and a default task

```
namespace :db do
  desc "Run migrations"
  task :migrate do ... end
end

task default: %w[db:migrate
test]
```

Inspect a big Rakefile

```
rake -T -A
rake -P | grep <task>
rake -W <task>
rake -n -t <task>
```