A

Keywords

The following lists contain keywords that are reserved for current or future use by the Rust language. As such, they cannot be used as identifiers (except as raw identifiers, as we discuss in “Raw Identifiers” on page XX). Identifiers are names of functions, variables, parameters, struct fields, modules, crates, constants, macros, static values, attributes, types, traits, or lifetimes.

Keywords Currently in Use

The following is a list of keywords currently in use, with their functionality described.

as

Perform primitive casting, disambiguate the specific trait containing an item, or rename items in use statements.

async

Return a Future instead of blocking the current thread.

await

Suspend execution until the result of a Future is ready.

break

Exit a loop immediately.

const

Define constant items or constant raw pointers.

continue

Continue to the next loop iteration.

crate

In a module path, refers to the crate root.

dyn

Dynamic dispatch to a trait object.

else

Fallback for if and if let control flow constructs.

enum

Define an enumeration.

extern

Link an external function or variable.

false

Boolean false literal.

fn

Define a function or the function pointer type.

for

Loop over items from an iterator, implement a trait, or specify a higher ranked lifetime.

if

Branch based on the result of a conditional expression.

impl

Implement inherent or trait functionality.

in

Part of for loop syntax.

let

Bind a variable.

loop

Loop unconditionally.

match

Match a value to patterns.

mod

Define a module.

move

Make a closure take ownership of all its captures.

mut

Denote mutability in references, raw pointers, or pattern bindings.

pub

Denote public visibility in struct fields, impl blocks, or modules.

ref

Bind by reference.

return

Return from function.

Self

A type alias for the type we are defining or implementing.

self

Method subject or current module.

static

Global variable or lifetime lasting the entire program execution.

struct

Define a structure.

super

Parent module of the current module.

trait

Define a trait.

true

Boolean true literal.

type

Define a type alias or associated type.

union

Define a union; is a keyword only when used in a union declaration.

unsafe

Denote unsafe code, functions, traits, or implementations.

use

Bring symbols into scope.

where

Denote clauses that constrain a type.

while

Loop conditionally based on the result of an expression.

Keywords Reserved for Future Use

The following keywords do not yet have any functionality but are reserved by Rust for potential future use:

* abstract
* become
* box
* do
* final
* gen
* macro
* override
* priv
* try
* typeof
* unsized
* virtual
* yield

Raw Identifiers

Raw identifiers are the syntax that lets you use keywords where they wouldn’t normally be allowed. You use a raw identifier by prefixing a keyword with r#.

For example, match is a keyword. If you try to compile the following function that uses match as its name:

src/main.rs

fn match(needle: &str, haystack: &str) -> bool {

haystack.contains(needle)

}

you’ll get this error:

error: expected identifier, found keyword `match`

--> src/main.rs:4:4

|

4 | fn match(needle: &str, haystack: &str) -> bool {

| ^^^^^ expected identifier, found keyword

The error shows that you can’t use the keyword match as the function identifier. To use match as a function name, you need to use the raw identifier syntax, like this:

src/main.rs

fn r#match(needle: &str, haystack: &str) -> bool {

haystack.contains(needle)

}

fn main() {

assert!(r#match("foo", "foobar"));

}

This code will compile without any errors. Note the r# prefix on the function name in its definition as well as where the function is called in main.

Raw identifiers allow you to use any word you choose as an identifier, even if that word happens to be a reserved keyword. This gives us more freedom to choose identifier names, as well as lets us integrate with programs written in a language where these words aren’t keywords. In addition, raw identifiers allow you to use libraries written in a different Rust edition than your crate uses. For example, try isn’t a keyword in the 2015 edition but is in the 2018 and 2021 editions. If you depend on a library that is written using the 2015 edition and has a try function, you’ll need to use the raw identifier syntax, r#try in this case, to call that function from your code on later editions. See Appendix E for more information on editions.