

# Package ‘selenider’

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**Title** Concise, Lazy and Reliable Wrapper for 'chromote' and 'selenium'

**Version** 0.4.1

**Description** A user-friendly wrapper for web automation, using either 'chromote' or 'selenium'. Provides a simple and consistent API to make web scraping and testing scripts easy to write and understand. Elements are lazy, and automatically wait for the website to be valid, resulting in reliable and reproducible code, with no visible impact on the experience of the programmer.

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|                                           |
|-------------------------------------------|
| <code>as.list.selenider_elements</code>   |
| <i>Iterate over an element collection</i> |

---

**Description**

This function essentially turns `x` into: `list(x[[1]], x[[2]], ...)` However, to do this, the length of `x` must be computed. This means that while each element inside the list is still lazy, the list itself cannot be considered lazy, since the number of elements in the DOM may change. To avoid problems, it is recommended to use an element list just after it is created, to make sure the list is an accurate representation of the DOM when it is being used.

**Usage**

```
## S3 method for class 'selenider_elements'
as.list(x, timeout = NULL, ...)
```

**Arguments**

- |                      |                                                                          |
|----------------------|--------------------------------------------------------------------------|
| <code>x</code>       | A <code>selenider_elements</code> object.                                |
| <code>timeout</code> | How long to wait for <code>x</code> to exist while computing its length. |
| <code>...</code>     | Not used.                                                                |

**Details**

Transform a `selenider_elements` object into a list of `selenider_element` objects. The result can then be used in for loops and higher order functions like `lapply()/purrr::map()` (whereas a `selenider_element` object cannot).

**Value**

A list of `selenider_element` objects.

**See Also**

- `elem_flatten()` to combine multiple `selenider_element/selenider_elements` objects into a single object.
- `find_each_element()` and `find_all_elements()` to select elements using an element collection while preserving laziness.

**Examples**

```
html <- "
<div id='div1'>
  <p>Text 1</p>
</div>
<div id='div2'>
  <p>Text 2</p>
</div>
<div id='div3'>
  <p>Text 3</p>
</div>
<div id='div4'>
  <p>Text 4</p>
</div>
"

session <- minimal_selenider_session(html)

p_tags <- ss("p")

for (elem in as.list(p_tags)) {
  print(elem_text(elem))
}

p_tags |>
  as.list() |>
  lapply(elem_text)
```

---

back

---

*Move back or forward in browsing history*


---

**Description**

`back()` navigates to the previously opened URL, or the previously opened page in your browsing history.

`forward()` reverses the action of `back()`, going to the next page in your browsing history.

**Usage**

```
back(timeout = NULL, session = NULL)
```

```
forward(timeout = NULL, session = NULL)
```

**Arguments**

|         |                                                                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout | The maximum time to wait for the page to load, in seconds. This defaults to 60, unless in a Github Action, in which case it defaults to 5 minutes. |
| session | A selenider_session object. If not specified, the global session object (the result of <a href="#">get_session()</a> ) is used.                    |

**Value**

The session object, invisibly.

**See Also**

Other global actions: [current\\_url\(\)](#), [execute\\_js\\_fn\(\)](#), [get\\_page\\_source\(\)](#), [open\\_url\(\)](#), [reload\(\)](#), [scroll\\_to\(\)](#), [take\\_screenshot\(\)](#)

**Examples**

```
session <- selenider_session()

open_url("https://r-project.org")

open_url("https://www.tidyverse.org/")

back()

forward()
```

---

|                  |                       |
|------------------|-----------------------|
| chromote_options | <i>Driver options</i> |
|------------------|-----------------------|

---

**Description**

`chromote_options()` and `selenium_options()` return a list of options that can be passed to the `options` argument of `selenider_session()`.

`chromote_options()` allows you to control the creation of a chromote driver created using [chromote::ChromoteSession\\$new\(\)](#).

`selenium_options()` allows you to control the creation of a selenium driver.

`selenium_server_options()` should be passed to the `server_options` argument of `selenium_options()`, allowing you to control the creation of the server using [selenium::selenium\\_server\(\)](#).

`selenium_client_options()` should be passed to the `client_options` argument of `selenium_options()`, allowing you to control the creation of a Selenium client created using [selenium::SeleniumSession\\$new\(\)](#).

**Usage**

```

chromote_options(
  headless = TRUE,
  parent = NULL,
  width = 992,
  height = 1323,
  targetId = NULL,
  wait_ = TRUE,
  auto_events = NULL
)

selenium_options(
  client_options = selenium_client_options(),
  server_options = selenium_server_options()
)

selenium_server_options(
  version = "latest",
  port = 4444L,
  selenium_manager = NULL,
  verbose = FALSE,
  temp = TRUE,
  path = NULL,
  interactive = FALSE,
  echo_cmd = FALSE,
  extra_args = c()
)

selenium_client_options(
  port = 4444L,
  host = "localhost",
  verbose = FALSE,
  capabilities = NULL,
  request_body = NULL,
  timeout = 60
)

```

**Arguments**

|                                             |                                                                                                                                                                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| headless                                    | Whether to run the browser in headless mode, meaning that you won't actually be able to see the browser as you control it. For debugging purposes and interactive use, it is often useful to set this to FALSE. |
| parent                                      | The parent chromote session.                                                                                                                                                                                    |
| width, height, targetId, wait_, auto_events | Passed into <code>chromote::ChromoteSession\$new()</code> .                                                                                                                                                     |
| client_options                              | A <code>selenium_client_options()</code> object.                                                                                                                                                                |
| server_options                              | A <code>selenium_server_options()</code> object, or NULL if you don't want one to be created.                                                                                                                   |

version            The version of Selenium server to use.  
port              The port number to use.  
selenium\_manager, verbose, temp, path, interactive, echo\_cmd, extra\_args  
                  Passed into `selenium::selenium_server()`.  
host, capabilities, request\_body, timeout  
                  Passed into `selenium::SeleniumSession$new()`.

---

|               |                               |
|---------------|-------------------------------|
| close_session | <i>Close a session object</i> |
|---------------|-------------------------------|

---

## Description

Shut down a session object, closing the browser and stopping the server. This will be done automatically if the session is set as the local session (which happens by default).

## Usage

```
close_session(x = NULL)
```

## Arguments

x                      A `selenider_session` object. If omitted, the local session object will be closed.

## Value

Nothing.

## See Also

`selenider_session()`

## Examples

```
session <- selenider_session(local = FALSE)  
  
close_session(session)
```

---

create\_chromote\_session

*Deprecated functions*


---

## Description

### [Deprecated]

These functions are deprecated and will be removed in a future release. Use the options argument to [selenider\\_session\(\)](#) instead. If you want to manually create a chromote or selenium session, use [chromote::ChromoteSession](#), [selenium::SeleniumSession](#) and [selenium::selenium\\_server\(\)](#) manually, since these functions are only a thin wrapper around them.

## Usage

```
create_chromote_session(parent = NULL, ...)

create_selenium_server(
  browser,
  version = "latest",
  driver_version = "latest",
  port = 4444L,
  quiet = TRUE,
  selenium_manager = TRUE,
  ...
)

create_selenium_client(browser, port = 4444L, host = "localhost", ...)

create_rselenium_client(browser, port = 4444L, ...)
```

## Arguments

|                                                         |                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| parent, ..., version, driver_version, port, quiet, host | See the documentation for <a href="#">chromote_options()</a> , <a href="#">selenium_options()</a> , <a href="#">selenium_client_options()</a> , <a href="#">wdman_server_options()</a> , <a href="#">selenium_client_options()</a> and <a href="#">rselenium_client_options()</a> for details about what these arguments mean. |
| browser                                                 | The browser to use.                                                                                                                                                                                                                                                                                                            |
| selenium_manager                                        | If this is FALSE, <a href="#">wdman::selenium()</a> will be used instead of <a href="#">selenium::selenium_server()</a> . The equivalent of using <a href="#">wdman_server_options()</a> over <a href="#">selenium_server_options()</a> in <a href="#">selenium_options()</a> .                                                |

## Value

[create\\_chromote\\_session\(\)](#) returns a [chromote::ChromoteSession](#) object.  
[create\\_selenium\\_server\(\)](#) returns a [processx::process](#) or wdman equivalent.



create\_selenium\_client() returns a [selenium::SeleniumSession](#) object.

create\_rselenium\_client() returns an [RSelenium::remoteDriver](#) object.

---

`current_url`*Get the URL of the current page*

---

## Description

Get the full URL of the current page.

## Usage

```
current_url(session = NULL)
```

## Arguments

`session`                      Optionally, a `selenider_session` object.

## Value

A string: the current URL.

## See Also

Other global actions: [back\(\)](#), [execute\\_js\\_fn\(\)](#), [get\\_page\\_source\(\)](#), [open\\_url\(\)](#), [reload\(\)](#), [scroll\\_to\(\)](#), [take\\_screenshot\(\)](#)

## Examples

```
session <- selenider_session()

open_url("https://r-project.org")

current_url()
```

---

|                |                                         |
|----------------|-----------------------------------------|
| elem_ancestors | <i>Get the DOM family of an element</i> |
|----------------|-----------------------------------------|

---

## Description

Find all elements with a certain relative position to an HTML element.

elem\_ancestors() selects every element which contains the current element (children, grandchildren, etc.).

elem\_parent() selects the element that contains the current element.

elem\_siblings() selects every element which has the same parent as the current element.

elem\_children() selects every element which is connected to and directly below the current element.

elem\_descendants() selects every element that is contained by the current element. The current element does not have to be a direct parent, but must be some type of ancestor.

## Usage

```
elem_ancestors(x)
```

```
elem_parent(x)
```

```
elem_siblings(x)
```

```
elem_children(x)
```

```
elem_descendants(x)
```

## Arguments

x                      A selenider\_element object.

## Details

All functions except elem\_children() and elem\_descendants() use XPath selectors, so may be slow, especially when using chromote as a backend.

## Value

All functions return a selenider\_elements object, except elem\_parent(), which returns a selenider\_element object (since an element can only have one parent).

**See Also**

- <http://web.simmons.edu/~grovesd/comm244/notes/week4/document-tree> for a simple and visual explanation of the document tree.
- `find_element()` and `find_elements()` for other ways of selecting elements. These functions allow you to select ancestors using one or more conditions (e.g. CSS selectors).
- `elem_filter()` and `elem_find()` for filtering element collections.

**Examples**

```
html <- "
<html>
<body>
  <div>
    <div id='current'>
      <p></p>
      <div>
        <p></p>
        <br>
      </div>
    </div>
  </div>
</body>
</html>
"

session <- minimal_selenider_session(html)

current <- s("#current")

# Get all the names of an element collection
elem_names <- function(x) {
  x |>
    as.list() |>
    vapply(elem_name, FUN.VALUE = character(1))
}

current |>
  elem_ancestors() |>
  elem_expect(has_length(3)) |>
  elem_names() # html, div, body

current |>
  elem_parent() |>
  elem_name() # div

current |>
  elem_siblings() |>
  elem_expect(has_length(2)) |>
  elem_names() # div, p
```

```

current |>
  elem_children() |>
  elem_expect(has_length(2)) |>
  elem_names() # p, div

current |>
  elem_descendants() |>
  elem_expect(has_length(4)) |>
  elem_names() # p, div, p, br

```

---

|           |                                     |
|-----------|-------------------------------------|
| elem_attr | <i>Get attributes of an element</i> |
|-----------|-------------------------------------|

---

## Description

Get an attribute of a `selenider_element` object.

`elem_attr()` returns a *single* attribute value as a string.

`elem_attrs()` returns a named list containing *every* attribute.

`elem_value()` returns the 'value' attribute.

## Usage

```
elem_attr(x, name, default = NULL, timeout = NULL)
```

```
elem_attrs(x, timeout = NULL)
```

```
elem_value(x, ptype = character(), timeout = NULL)
```

## Arguments

|                      |                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <code>x</code>       | A <code>selenider_element</code> object.                                                                                             |
| <code>name</code>    | The name of the attribute to get; a string.                                                                                          |
| <code>default</code> | The default value to use if the attribute does not exist in the element.                                                             |
| <code>timeout</code> | The time to wait for <code>x</code> to exist.                                                                                        |
| <code>ptype</code>   | The type to cast the value to. Useful when the value is an integer or decimal number. By default, the value is returned as a string. |

## Value

`elem_attr()` returns a character vector of length 1. `elem_attrs()` returns a named list of strings. The return value of `elem_value()` has the same type as `ptype` and length 1.

## See Also

Other properties: `elem_css_property()`, `elem_name()`, `elem_size()`, `elem_text()`

## Examples

```
html <- "
<a class='link' href='https://r-project.org'>R</a>
<input type='number' value='0'>
"

session <- minimal_selenider_session(html)

s("a") |>
  elem_attr("href")

s("a") |>
  elem_attrs()

s("input[type='number']") |>
  elem_value(ptype = integer())
```

---

elem\_cache

*Force an element to be collected and stored*

---

## Description

selenider\_element/selenider\_elements objects are generally *lazy*, meaning they only collect the actual element in the DOM when absolutely necessary, and forget it immediately after. This is to avoid situations where the DOM changes after an element has been collected, resulting in errors and unreliable behaviour.

elem\_cache() forces an element or collection of elements to be collected and stored, making it eager rather than lazy. This is useful when you are operating on the same element multiple times, since only collecting the element once will improve performance. However, you must be sure that the element will not change on the page while you are using it.

## Usage

```
elem_cache(x, timeout = NULL)
```

## Arguments

|         |                                                                     |
|---------|---------------------------------------------------------------------|
| x       | A selenider_element/selenider_elements object.                      |
| timeout | How long to wait for the element(s) to exist while collecting them. |

## Details

These functions do not make selenider elements *permanently* eager. Further sub-elements will not be cached unless specified.

For example, consider the following code:

```
s(".class1") |>
  elem_parent() |>
  elem_cache() |>
  find_element(".class2")
```

In this example, the parent of the element with class ".class1" will be cached, but the child element with class ".class2" will not.

### Value

A modified version of `x`. The result of `elem_cache()` can be used as a normal `selenider_element/selenider_elements` object.

### See Also

- `find_element()` and `find_elements()` to select elements.
- `as.list.selenider_elements()`, `find_each_element()` and `find_all_elements()` if you want to iterate over an element collection.

### Examples

```
html <- "
<div>
<p id='specifictext'></p>
<button></button>
</div>
"

session <- minimal_selenider_session(html)

# Selecting this button may be slow, since we are using relative XPath
# selectors.
button <- s("#specifictext") |>
  elem_siblings() |>
  elem_find(has_name("button"))

# But we need to click the button 10 times!
# Normally, this would involve fetching the button from the DOM 10 times
click_button_10_times <- function(x) {
  lapply(1:10, \(unused) elem_click(x))
  invisible(NULL)
}

# But with elem_cache(), the button will only be fetched once
cached_button <- elem_cache(button)

click_button_10_times(cached_button)

# But the cached button is less reliable if the DOM is changing
execute_js_fn("x => { x.outerHTML = '<button></button>'; }", button)
```

```
try(elem_click(cached_button, timeout = 0.1))

# But the non-cached version works
elem_click(button)
```

---

elem\_click

*Click an element*


---

### Description

Clicks on an HTML element, either by simulating a mouse click or by triggering the element's "click" event.

elem\_click() left clicks on the element, elem\_double\_click() left clicks on the element two times in a short period of time, while elem\_right\_click() right clicks on an element, opening its context menu.

### Usage

```
elem_click(x, js = FALSE, timeout = NULL)

elem_double_click(x, js = FALSE, timeout = NULL)

elem_right_click(x, js = FALSE, timeout = NULL)
```

### Arguments

|         |                                                |
|---------|------------------------------------------------|
| x       | A selenider_element object.                    |
| js      | Whether to click the element using JavaScript. |
| timeout | How long to wait for the element to exist.     |

### Value

x, invisibly.

### See Also

Other actions: [elem\\_hover\(\)](#), [elem\\_scroll\\_to\(\)](#), [elem\\_select\(\)](#), [elem\\_set\\_value\(\)](#), [elem\\_submit\(\)](#)

### Examples

```
html <- "
<button onclick = hidetext() oncontextmenu = showtext()></button>
<p id = 'texttohide'>Hello!</p>
"

js <- "
function hidetext() {
```

```

    document.getElementById('textthide').style.display = 'none'
  }

  function showtext() {
    document.getElementById('textthide').style.display = 'block'
  }
  "

session <- minimal_selenider_session(html, js = js)

elem_expect(s("p"), is_visible)

s("button") |>
  elem_click()

elem_expect(s("p"), is_invisible)

s("button") |>
  elem_right_click()

elem_expect(s("p"), is_visible)

```

---

|                   |                                         |
|-------------------|-----------------------------------------|
| elem_css_property | <i>Get a CSS property of an element</i> |
|-------------------|-----------------------------------------|

---

## Description

Get a CSS property of an element (e.g. "background-color"). Specifically, the *computed* style is returned, meaning that, for example, widths and heights will be returned in pixels, and colours will be returned as an RGB value.

## Usage

```
elem_css_property(x, name, timeout = NULL)
```

## Arguments

|         |                                      |
|---------|--------------------------------------|
| x       | A selenider_element object.          |
| name    | The name of the CSS property to get. |
| timeout | The time to wait for x to exist.     |

## Value

A string, or NULL if the property does not exist.

## See Also

Other properties: [elem\\_attr\(\)](#), [elem\\_name\(\)](#), [elem\\_size\(\)](#), [elem\\_text\(\)](#)



**Examples**

```
html <- "
<p style='visibility:hidden; color:red;'>Text</p>
"

session <- minimal_selenider_session(html)

s("p") |>
  elem_css_property("visibility")

s("p") |>
  elem_css_property("color")
```

---

|            |                                     |
|------------|-------------------------------------|
| elem_equal | <i>Are two elements equivalent?</i> |
|------------|-------------------------------------|

---

**Description**

Checks if two `selenider_element` objects point to the same element on the page. `elem_equal()` is equivalent to using `==`, but allows you to specify a timeout value if needed.

**Usage**

```
elem_equal(x, y, timeout = NULL)

## S3 method for class 'selenider_element'
e1 == e2
```

**Arguments**

|                           |                                                    |
|---------------------------|----------------------------------------------------|
| <code>x, y, e1, e2</code> | <code>selenider_element</code> objects to compare. |
| <code>timeout</code>      | How long to wait for the elements to be present.   |

**Value**

TRUE or FALSE.

**See Also**

- [elem\\_filter\(\)](#) and [elem\\_find\(\)](#) for filtering collection of elements.

**Examples**

```

html <- "
<div></div>
<div class='second'>
  <p></p>
</div>
"

session <- minimal_selenider_session(html)

s("div") == ss("div")[[1]]

has_p_child <- function(x) {
  x |>
    elem_children() |> # Direct children
    elem_filter(has_name("p")) |>
    has_at_least(1)
}

ss("div") |>
  elem_find(has_p_child) |>
  elem_equal(s(".second")) # TRUE

```

elem\_expect

*Test one or more conditions on HTML elements***Description**

elem\_expect() waits for a set of conditions to return TRUE. If, after a certain period of time (by default 4 seconds), this does not happen, an informative error is thrown. Otherwise, the original element is returned.

elem\_wait\_until() does the same, but returns a logical value (whether or not the test passed), allowing you to handle the failure case explicitly.

**Usage**

```
elem_expect(x, ..., testthat = NULL, timeout = NULL)
```

```
elem_wait_until(x, ..., timeout = NULL)
```

**Arguments**

**x** A selenider\_element/selenider\_elements object, or a condition.

**...** [<dynamic-dots>](#) Function calls or functions that must return a logical value. If multiple conditions are given, they must all be TRUE for the test to pass.

|          |                                                                                                                                                                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| testthat | Whether to treat the expectation as a testthat test. You <i>do not</i> need to explicitly provide this most of the time, since by default, we can use <code>testthat::is_testing()</code> to figure out whether <code>elem_expect()</code> is being called from within a testthat test. |
| timeout  | The number of seconds to wait for a condition to pass. If not specified, the timeout used for <code>x</code> will be used, or the timeout of the local session if an element is not given.                                                                                              |

## Value

`elem_expect()` invisibly returns the element(s) `x`, or NULL if an element or collection of elements was not given in `x`.

`elem_wait_for()` returns a boolean flag: TRUE if the test passes, FALSE otherwise.

## Conditions

Conditions can be supplied as functions or calls.

Functions allow you to use unary conditions without formatting them as a call (e.g. `is_present` rather than `is_present()`). It also allows you to make use of R's [anonymous function syntax](#) to quickly create custom conditions. `x` will be supplied as the first argument of this function.

Function calls allow you to use conditions that take multiple arguments (e.g. `has_text()`) without the use of an intermediate function. The call will be modified so that `x` is the first argument to the function call. For example, `has_text("a")` will be modified to become: `has_text(x, "a")`.

The `and (&&)`, `or (||)` and `not (!)` functions can be used on both types of conditions. If more than one condition are given in `...`, they are combined using `&&`.

## Custom conditions

Any function which takes a selenider element or element collection as its first argument, and returns a logical value, can be used as a condition.

Additionally, these functions provide a few features that make creating custom conditions easy:

- Errors with class `expect_error_continue` are handled, and the function is prevented from terminating early. This means that if an element is not found, the function will retry instead of immediately throwing an error.
- selenider functions used inside conditions have their timeout, by default, set to 0, ignoring the local timeout. This is important, since `elem_expect()` and `elem_wait_until()` implement a retry mechanic manually. To override this default, manually specify a timeout.

These two features allow you to use functions like `elem_text()` to access properties of an element, without needing to worry about the errors that they throw or the timeouts that they use. See [Examples](#) for a few examples of a custom condition.

These custom conditions can also be used with `elem_filter()` and `elem_find()`.

**See Also**

- `is_present()` and other conditions for predicates for HTML elements. (If you scroll down to the *See also* section, you will find the rest).
- `elem_expect_all()` and `elem_wait_until_all()` for an easy way to test a single condition on multiple elements.
- `elem_filter()` and `elem_find()` to use conditions to filter elements.

**Examples**

```
html <- "
<div class='class1'>
<button id='disabled-button' disabled>Disabled</button>
<p>Example text</p>
<button id='enabled-button'>Enabled</button>
</div>

<div class='class3'>
</div>
"
session <- minimal_selenider_session(html)

s(".class1") |>
  elem_expect(is_present)

s("#enabled-button") |>
  elem_expect(is_visible, is_enabled)

s("#disabled-button") |>
  elem_expect(is_disabled)

# Error: element is visible but not enabled
s("#disabled-button") |>
  elem_expect(is_visible, is_enabled, timeout = 0.5) |>
  try() # Since this condition will fail

s(".class2") |>
  elem_expect(!is_present, !is_in_dom, is_absent) # All 3 are equivalent

# All other conditions will error if the element does not exist
s(".class2") |>
  elem_expect(is_invisible, timeout = 0.1) |>
  try()

# elem_expect() returns the element, so can be used in chains
s("#enabled-button") |>
  elem_expect(is_visible && is_enabled) |>
  elem_click()
# Note that elem_click() will do this automatically

s("p") |>
  elem_expect(is_visible, has_exact_text("Example text"))
```

```

# Or use an anonymous function
s("p") |>
  elem_expect(\(elem) identical(elem_text(elem), "Example text"))

# If your conditions are not specific to an element, you can omit the `x`
# argument
elem_1 <- s(".class1")
elem_2 <- s(".class2")

elem_expect(is_present(elem_1) || is_present(elem_2))

# We can now use the conditions on their own to figure out which element
# exists
if (is_present(elem_1)) {
  print("Element 1 is visible")
} else {
  print("Element 2 is visible")
}

# Use elem_wait_until() to handle failures manually
elem <- s(".class2")
if (elem_wait_until(elem, is_present)) {
  elem_click(elem)
} else {
  reload()
}

# Creating a custom condition is easiest with an anonymous function
s("p") |>
  elem_expect(
    \(elem) elem |>
      elem_text() |>
        grepl(pattern = "Example .*")
  )

# Or create a function, to reuse the condition multiple times
text_contains <- function(x, pattern) {
  text <- elem_text(x)

  grepl(pattern, text)
}

s("p") |>
  elem_expect(text_contains("Example *"))

# If we want to continue on error, we need to use the
# "expect_error_continue" class.
# This involves making a custom error object.
error_condition <- function() {
  my_condition <- list(message = "Custom error!")
  class(my_condition) <- c("expect_error_continue", "error", "condition")
  stop(my_condition)
}

```

```

}

# This is much easier with rlang::abort() / cli::cli_abort():
error_condition_2 <- function() {
  rlang::abort("Custom error!", class = "expect_error_continue")
}

# This error will not be caught
try(elem_expect(stop("Uncaught error!")))

# These will eventually throw an error, but will wait 0.5 seconds to do so.
try(elem_expect(error_condition(), timeout = 0.5))
try(elem_expect(error_condition_2(), timeout = 0.5))

```

---

|                 |                                             |
|-----------------|---------------------------------------------|
| elem_expect_all | <i>Test conditions on multiple elements</i> |
|-----------------|---------------------------------------------|

---

## Description

elem\_expect\_all() and elem\_wait\_until\_all() are complements to [elem\\_expect\(\)](#) and [elem\\_wait\\_until\(\)](#) that test conditions on multiple elements in an element collection.

## Usage

```
elem_expect_all(x, ..., testthat = NULL, timeout = NULL)
```

```
elem_wait_until_all(x, ..., timeout = NULL)
```

## Arguments

|          |                                                                                                                                                                                                                                                                                                                      |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| x        | A <code>selenider_elements()</code> object.                                                                                                                                                                                                                                                                          |
| ...      | <a href="#">&lt;dynamic-dots&gt;</a> Function calls or functions that must return a logical value. If multiple conditions are given, they must all be TRUE for the test to pass. See <a href="#">elem_expect()</a> for more details.                                                                                 |
| testthat | Whether to treat the expectation as a <code>testthat</code> test. You <i>do not</i> need to explicitly provide this most of the time, since by default, we can use <a href="#">testthat::is_testing()</a> to figure out whether <code>elem_expect()</code> is being called from within a <code>testthat</code> test. |
| timeout  | The number of seconds to wait for a condition to pass. If not specified, the timeout used for x will be used, or the timeout of the local session if an element is not given.                                                                                                                                        |

## Details

If `x` does not contain any elements, `elem_expect_all()` and `elem_wait_until_all()` will succeed. You may want to first verify that at least one element exists with `has_at_least()`.

`elem_expect_all()` and `elem_wait_until_all()` can be thought of as alternatives to the use of `all(vapply(FUN.VALUE = logical(1)))` (or `purrr::every()`) within `elem_expect()` and `elem_wait_until()`.

For example, the following two expressions are equivalent (where `x` is an element collection).

```
elem_expect(
  x,
  \(element) all(vapply(as.list(element), is_present, logical(1)))
)
elem_expect_all(x, is_present)
```

However, the second example will give a more detailed error message on failure.

## Value

`elem_expect_all()` returns `x`, invisibly.

`elem_wait_until_all()` returns a boolean flag: TRUE if the test passes, FALSE otherwise.

## See Also

- `elem_expect()` and `elem_wait_until()`.
- `is_present()` and other conditions for predicates for HTML elements. (If you scroll down to the *See also* section, you will find the rest).

## Examples

```
html <- "
<div id='div1'>Content 1</div>
<div id='div2'>Content 2</div>
<div id='div3' style='display:none;'>Content 3</div>
<div id='div4'>Content 4</div>
"

session <- minimal_selenider_session(html)

ss("div") |>
  elem_expect_all(is_visible, timeout = 0.1) |>
  try()

ss("div")[-3] |>
  elem_expect_all(is_visible)
```

elem\_filter

*Extract a subset of HTML elements*

## Description

Operators to extract a subset of elements, or a single element, from a selenider element collection.

`elem_filter()` and `elem_find()` allow you to use conditions to filter HTML elements (see [is\\_present\(\)](#) and other conditions). `elem_find()` returns the *first* element that satisfies one or more conditions, while `elem_filter()` returns every element that satisfies these conditions.

`[]` and `[[` with a numeric subscript can be used on an element collection to filter the elements by position. `[]` returns a single element at a specified location, while `[[` returns a collection of the elements at more than one position.

## Usage

```
elem_filter(x, ...)

elem_find(x, ...)

## S3 method for class 'selenider_elements'
x[i]

## S3 method for class 'selenider_elements'
x[[i]]
```

## Arguments

|                  |                                                                                                                                        |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <code>x</code>   | A <code>selenider_elements</code> object.                                                                                              |
| <code>...</code> | <a href="#">&lt;dynamic-dots&gt;</a> Conditions (functions or function calls) that are used to filter the elements of <code>x</code> . |
| <code>i</code>   | A number (or for <code>[]</code> , a vector of one or more numbers) used to select elements by position.                               |

## Details

As with the [find\\_element\(\)](#) and [find\\_elements\(\)](#) functions, these functions are lazy, meaning that the elements are not fetched and filtered until they are needed.

Conditions can be functions or function calls (see [elem\\_expect\(\)](#) for more details).

## Value

`elem_filter()` and `[]` return a `selenider_elements` object, since they can result in multiple elements. `elem_find()` and `[[` return a single `selenider_element` object.



**See Also**

- `find_elements()` and `ss()` to get elements to filter.
- `is_present()` and other conditions for predicates on HTML elements. (If you scroll down to the *See also* section, you will find the rest).

**Examples**

```
html <- "  
<button disabled>Button 1</button>  
<button>Button 2</button>  
<p>Text</p>  
<div style='display:none;'></div>  
"  
session <- minimal_selenider_session(html)  
  
elements <- ss("*")  
  
# Gives the same result as s()  
elements[[1]]  
  
elements[1:3]  
  
elements[-2]  
  
elements |>  
  elem_filter(is_visible)  
  
elements |>  
  elem_find(is_visible)  
  
# The above is equivalent to:  
visible_elems <- elements |>  
  elem_filter(is_visible)  
visible_elems[[1]]  
  
# In R >= 4.3.0, we can instead do:  
# ss(".class1") |>  
#   elem_filter(is_visible) |>  
#   _[[1]]  
  
ss("button") |>  
  elem_filter(is_enabled)
```

**Description****[Deprecated]**

elem\_flatmap() previously allowed you to apply a function to each element in a collection in a lazy manner. This function is now deprecated, as it did not work in all cases. Use [find\\_each\\_element\(\)](#) and [find\\_all\\_elements\(\)](#) instead for the simple case where you want to select the children of a collection.

element\_list() is a deprecated alias for [as.list.selenider\\_elements\(\)](#).

**Usage**

```
elem_flatmap(x, .f, ...)
```

```
element_list(x, timeout = NULL)
```

**Arguments**

|         |                                                                                                         |
|---------|---------------------------------------------------------------------------------------------------------|
| x       | A selenider_elements object.                                                                            |
| .f      | A function that takes a selenider_element and returns a selenider_element or selenider_elements object. |
| ...     | Passed into .f.                                                                                         |
| timeout | How long to wait for x to exist while computing its length.                                             |

**Value**

elem\_flatmap() returns a selenider\_elements object.

element\_list() returns a list of selenider\_element objects.

---

|              |                                       |
|--------------|---------------------------------------|
| elem_flatten | <i>Combine multiple HTML elements</i> |
|--------------|---------------------------------------|

---

**Description**

Combine a set of selenider\_element/selenider\_elements objects into a single selenider\_elements object, allowing you to perform actions on them at once. c() and elem\_flatten() do the same thing, but elem\_flatten() works when given a list of selenider\_element/selenider\_elements objects.

**Usage**

```
elem_flatten(...)
```

```
## S3 method for class 'selenider_element'
c(...)
```

```
## S3 method for class 'selenider_elements'
c(...)
```

**Arguments**

... [<dynamic-dots>](#) selenider\_element or selenider\_elements objects to be combined, or lists of such objects.

**Value**

A selenider\_elements object.

**See Also**

- [as.list.selenider\\_elements\(\)](#) to iterate over element collections.

**Examples**

```
html <- "
<div id='id1'></div>
<div class='.class2'></div>
<button id='button1'>Click me!</button>
<div class='button-container'>
  <button id='button2'>No, click me!</button>
</div>
"

session <- minimal_selenider_session(html)

button_1 <- s("#button1")
button_2 <- s("#button2")

buttons <- elem_flatten(button_1, button_2)

buttons |>
  elem_expect_all(is_enabled)

buttons |>
  as.list() |>
  lapply(elem_click)

# Doesn't just have to be single elements
first_2_divs <- ss("div")[1:2]

elem_flatten(first_2_divs, button_2) |>
  length()

# We would like to use multiple css selectors and combine the results
selectors <- c(
  "#id1", # Will select 1 element
  "button", # Will select 2 elements
  "p" # Will select 0 elements
)

lapply(selectors, ss) |>
  elem_flatten() |>
```

```
length() # 3
```

---

```
elem_hover
```

```
Hover over an element
```

---

## Description

`elem_hover()` moves the mouse over to an HTML element and hovers over it, without actually clicking or interacting with it.

`elem_focus()` focuses an HTML element.

## Usage

```
elem_hover(x, js = FALSE, timeout = NULL)
```

```
elem_focus(x, timeout = NULL)
```

## Arguments

|                      |                                                     |
|----------------------|-----------------------------------------------------|
| <code>x</code>       | A <code>selenider_element</code> object.            |
| <code>js</code>      | Whether to hover over the element using JavaScript. |
| <code>timeout</code> | How long to wait for the element to exist.          |

## Value

`x`, invisibly.

## See Also

Other actions: [elem\\_click\(\)](#), [elem\\_scroll\\_to\(\)](#), [elem\\_select\(\)](#), [elem\\_set\\_value\(\)](#), [elem\\_submit\(\)](#)

## Examples

```
html <- "
<button onmouseover = settext()></button>
<p class = 'text'></p>
"

js <- "
function settext() {
  const element = document.getElementsByClassName('text').item(0);

  element.innerHTML = 'Button hovered!';
}
"

session <- minimal_selenider_session(html, js = js)
```

```
elem_expect(s(".text"), has_exact_text(""))

s("button") |>
  elem_hover()

elem_expect(s(".text"), has_text("Button hovered!"))

s("button") |>
  elem_focus()
```

---

|           |                                       |
|-----------|---------------------------------------|
| elem_name | <i>Get the tag name of an element</i> |
|-----------|---------------------------------------|

---

## Description

Get the tag name (e.g. "p" for a <p> tag) of a `selenider_element` object.

## Usage

```
elem_name(x, timeout = NULL)
```

## Arguments

|         |                                          |
|---------|------------------------------------------|
| x       | A <code>selenider_element</code> object. |
| timeout | The time to wait for x to exist.         |

## Value

A string.

## See Also

Other properties: [elem\\_attr\(\)](#), [elem\\_css\\_property\(\)](#), [elem\\_size\(\)](#), [elem\\_text\(\)](#)

## Examples

```
html <- "
<div class='mydiv'></div>
"

session <- minimal_selenider_session(html)

s(".mydiv") |>
  elem_name()
```

---

|                |                             |
|----------------|-----------------------------|
| elem_scroll_to | <i>Scroll to an element</i> |
|----------------|-----------------------------|

---

**Description**

Scrolls to an HTML element.

**Usage**

```
elem_scroll_to(x, js = FALSE, timeout = NULL)
```

**Arguments**

|         |                                                    |
|---------|----------------------------------------------------|
| x       | A selenider_element object.                        |
| js      | Whether to scroll to the element using JavaScript. |
| timeout | How long to wait for the element to exist.         |

**Value**

x, invisibly.

**See Also**

Other actions: [elem\\_click\(\)](#), [elem\\_hover\(\)](#), [elem\\_select\(\)](#), [elem\\_set\\_value\(\)](#), [elem\\_submit\(\)](#)

**Examples**

```
html <- "
<div style = 'height:100%; min-height:100vh'></div>
<button onclick='checkScrolled()'></button>
<p>Scroll down to find me!</p>
"

js <- "
function checkScrolled() {
  let element = document.getElementsByTagName('p').item(0);
  let rect = element.getBoundingClientRect();
  // If paragraph is in view
  const height = window.innerHeight || document.documentElement.clientHeight;
  if (rect.bottom <= height) {
    element.innerText = 'You found me!';
  }
}
"

session <- minimal_selenider_session(html, js = js)

s("p") |>
  elem_scroll_to()
```

```
s("button") |>
  elem_click()

elem_expect(s("p"), has_text("You found me!"))
```

---

|             |                               |
|-------------|-------------------------------|
| elem_select | <i>Select an HTML element</i> |
|-------------|-------------------------------|

---

## Description

Select or deselect select and option elements.

## Usage

```
elem_select(
  x,
  value = NULL,
  text = NULL,
  index = NULL,
  timeout = NULL,
  reset_other = TRUE
)
```

## Arguments

|             |                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|
| x           | A selenider_element object representing a select or option element.                                                                      |
| value       | If x is a select element, the value of the option to select. Can be a character vector, in which case multiple options will be selected. |
| text        | The text content of the option to select. This does not have to be a complete match, and multiple options can be selected.               |
| index       | A vector of indexes. The nth option elements will be selected.                                                                           |
| timeout     | How long to wait for the element to exist.                                                                                               |
| reset_other | If TRUE (the default), the other options will be deselected.                                                                             |

## Details

If no arguments apart from x are supplied, and x is a select element, all options will be deselected.

## Value

x, invisibly.

## See Also

Other actions: [elem\\_click\(\)](#), [elem\\_hover\(\)](#), [elem\\_scroll\\_to\(\)](#), [elem\\_set\\_value\(\)](#), [elem\\_submit\(\)](#)

## Examples

```
html <- "
<select multiple>
  <option value='a'>Option A.</option>
  <option value='b'>Option B.</option>
  <option value='c'>Option C.</option>
</select>
"

session <- minimal_selenider_session(html)

s("select") |>
  elem_select("a")

s("select") |>
  elem_select(text = c("Option A.", "Option C.))

s("select") |>
  elem_select(index = 2, reset_other = FALSE)

# Reset selection
s("select") |>
  elem_select()

s("select") |>
  elem_select("b")
```

---

|                |                                  |
|----------------|----------------------------------|
| elem_set_value | <i>Set the value of an input</i> |
|----------------|----------------------------------|

---

## Description

elem\_set\_value() sets the value of an HTML input element to a string.

## Usage

```
elem_set_value(x, text, timeout = NULL)

elem_send_keys(x, ..., modifiers = NULL, timeout = NULL)

elem_clear_value(x, timeout = NULL)
```

## Arguments

|      |                                                                                                                                                                                                               |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| x    | A selenider_element object. For <a href="#">elem_send_keys()</a> , this can be NULL, meaning that the keys will be sent to the current page (or the currently focused element) instead of a specific element. |
| text | A string to set the value of the input element to.                                                                                                                                                            |



|           |                                                                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout   | How long to wait for the element to exist.                                                                                                                          |
| ...       | A set of inputs to send to x.                                                                                                                                       |
| modifiers | A character vector; one or more of "shift", "ctrl"/"control", "alt", and "command"/"meta". Note that when using chromote as a backend, these do not work on Mac OS. |

### Details

elem\_send\_keys() sends a set of inputs to an element.

elem\_clear\_value() sets the value of an HTML element to "", removing any existing content.

### Value

x, invisibly.

### See Also

Other actions: [elem\\_click\(\)](#), [elem\\_hover\(\)](#), [elem\\_scroll\\_to\(\)](#), [elem\\_select\(\)](#), [elem\\_submit\(\)](#)

### Examples

```
html <- "
<input
  type='text'
  oninput='recordChange(event)'
  onkeypress='return checkEnter(event);'
/>
<p></p>
"

js <- "
function recordChange(e) {
  document.getElementsByTagName('p').item(0).innerText = e.target.value;
}

function checkEnter(e) {
  // If the key pressed was Enter
  if (e.keyCode == 13) {
    document.getElementsByTagName('p').item(0).innerText = 'Enter pressed!';
    return false;
  }
  return true;
}
"

session <- minimal_selenider_session(html, js = js)

elem_expect(s("p"), has_exact_text(""))

input <- s("input")
```

```

elem_set_value(input, "my text")

elem_expect(s("p"), has_text("my text"))

elem_clear_value(input)

elem_expect(s("p"), has_exact_text(""))

elem_send_keys(input, keys$enter)

elem_expect(s("p"), has_text("Enter pressed!"))

```

---

|           |                                                   |
|-----------|---------------------------------------------------|
| elem_size | <i>Get the number of elements in a collection</i> |
|-----------|---------------------------------------------------|

---

### Description

Get the number of elements in a HTML element collection, waiting for the parent elements (if any) to exist before returning a value.

length() and elem\_size() can be used interchangeably, the only difference being that elem\_size() allows you to specify a timeout.

### Usage

```

elem_size(x, timeout = NULL)

## S3 method for class 'selenider_elements'
length(x)

```

### Arguments

|         |                                                         |
|---------|---------------------------------------------------------|
| x       | A selenider_elements object.                            |
| timeout | The time to wait for the parent of x (if any) to exist. |

### Value

An integer representing the number of elements in the collection.

### See Also

Other properties: [elem\\_attr\(\)](#), [elem\\_css\\_property\(\)](#), [elem\\_name\(\)](#), [elem\\_text\(\)](#)

**Examples**

```
html <- "
<div></div>
<div></div>
<div></div>
<div></div>
"

session <- minimal_selenider_session(html)

ss("div") |>
  length()
```

elem\_submit

*Submit an element***Description**

If an element is an ancestor of a form, submits the form. Works by walking up the DOM, checking each ancestor element until the element is a `<form>` element, which it then submits. If such an element does not exist, an error is thrown.

**Usage**

```
elem_submit(x, js = FALSE, timeout = NULL)
```

**Arguments**

|                      |                                              |
|----------------------|----------------------------------------------|
| <code>x</code>       | A <code>selenider_element</code> object.     |
| <code>js</code>      | Whether to submit the form using JavaScript. |
| <code>timeout</code> | How long to wait for the element to exist.   |

**Value**

`x`, invisibly.

**See Also**

Other actions: [elem\\_click\(\)](#), [elem\\_hover\(\)](#), [elem\\_scroll\\_to\(\)](#), [elem\\_select\(\)](#), [elem\\_set\\_value\(\)](#)

**Examples**

```
html <- "
<form>
<input type='submit'>
<p>Random text</p>
</form>
<a>Random link</a>
```

```
"
session <- minimal_selenider_session(html)

elem_submit(s("input"))
elem_submit(s("p"))

# Won't work since the element doesn't have a form ancestor
try(elem_submit(s("a"), timeout = 0.5))
```

---

elem\_text

*Get the text inside an element*


---

## Description

Get the inner text of a `selenider_element` object.

## Usage

```
elem_text(x, timeout = NULL)
```

## Arguments

|                      |                                               |
|----------------------|-----------------------------------------------|
| <code>x</code>       | A <code>selenider_element</code> object.      |
| <code>timeout</code> | The time to wait for <code>x</code> to exist. |

## Value

A string.

## See Also

Other properties: [elem\\_attr\(\)](#), [elem\\_css\\_property\(\)](#), [elem\\_name\(\)](#), [elem\\_size\(\)](#)

## Examples

```
html <- "
<p>Example text</p>
"

session <- minimal_selenider_session(html)

s("p") |>
  elem_text()
```

---

|               |                                      |
|---------------|--------------------------------------|
| execute_js_fn | <i>Execute a JavaScript function</i> |
|---------------|--------------------------------------|

---

## Description

### [Experimental]

Execute a JavaScript function on zero or more arguments.

`execute_js_expr()` is a simpler version of `execute_js_fn()` that can evaluate simple expressions (e.g. `"alert()"`). To return a value, you must do so explicitly using `"return"`.

These functions are experimental because their names and parameters are liable to change. Additionally, their behaviour can be inconsistent between different session types (chromote and selenium) and different browsers.

## Usage

```
execute_js_fn(fn, ..., .timeout = NULL, .session = NULL, .debug = FALSE)
```

```
execute_js_expr(expr, ..., .timeout = NULL, .session = NULL, .debug = FALSE)
```

## Arguments

|                       |                                                                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>fn</code>       | A string defining the function.                                                                                                                                                    |
| <code>...</code>      | Arguments to the function/expression. These must be unnamed, since JavaScript does not support named arguments.                                                                    |
| <code>.timeout</code> | How long to wait for any elements to exist in the DOM.                                                                                                                             |
| <code>.session</code> | The session to use, if <code>...</code> does not contain any selenider elements.                                                                                                   |
| <code>.debug</code>   | Whether to print the final expression that is executed. Mostly used for debugging the functions themselves, but can also be used to identify problems in your own JavaScript code. |
| <code>expr</code>     | An expression to execute.                                                                                                                                                          |

## Details

`...` can contain `selenider_element/selenider_elements` objects, which will be collected and then passed into the function. However, more complex objects (e.g. lists of selenider elements) will not be moved into the JavaScript world correctly.

Similarly, nodes and lists of nodes returned from a JavaScript function will be converted into their corresponding `selenider_element/selenider_elements` objects, while more complex objects will not. These elements are not lazy (see [elem\\_cache\(\)](#)), so make sure you only use them while you are sure they are still on the page.

## Value

The return value of the JavaScript function, turned back into an R object.

**See Also**

Other global actions: `back()`, `current_url()`, `get_page_source()`, `open_url()`, `reload()`, `scroll_to()`, `take_screenshot()`

**Examples**

```
html <- "
<button class='mybutton'>Click me</button>
"

session <- minimal_selenider_session(html)

execute_js_fn("(x, y) => x + y", 1, 1)

execute_js_expr("arguments[0] + arguments[1]", 1, 1)

execute_js_fn("x => x.click()", s(".mybutton"))

execute_js_expr("arguments[0].click()", s(".mybutton"))
```

---

|                   |                                             |
|-------------------|---------------------------------------------|
| find_each_element | <i>Find HTML children from a collection</i> |
|-------------------|---------------------------------------------|

---

**Description**

Find HTML child elements from elements in a collection. Provides a convenient way to operate on a collection of elements.

`find_each_element()` finds the first child element of each element in the collection.

`find_all_elements()` finds every child element of every element in the collection.

**Usage**

```
find_each_element(
  x,
  css = NULL,
  xpath = NULL,
  id = NULL,
  class_name = NULL,
  name = NULL
)

find_all_elements(
  x,
  css = NULL,
  xpath = NULL,
  id = NULL,
  class_name = NULL,
```

```
    name = NULL  
  )
```

### Arguments

|            |                                                        |
|------------|--------------------------------------------------------|
| x          | A selenider_elements object.                           |
| css        | A CSS selector.                                        |
| xpath      | An XPath.                                              |
| id         | The id of the elements you want to select.             |
| class_name | The class name of the elements you want to select.     |
| name       | The name attribute of the elements you want to select. |

### Details

find\_each\_element() will usually preserve the length of the input, since for each element in the collection, one new element will be found. However, if an element in the collection cannot be found, it will not be included in the resulting collection.

find\_each\_element(x, ...) is roughly equivalent to:

```
x |>  
  as.list() |>  
  lapply(\(x) find_element(x, ...)) |>  
  elem_flatten()
```

Similarly, find\_all\_elements(x, ...) is roughly equivalent to:

```
x |>  
  as.list() |>  
  lapply(\(x) find_elements(x, ...)) |>  
  elem_flatten()
```

### Value

A selenider\_elements object.

### See Also

- [as.list\(\)](#) to iterate over an element collection.
- [elem\\_flatten\(\)](#) to combine multiple selenider\_element/selenider\_elements objects into a single object.

**Examples**

```

html <- "
<div id='div1'>
  <p>Text 1</p>
  <button>Button 1</button>
</div>
<div id='div2'>
  <p>Text 2</p>
</div>
<div id='div3'>
  <p>Text 3</p>
</div>
<div id='div4'>
  <p>Text 4</p>
</div>
"

session <- minimal_selenider_session(html)

divs <- ss("div")

# Get the <p> tag inside each div.
divs |>
  find_each_element("p")

# Get the <button> tag in the first div as well.
divs |>
  find_all_elements("*")

```

---

find\_element

*Find a single HTML child element*


---

**Description**

Find the first HTML element using a CSS selector, an XPath, or a variety of other methods.

**Usage**

```

find_element(x, ...)

## S3 method for class 'selenider_session'
find_element(
  x,
  css = NULL,
  xpath = NULL,
  id = NULL,
  class_name = NULL,

```



```
        name = NULL,  
        ...  
    )  
  
    ## S3 method for class 'selenider_element'  
    find_element(  
        x,  
        css = NULL,  
        xpath = NULL,  
        id = NULL,  
        class_name = NULL,  
        name = NULL,  
        ...  
    )
```

### Arguments

|            |                                                       |
|------------|-------------------------------------------------------|
| x          | A selenider session or element.                       |
| ...        | Arguments passed to methods.                          |
| css        | A css selector.                                       |
| xpath      | An XPath.                                             |
| id         | The id of the element you want to select.             |
| class_name | The class name of the element you want to select.     |
| name       | The name attribute of the element you want to select. |

### Details

If more than one method is used to select an element (e.g. `css` and `xpath`), the first element which satisfies all conditions will be found.

CSS selectors are generally recommended over other options, since they are usually the easiest to read. Use `"tag_name"` to select by tag name, `".class"` to select by class, and `"#id"` to select by id.

### Value

A `selenider_element` object.

### See Also

- [s\(\)](#) to quickly select an element without specifying the session.
- [find\\_elements\(\)](#) to select multiple elements.
- [selenider\\_session\(\)](#) to begin a session.

**Examples**

```

html <- "
<div class='class1'>
  <div id='id1'>
    <p class='class2'>Example text</p>
  </div>
  <p>Example text</p>
</div>
"

session <- minimal_selenider_session(html)

session |>
  find_element("div")

session |>
  find_element("div") |>
    find_element(xpath = "./p")

s("div") |>
  find_element("#id1")

s("div") |>
  find_element(id = "id1") |>
    find_element(class_name = "class2")

s(xpath = "//div[contains(@class, 'class1')]/div/p")

# Complex Xpath expressions are easier to read as chained CSS selectors.
# This is equivalent to above
s("div.class1") |>
  find_element("div") |>
    find_element("p")

```

---

find\_elements

*Find multiple HTML child elements*


---

**Description**

Find every available HTML element using a CSS selector, an XPath, or a variety of other methods.

**Usage**

```

find_elements(x, ...)

## S3 method for class 'selenider_session'
find_elements(
  x,

```

```

    css = NULL,
    xpath = NULL,
    id = NULL,
    class_name = NULL,
    name = NULL,
    ...
)

## S3 method for class 'selenider_element'
find_elements(
  x,
  css = NULL,
  xpath = NULL,
  id = NULL,
  class_name = NULL,
  name = NULL,
  ...
)
```

### Arguments

|                         |                                                       |
|-------------------------|-------------------------------------------------------|
| <code>x</code>          | A selenider session or element.                       |
| <code>...</code>        | Arguments passed to methods.                          |
| <code>css</code>        | A css selector.                                       |
| <code>xpath</code>      | An XPath.                                             |
| <code>id</code>         | The id of the element you want to select.             |
| <code>class_name</code> | The class name of the element you want to select.     |
| <code>name</code>       | The name attribute of the element you want to select. |

### Details

If more than one method is used to select an element (e.g. `css` and `xpath`), the first element which satisfies every condition will be found.

### Value

A `selenider_elements` object. Note that this is not a list, and you should be careful with the functions that you use with it. See the advanced usage vignette for more details: `vignette("advanced-usage", package = "selenider")`.

### See Also

- `ss()` to quickly select multiple elements without specifying the session.
- `find_element()` to select a single element.
- `selenider_session()` to begin a session.
- `elem_children()` and family to select elements using their relative position in the DOM.
- `elem_filter()` and `elem_find()` for filtering element collections.
- `as.list.selenider_elements()` to convert a `selenider_elements` object to a list.

## Examples

```
html <- "
<div id='outer-div'>
  <div>
    <p>Text 1</p>
    <p>Text 2</p>
    <p>Text 3</p>
  </div>
</div>

<div></div>
"

session <- minimal_selenider_session(html)

session |>
  find_elements("div")

# Or:
ss("div")

session |>
  find_element("#outer-div") |>
  find_elements("p")

# The above can be shortened to:
s("#outer-div") |>
  find_elements("p")
```

---

|                    |                                                            |
|--------------------|------------------------------------------------------------|
| get_actual_element | <i>Get the element associated with a selenider element</i> |
|--------------------|------------------------------------------------------------|

---

## Description

Turn a lazy selenium element or element collection into a backendNodeId (chromote) or a [selenium::WebElement](#). Use this to perform certain actions on the element that are not implemented in selenider.

get\_actual\_element() turns a selenider\_element object into a single backendNodeId or [selenium::WebElement](#) object. The function will wait for the object to exist in the DOM.

get\_actual\_elements() turns a selenider\_elements object into a list of [selenium::WebElement](#) objects, waiting for any parent objects to exist in the DOM.

## Usage

```
get_actual_element(x, timeout = NULL)

get_actual_elements(x, timeout = NULL)
```

**Arguments**

|         |                                                                                                                                  |
|---------|----------------------------------------------------------------------------------------------------------------------------------|
| x       | A selenider_element or selenider_elements object, produced by <a href="#">find_element()</a> / <a href="#">find_elements()</a> . |
| timeout | The timeout to use while asserting that the item exists. If NULL, the timeout of the selenider_element will be used.             |

**Value**

An integer (backendNodeId), or a [selenium::WebElement](#) object. `get_actual_elements()` returns a list of such objects.

**See Also**

- [s\(\)](#), [ss\(\)](#), [find\\_element\(\)](#) and [find\\_elements\(\)](#) to select selenider elements.
- [elem\\_cache\(\)](#) and [elem\\_cache\(\)](#) to cache these values.
- The [Chrome Devtools Protocol documentation](#) for the operations that can be performed using a backend node id. Note that this requires the [chromote::ChromoteSession](#) object, which can be retrieved using `<selenider_session>$driver`.
- The documentation for [selenium::WebElement\(\)](#) to see the things you can do with a `WebElement`.

**Examples**

```
html <- "
<div>
<p>Text</p>
<p>More text</p>
</div>
"

session <- minimal_selenider_session(html)

elem <- s("div") |>
  get_actual_element()

# The ChromoteSession/SeleniumSession can be accessed using session$driver
driver <- session$driver

if (inherits(driver, "ChromoteSession")) {
  driver$DOM$getBoxModel(backendNodeId = elem)
} else if (inherits(elem, "WebElement")) {
  elem$get_rect()
}

elems <- ss("p") |>
  get_actual_elements()

if (inherits(driver, "ChromoteSession")) {
  driver$DOM$describeNode(backendNodeId = elems[[1]])
} else if (inherits(elems[[1]], "WebElement")) {
```

```

    elems[[1]]$get_rect()
  }

```

---

|                 |                                   |
|-----------------|-----------------------------------|
| get_page_source | <i>Read the HTML of a session</i> |
|-----------------|-----------------------------------|

---

## Description

Uses `xml2::read_html()` to read the page source of the session

## Usage

```
get_page_source(session = NULL, ...)
```

## Arguments

|                      |                                                      |
|----------------------|------------------------------------------------------|
| <code>session</code> | Optionally, a <code>selenider_session</code> object. |
| <code>...</code>     | Passed into <code>xml2::read_html()</code>           |

## Value

An XML document.

## See Also

Other global actions: `back()`, `current_url()`, `execute_js_fn()`, `open_url()`, `reload()`, `scroll_to()`, `take_screenshot()`

## Examples

```

html <- "
<p>Example text</p>
"

session <- minimal_selenider_session(html)

get_page_source()

```

get\_session

*Get or set the local selenider session***Description**

Change the locally defined `selenider_session()` object, allowing it to be used in functions like `s()` without explicitly providing it.

`get_session()` retrieves the current local session. If none have been created, a session is created automatically.

`local_session()` sets the local session. The function uses `withr::defer()` to make sure the session is closed and the local session is set to its previous value when it is no longer needed.

`with_session()` runs some code with a temporary local session. The session is closed and the local session is set to its previous value when the code finishes executing.

**Usage**

```
get_session(create = TRUE, .env = rlang::caller_env())
```

```
local_session(session, .local_envir = rlang::caller_env(), close = TRUE)
```

```
with_session(session, code, close = TRUE)
```

**Arguments**

|                           |                                                                                                                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>create</code>       | If a session is not found, should we create a new one? If this is FALSE and a session is not found, NULL is returned.                                                                                                              |
| <code>.env</code>         | If <code>get_session()</code> creates a session, the environment where this session is being used.                                                                                                                                 |
| <code>session</code>      | The <code>selenider_session()</code> object to use.                                                                                                                                                                                |
| <code>.local_envir</code> | The environment where the session is being used. When the function associated with this environment finishes execution, the session will be reset.                                                                                 |
| <code>close</code>        | Should we close session when the local session is reset? Set this to FALSE if you want to use the session even if it is no longer the local session. If you want to close the session manually, use <code>close_session()</code> . |
| <code>code</code>         | The code to run with the local session set.                                                                                                                                                                                        |

**Details**

Use `withr::deferred_run()` to reset any local sessions set using `local_session()`.

**Value**

`get_session()` returns the local `selenider_session()` object (or a newly created session).

`local_session()` returns the *previous* local session object (or NULL). This is the same as running `get_session()` before this function.

`with_session()` returns the result of code.

**See Also**

`selenider_session()`, which calls `local_session()` unless otherwise specified.

**Examples**

```
# Don't set the local session, since we want to do it manually.
session <- selenider_session(local = FALSE)

get_session(create = FALSE) # NULL

local_session(session, close = FALSE)

get_session(create = FALSE)

withr::deferred_run()

get_session(create = FALSE) # NULL

# By default, the local session is only set inside the function that it is
# called.
# If we want to set the local session outside the scope of a function, we
# need to use the `.local_envir` argument.
set_my_session <- function(env = rlang::caller_env()) {
  # caller_env() is the environment where the function is called.
  local_session(session, .local_envir = env, close = FALSE)
}

set_my_session()

with_session(
  session,
  {
    get_session(create = FALSE)
  },
  close = FALSE
)

get_session(create = FALSE)
```

---

has\_attr

*Does an element's attribute match a value?*


---

**Description**

`has_attr()` checks that an element's attribute matches a value, while `attr_contains()` checks that an element's attribute contains a value.

`has_value()` is a shortcut for `has_attr("value")`: it checks that an element's value matches a string or number.



**Usage**

```
has_attr(x, name, value)

attr_contains(x, name, value)

has_value(x, value)
```

**Arguments**

|       |                                                                                                                                                    |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| x     | A selenider_element object.                                                                                                                        |
| name  | The name of the attribute.                                                                                                                         |
| value | The value of the attribute. For has_attr() and has_value(), this can be a string or a numeric value, while attr_contains() can only take a string. |

**Value**

A boolean value: TRUE or FALSE.

**See Also**

Other conditions: [has\\_css\\_property\(\)](#), [has\\_length\(\)](#), [has\\_name\(\)](#), [has\\_text\(\)](#), [is\\_enabled\(\)](#), [is\\_present\(\)](#), [is\\_visible\(\)](#)

**Examples**

```
html <- "
<input class='myclass' value='1.0' data-customattr='Custom attribute text'>
"

session <- minimal_selenider_session(html)

has_attr(s("input"), "class", "myclass")

has_attr(s("input"), "value", 1)
has_value(s("input"), 1)

attr_contains(s("input"), "data-customattr", "Custom attribute")
```

---

|                  |                                                      |
|------------------|------------------------------------------------------|
| has_css_property | <i>Does an element's css property match a value?</i> |
|------------------|------------------------------------------------------|

---

**Description**

Check that the CSS property (e.g. "background-color") of an element matches a value.

**Usage**

```
has_css_property(x, property, value)
```

**Arguments**

|          |                              |
|----------|------------------------------|
| x        | A selenider_element object.  |
| property | The name of the CSS property |
| value    | The value of the attribute.  |

**Value**

A boolean value: TRUE or FALSE.

**See Also**

Other conditions: [has\\_attr\(\)](#), [has\\_length\(\)](#), [has\\_name\(\)](#), [has\\_text\(\)](#), [is\\_enabled\(\)](#), [is\\_present\(\)](#), [is\\_visible\(\)](#)

**Examples**

```
html <- "
<div style='display:none;'></div>
"

session <- minimal_selenider_session(html)

has_css_property(s("div"), "display", "none")
```

---

has\_length

*Does a collection have a certain number of elements?*


---

**Description**

has\_length() and has\_size() checks that a collection of HTML elements contains a certain number of elements.

**Usage**

```
has_length(x, n)
```

```
has_size(x, n)
```

```
has_at_least(x, n)
```

**Arguments**

|   |                                                                                                                            |
|---|----------------------------------------------------------------------------------------------------------------------------|
| x | A selenider_elements object.                                                                                               |
| n | A numeric vector of possible lengths of x. For has_at_least(), this must be a single number to compare to the length of x. |

## Details

has\_at\_least() checks that a collection contains *at least* n elements.

These functions do not implement a retry mechanism, and only test a condition once. Use [elem\\_expect\(\)](#) or [elem\\_wait\\_until\(\)](#) to use these conditions in tests.

## Value

A boolean value: TRUE or FALSE

## See Also

Other conditions: [has\\_attr\(\)](#), [has\\_css\\_property\(\)](#), [has\\_name\(\)](#), [has\\_text\(\)](#), [is\\_enabled\(\)](#), [is\\_present\(\)](#), [is\\_visible\(\)](#)

## Examples

```
html <- "  
<div class='div1'></div>  
<div class='div2'></div>  
<div class='div3'></div>  
"  
session <- minimal_selenider_session(html)  
  
has_length(ss("div"), 3)  
has_at_least(ss("div"), 2)
```

---

has\_name

*Does an element have a tag name?*

---

## Description

Check that an element has a specified tag name

## Usage

```
has_name(x, name)
```

## Arguments

|      |                             |
|------|-----------------------------|
| x    | A selenider_element object. |
| name | A string.                   |

## Value

A boolean value.

**See Also**

Other conditions: [has\\_attr\(\)](#), [has\\_css\\_property\(\)](#), [has\\_length\(\)](#), [has\\_text\(\)](#), [is\\_enabled\(\)](#), [is\\_present\(\)](#), [is\\_visible\(\)](#)

**Examples**

```
html <- "
<div id='mydiv'></div>
"

session <- minimal_selenider_session(html)

has_name(s("#mydiv"), "p")

has_name(s("#mydiv"), "div")
```

---

has\_text

*Does an element contain a pattern?*


---

**Description**

`has_text()` checks that an element's inner text contains a string, while `has_exact_text()` checks that the inner text *only* contains the string. Both functions throw an error if the element does not exist in the DOM.

**Usage**

```
has_text(x, text)

has_exact_text(x, text)
```

**Arguments**

|                   |                                                  |
|-------------------|--------------------------------------------------|
| <code>x</code>    | A <code>selenider_element</code> object.         |
| <code>text</code> | A string, used to test the element's inner text. |

**Details**

These functions do not implement a retry mechanism, and only test a condition once. Use [elem\\_expect\(\)](#) or [elem\\_wait\\_until\(\)](#) to use these conditions in tests.

**Value**

A boolean value: TRUE or FALSE.

**See Also**

Other conditions: [has\\_attr\(\)](#), [has\\_css\\_property\(\)](#), [has\\_length\(\)](#), [has\\_name\(\)](#), [is\\_enabled\(\)](#), [is\\_present\(\)](#), [is\\_visible\(\)](#)

### Examples

```
html <- "  
<p>Example text</p>  
<p class='empty'></p>  
"  
  
session <- minimal_selenider_session(html)  
  
has_text(s("p"), "Example") # TRUE  
  
has_exact_text(s("p"), "Example") # FALSE  
  
has_exact_text(s("p"), "Example text") # TRUE  
  
# has_exact_text() is useful for checking when there is no text,  
# since has_text("") will always be TRUE.  
has_exact_text(s(".empty"), "")
```

---

|            |                               |
|------------|-------------------------------|
| is_enabled | <i>Is an element enabled?</i> |
|------------|-------------------------------|

---

### Description

is\_disabled() checks that an element has the disabled attribute set to TRUE, while is\_enabled() checks that it does not. Both functions throw an error if the element does not exist in the DOM.

### Usage

```
is_enabled(x)  
  
is_disabled(x)
```

### Arguments

x                      A selenider\_element object.

### Details

These functions do not implement a retry mechanism, and only test a condition once. Use [elem\\_expect\(\)](#) or [elem\\_wait\\_until\(\)](#) to use these conditions in tests.

### Value

A boolean value: TRUE or FALSE.

### See Also

Other conditions: [has\\_attr\(\)](#), [has\\_css\\_property\(\)](#), [has\\_length\(\)](#), [has\\_name\(\)](#), [has\\_text\(\)](#), [is\\_present\(\)](#), [is\\_visible\(\)](#)

**Examples**

```
html <- "
<button></button>
<button disabled></button>
"

session <- minimal_selenider_session(html)

is_enabled(s("button")) # TRUE

is_disabled(ss("button")[[2]]) # TRUE
```

---

**is\_present***Does an element exist?*

---

**Description**

`is_present()` and `is_in_dom()` checks if an element is present on the page, while `is_missing()` and `is_absent()` checks the opposite.

**Usage**

```
is_present(x)

is_in_dom(x)

is_absent(x)
```

**Arguments**

`x` A `selenider_element` object.

**Details**

These functions do not implement a retry mechanism, and only test a condition once. Use `elem_expect()` or `elem_wait_until()` to use these conditions in tests.

**Value**

A boolean value: TRUE or FALSE.

**See Also**

Other conditions: `has_attr()`, `has_css_property()`, `has_length()`, `has_name()`, `has_text()`, `is_enabled()`, `is_visible()`

**Examples**

```
html <- "
<p class='class1'></p>
"

session <- minimal_selenider_session(html)

is_present(s(".class1")) # TRUE

is_in_dom(s(".class2")) # FALSE

is_absent(s(".class2")) # TRUE
```

---

|            |                               |
|------------|-------------------------------|
| is_visible | <i>Is an element visible?</i> |
|------------|-------------------------------|

---

**Description**

`is_visible()` and `is_displayed()` checks that an element can be seen on the page, while `is_invisible()` and `is_hidden()` checks the opposite. All functions throw an error if the element is not in the DOM.

**Usage**

```
is_visible(x)

is_displayed(x)

is_hidden(x)

is_invisible(x)
```

**Arguments**

x                      A `selenider_element` object.

**Details**

These functions do not implement a retry mechanism, and only test a condition once. Use [elem\\_expect\(\)](#) or [elem\\_wait\\_until\(\)](#) to use these conditions in tests.

**Value**

A boolean value: TRUE or FALSE.

**See Also**

Other conditions: [has\\_attr\(\)](#), [has\\_css\\_property\(\)](#), [has\\_length\(\)](#), [has\\_name\(\)](#), [has\\_text\(\)](#), [is\\_enabled\(\)](#), [is\\_present\(\)](#)

**Examples**

```
html <- "  
<div style='visibility:hidden;'>Content 1</div>  
<div style='display:none'>Content 2</div>  
<div>Content 3</div>  
"  
  
session <- minimal_selenider_session(html)  
  
is_visible(s("div")) # FALSE  
  
is_invisible(ss("div")[[2]]) # TRUE  
  
is_visible(ss("div")[[3]]) # TRUE
```

---

keys

*Special keys*

---

**Description**

List of special keys, for use with [elem\\_send\\_keys\(\)](#).

**Usage**

keys

**Format**

A list containing selenider\_key objects.

**Examples**

```
keys$backspace
```



---

`minimal_selenider_session`*Create a session with custom HTML*

---

## Description

Create a `selenider_session` using custom HTML/JavaScript.

## Usage

```
minimal_selenider_session(html, js = NULL, ..., .env = rlang::caller_env())
```

## Arguments

|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| <code>html</code> | A string to use as HTML. Can also be an <code>xml2</code> object. |
| <code>js</code>   | A string (or <code>NULL</code> ) to use as JavaScript.            |
| <code>...</code>  | Passed into <a href="#">selenider_session()</a> .                 |
| <code>.env</code> | The environment in which the session will be used.                |

## Details

The function works by combining `html` and `js` into a single string, then writing this to a temporary file (and opening it in the session's browser).

## Value

A `selenider_session` object.

## See Also

[selenider\\_session\(\)](#)

## Examples

```
session <- minimal_selenider_session("<p>Example</p>")
```

---

|          |                   |
|----------|-------------------|
| open_url | <i>Open a URL</i> |
|----------|-------------------|

---

## Description

Navigate the browser to specified URL, waiting until the page is considered open before finishing.

## Usage

```
open_url(url, timeout = NULL, session = NULL)
```

## Arguments

|         |                                                                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| url     | The URL to navigate to: a string.                                                                                                                  |
| timeout | The maximum time to wait for the page to load, in seconds. This defaults to 60, unless in a Github Action, in which case it defaults to 5 minutes. |
| session | A <code>selenider_session</code> object. If not specified, the global session object (the result of <code>get_session()</code> ) is used.          |

## Value

The session object, invisibly.

## See Also

Other global actions: `back()`, `current_url()`, `execute_js_fn()`, `get_page_source()`, `reload()`, `scroll_to()`, `take_screenshot()`

## Examples

```
session <- selenider_session()

open_url("https://r-project.org")

# Or:
open_url(session = session, "https://r-project.org")
```

---

```
print.selenider_element
```

*Print a live HTML element*

---

## Description

Display an element or collection of elements by fetching the elements and displaying their HTML contents.

## Usage

```
## S3 method for class 'selenider_element'
print(x, width = getOption("width"), ..., timeout = NULL)

## S3 method for class 'selenider_elements'
print(x, width = getOption("width"), ..., n = 20, timeout = NULL)
```

## Arguments

|         |                                                             |
|---------|-------------------------------------------------------------|
| x       | A selenider_element or selenider_elements object.           |
| width   | The maximum width of the output.                            |
| ...     | Not used.                                                   |
| timeout | How long to wait for x to exist in order to print its HTML. |
| n       | The maximum number of elements to print.                    |

## Value

x, invisibly.

## Examples

```
html <- "
<div>
<p>Text 1</p>
<p>Text 2</p>
<p>Text 3</p>
<p>Text 4</p>
</div>
"

session <- minimal_selenider_session(html)

print(s("div"))

print(ss("p"))

print(ss("p"), n = 3)
```

---

print\_lazy

*Print an element without fetching it*


---

### Description

#### [Deprecated]

Display a summary of the steps needed to reach an element. This function is deprecated, as it is not useful for most users.

### Usage

```
print_lazy(x, ...)

## S3 method for class 'selenider_element'
print_lazy(x, ...)

## S3 method for class 'selenider_elements'
print_lazy(x, ...)
```

### Arguments

x                    A selenider\_element or selenider\_elements object.  
 ...                  Not used.

### Value

x, invisibly.

---

read\_html.selenider\_session

*Read a live HTML document*


---

### Description

`xml2::read_html()` can be used on a selenider session to read the HTML of the entire page, or on a selenider element to get the HTML of that element.

### Usage

```
read_html.selenider_session(
  x,
  encoding = "",
  ...,
  options = c("RECOVER", "NOERROR", "NOBLANKS")
)
```

```
read_html.selenium_element(
  x,
  encoding = "",
  timeout = NULL,
  outer = TRUE,
  ...,
  options = c("RECOVER", "NOERROR", "NOBLANKS")
)
```

### Arguments

|                                     |                                                                                                                                  |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <code>x</code>                      | A <code>selenium_session/selenium_element</code> object.                                                                         |
| <code>encoding, ..., options</code> | Passed into <code>xml2::read_html()</code> .                                                                                     |
| <code>timeout</code>                | How long to wait for <code>x</code> to exist in the DOM before throwing an error.                                                |
| <code>outer</code>                  | Whether to read the inner (all children of the current element) or outer (including the element itself) HTML of <code>x</code> . |

### Value

`read_html()` returns an XML document. Note that HTML will always be wrapped in a `<html>` and `<body>` tag, if it isn't already.

### Examples

```
library(rvest)

html <- "
<div>
<p>Example text</p>
</div>
"

session <- minimal_selenium_session(html)

read_html(session)
read_html(s("div"))
```

---

reload

*Reload the current page*

---

### Description

`reload()` and `refresh()` both reload the current page.

**Usage**

```
reload(timeout = NULL, session = NULL)

refresh(timeout = NULL, session = NULL)
```

**Arguments**

|         |                                                                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout | The maximum time to wait for the page to load, in seconds. This defaults to 60, unless in a Github Action, in which case it defaults to 5 minutes. |
| session | A <code>selenider_session</code> object. If not specified, the global session object (the result of <code>get_session()</code> ) is used.          |

**Value**

The session object, invisibly.

**See Also**

Other global actions: `back()`, `current_url()`, `execute_js_fn()`, `get_page_source()`, `open_url()`, `scroll_to()`, `take_screenshot()`

**Examples**

```
session <- selenider_session()

open_url("https://r-project.org")

reload()
```

---

s

*Select HTML elements*


---

**Description**

Both `s()` and `ss()` allow you to select elements without specifying a session object.

`s()` selects a single element, being a shorthand for `find_element()` on the current session.

`ss()` selects multiple elements, being a shorthand for `find_elements()`.

**Usage**

```
s(css = NULL, xpath = NULL, id = NULL, class_name = NULL, name = NULL)

ss(css = NULL, xpath = NULL, id = NULL, class_name = NULL, name = NULL)
```

## Arguments

|                         |                                                       |
|-------------------------|-------------------------------------------------------|
| <code>css</code>        | A css selector.                                       |
| <code>xpath</code>      | An XPath.                                             |
| <code>id</code>         | The id of the element you want to select.             |
| <code>class_name</code> | The class name of the element you want to select.     |
| <code>name</code>       | The name attribute of the element you want to select. |

## Details

Both functions allow the starting point for chains of selectors to be made more concise. Both use `get_session()` to get the global session object. If you want to pass in a session, use `find_element()/find_elements()` instead.

## Value

`s()` returns a `selenider_element` object. `ss()` returns a `selenider_elements` object. Note that this is not a list, and you should be careful with the functions that you use with it. See the advanced usage vignette for more details: `vignette("advanced-usage", package = "selenider")`.

## See Also

- `find_element()` and `find_elements()`
- `selenider_session()` to begin a session.

## Examples

```
html <- "
<div>
<p id='id1' class='inner'></p>
<div class='child'>
<p class='inner'></p>
</div>
</div>
"

session <- minimal_selenider_session(html)

s("#id1")

# This is the equivalent of:
find_element(session, "#id1")

ss(".inner")

# This is the equivalent of:
find_element(session, ".inner")

# This provides a more concise way to begin a chain of selectors
s("div") |>
```

```
find_element(".child") |>  
find_element(".inner")
```

---

scroll\_to

*Scroll along the page*

---

### Description

scroll\_to() scrolls the page to the specified coordinates.

scroll\_by() scrolls the page by the specified amount.

### Usage

```
scroll_to(top = 0, left = 0, session = NULL)
```

```
scroll_by(top = 0, left = 0, session = NULL)
```

### Arguments

|         |                                                                                                                                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------|
| top     | The vertical scroll position/offset, in pixels.                                                                                 |
| left    | The horizontal scroll position/offset, in pixels.                                                                               |
| session | A selenider_session object. If not specified, the global session object (the result of <a href="#">get_session()</a> ) is used. |

### See Also

Other global actions: [back\(\)](#), [current\\_url\(\)](#), [execute\\_js\\_fn\(\)](#), [get\\_page\\_source\(\)](#), [open\\_url\(\)](#), [reload\(\)](#), [take\\_screenshot\(\)](#)

### Examples

```
session <- selenider_session()  
  
open_url("https://r-project.org")  
  
scroll_to(100, 100)  
  
# Scrolls an additional 100 pixels down  
scroll_by(100)
```



---

|                  |                          |
|------------------|--------------------------|
| selenider-config | <i>Selenider options</i> |
|------------------|--------------------------|

---

### Description

selenider has a few options, allowing you to specify the session and browser to use without having to tell `selenider_session()` this information every time.

- `selenider.session` - The package to use as a backend: either "chromote", "selenium" or "rselenium".
- `selenider.browser` - The name of the browser to run the session in; one of "chrome", "firefox", "edge", "safari", or another valid browser name.

---

|                     |                                       |
|---------------------|---------------------------------------|
| selenider_available | <i>Check if selenider can be used</i> |
|---------------------|---------------------------------------|

---

### Description

Checks if selenider's dependencies are available, and that we are in an environment where it makes sense to open a selenider session.

`skip_if_selenider_unavailable()` skips a test that test if `selenider_available()` returns FALSE.

### Usage

```
selenider_available(session = c("chromote", "selenium"), online = TRUE)
```

```
skip_if_selenider_unavailable(session = c("chromote", "selenium"))
```

### Arguments

|                      |                                                               |
|----------------------|---------------------------------------------------------------|
| <code>session</code> | Which session we should check. "chromote" is used by default. |
| <code>online</code>  | Whether we need to check for an internet connection.          |

### Details

Specifically, the following is checked:

- The `SELENIDER_AVAILABLE` environment variable. Set this to "TRUE" or "FALSE" to override the return value of this function.
- Whether we are on CRAN (using the `NOT_CRAN` environment variable). If we are, the function returns FALSE.
- Whether an internet connection is available (using `curl::nslookup()`).

If session is "chromote", we also check:

- Whether chromote is installed.
- Whether `chromote::find_chrome()` does not error.

If session is "selenium", we check:

- Whether selenium is installed.
- Whether we can find a valid browser that is supported by selenium.

### Value

A boolean flag: TRUE or FALSE.

### Examples

```
selenider_available()
```

---

|                   |                        |
|-------------------|------------------------|
| selenider_session | <i>Start a session</i> |
|-------------------|------------------------|

---

### Description

Create a session in selenider. If you create a session in the global environment it will be made available to other functions (like `open_url()`) without having to pass it in, and will close automatically when the R session is closed. Alternatively, if it is created inside a function, it will be closed as soon as the function finishes executing. To customise this, use the `.env` and `local` arguments.

### Usage

```
selenider_session(
  session = getOption("selenider.session"),
  browser = getOption("selenider.browser"),
  timeout = 4,
  options = NULL,
  driver = NULL,
  local = TRUE,
  .env = rlang::caller_env(),
  view = FALSE,
  selenium_manager = TRUE,
  quiet = TRUE
)
```

**Arguments**

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| session                       | The package to use as a backend: either "chromote", "selenium". By default, chromote is used, since this tends to be faster and more reliable. Change the default value using the <code>selenider.session</code> option.                                                                                                                                                                                                                                                                                                                                                                          |
| browser                       | The name of the browser to run the session in; one of "chrome", "firefox", "edge", "safari", or another valid browser name. If NULL, the function will try to work out which browser you have installed. If we are using chromote, this option is ignored, since chromote only works on Chrome. Change the default value of this parameter using the <code>selenider.browser</code> option.                                                                                                                                                                                                       |
| timeout                       | The default time to wait when collecting an element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| options                       | A <code>chromote_options()</code> or <code>selenium_options()</code> object, used to specify options that are specific to chromote or selenium. See Details for some useful examples of this.                                                                                                                                                                                                                                                                                                                                                                                                     |
| driver                        | A driver object to use instead of creating one manually. This can be one of: <ul style="list-style-type: none"> <li>• A <code>chromote::ChromoteSession</code> object.</li> <li>• A <code>shinytest2::AppDriver</code> object.</li> <li>• An <code>selenium::SeleniumSession</code> object.</li> <li>• A Selenium server object, created by <code>selenium::selenium_server()</code>. In this case, a client will be created using the server object.</li> <li>• A list/environment containing the <code>selenium::SeleniumSession</code> object, the Selenium server object, or both.</li> </ul> |
| local                         | Whether to set the session as the local session object, using <code>local_session()</code> . If this is FALSE, you will have to pass this into the session argument of other functions (like <code>open_url()</code> ), and close the session manually using <code>close_session()</code> .                                                                                                                                                                                                                                                                                                       |
| .env                          | Passed into <code>local_session()</code> , to define the environment in which the session is used. Change this if you want to create the session inside a function and then use it outside the function (see Examples). Use <code>rlang::caller_env()</code> in this case.                                                                                                                                                                                                                                                                                                                        |
| view, selenium_manager, quiet | <b>[Deprecated]</b> Use the options argument instead.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

**Value**

A `selenider_session` object. Use `session$driver` to retrieve the driver object that controls the browser.

**Useful session-specific options**

See `chromote_options()` and `selenium_options()` for the full range.

**Making a chromote session non-headless:**

By default, chromote will run in headless mode, meaning that you won't actually be able to see the browser as you control it. Use the view argument to `chromote_options()` to change this:

```
session <- selenider_session(
  options = chromote_options(view = TRUE)
)
```

**Prevent creation of a selenium server:**

Sometimes, you want to manage the Selenium server separately, and only let selenider create client objects to attach to the server. You can do this by passing NULL into the `server_options` argument to `selenium_options()`:

```
session <- selenider_session(
  "selenium",
  options = selenium_options(server_options = NULL)
)
```

If the port you are using is not 4444, you will need to pass in the `port` argument to `selenium_client_options()` as well:

```
session <- selenider_session(
  "selenium",
  options = selenium_options(
    client_options = selenium_client_options(port = YOUR_PORT),
    server_options = NULL
  )
)
```

One example of when this may be useful is when you are managing the Selenium server using Docker.

**Store the Selenium server persistently:**

By default, selenium will download and store the Selenium server JAR file in a temporary directory, which will be deleted when the R session finishes. This means that every time you start a new R session, this file will be re-downloaded. You can store the JAR file permanently using the `temp` argument to `selenium_server_options()`:

```
session <- selenider_session(
  "selenium",
  options = selenium_options(
    server_options = selenium_server_options(temp = TRUE)
  )
)
```

The downside of this is you may end up using a lot of storage, especially if a new version of Selenium is released and the old server file is left on the filesystem.

You can also use the `path` argument to `selenium_server_options()` to specify the directory where the JAR file should be stored.

**Structure of a selenider session**

A `selenider_session` object has several components that can be useful to access:

- `session` - The type of session, either "chromote" or "selenium".
- `driver` - The driver object used to control the browser. This is either a `chromote::ChromoteSession` or `selenium::SeleniumSession` object. This is useful if you want to do something with the driver that is not directly supported by selenider. See `get_actual_element()` for some examples of this.

- `server` - The Selenium server object, if one was created or passed in.
- `id` - A unique ID that can be used to identify the session.

Access these components using `$` (e.g. `session$driver`).

### Custom drivers

If you want complete manual control over creating the underlying driver, you can pass your own driver argument to stop selenider from creating the driver for you.

You can also supply a [shinytest2::AppDriver](#) object, allowing selenider and shinytest2 to share a session:

```
shiny_app <- shiny::shinyApp(
  ui = shiny::fluidPage(
    # ... Your UI
  ),
  server = function(input, output) {
    # ... Your server
  }
)

app <- shinytest2::AppDriver$new()

session <- selenider_session(
  driver = app
)
```

### See Also

- [close\\_session\(\)](#) to close the session. Note that this will not reset the result of [get\\_session\(\)](#), which is why [withr::deferred\\_run\(\)](#) is preferred.
- [local\\_session\(\)](#) and [with\\_session\(\)](#) to manually set the local session object (and [get\\_session\(\)](#) to get it).
- [open\\_url\(\)](#), [s\(\)](#) and [find\\_elements\(\)](#) to get started once you have created a session.

### Examples

```
session_1 <- selenider_session(timeout = 10)
# session_1 is the local session here

get_session() # Returns session 1

my_function <- function() {
  session_2 <- selenider_session()

  # In here, session_2 is the local session
  get_session()
} # When the function finishes executing, the session is closed
```

```

my_function() # Returns `session_2`

# If we want to use a session outside the scope of a function,
# we need to use the `.env` argument.
create_session <- function(timeout = 10, .env = rlang::caller_env()) {
  # caller_env() is the environment where the function is called
  selenider_session(timeout = timeout, .env = .env)
}

my_session <- create_session()

# We can now use this session outside the `create_session()` function
get_session()

# `my_session` will be closed automatically.

```

---

|                 |                                              |
|-----------------|----------------------------------------------|
| take_screenshot | <i>Take a screenshot of the current page</i> |
|-----------------|----------------------------------------------|

---

## Description

Take a screenshot of the current session state, saving this image to a file.

## Usage

```
take_screenshot(file = NULL, view = FALSE, session = NULL)
```

## Arguments

|         |                                                                                                                                        |
|---------|----------------------------------------------------------------------------------------------------------------------------------------|
| file    | The file path to save the screenshot to.                                                                                               |
| view    | Whether to open the interactively view the screenshot. If this is TRUE and file is NULL, the screenshot will be deleted after viewing. |
| session | A selenider_session object. If not specified, the global session object (the result of <a href="#">get_session()</a> ) is used.        |

## Value

file, if it is not NULL. Otherwise, the session object is returned, invisibly.

## See Also

Other global actions: [back\(\)](#), [current\\_url\(\)](#), [execute\\_js\\_fn\(\)](#), [get\\_page\\_source\(\)](#), [open\\_url\(\)](#), [reload\(\)](#), [scroll\\_to\(\)](#)

## Examples

```
session <- selenider_session()

open_url("https://www.google.com")

file_path <- withr::local_tempfile(fileext = ".png")

take_screenshot(file_path)
```

---

|                      |                          |
|----------------------|--------------------------|
| wdman_server_options | <i>RSelenium options</i> |
|----------------------|--------------------------|

---

## Description

**[Superseded]** Instruct selenider to use RSelenium instead of selenium. Passed into [selenium\\_options\(\)](#). This is not recommended, since RSelenium does not support the latest version of Selenium, and wdman (the server manager that RSelenium) uses, is not compatible with the latest version of Chrome.

## Usage

```
wdman_server_options(  
  version = "latest",  
  driver_version = "latest",  
  port = 4444L,  
  check = TRUE,  
  verbose = FALSE,  
  retcommand = FALSE,  
  ...  
)  
  
rselenium_client_options(  
  port = 4444L,  
  host = "localhost",  
  path = "/wd/hub",  
  version = "",  
  platform = "ANY",  
  javascript = TRUE,  
  native_events = TRUE,  
  extra_capabilities = list()  
)
```

## Arguments

|                |                                                    |
|----------------|----------------------------------------------------|
| version        | The version of Selenium server to use.             |
| driver_version | The version of the browser-specific driver to use. |
| port           | The port to run selenium client/server on.         |

check, verbose, retcommand, ...

Passed into `wdman::selenium()`.

host The host to connect to the selenium server over.

path, platform, javascript, native\_events, extra\_capabilities

Passed into `RSelenium::remoteDriver()`.

### Details

In `selenium_options()`, you can supply options to configure a server and client run by `RSelenium` instead of `selenium`. Instead of `selenium_server_options()`, you can use `wdman_server_options()` to allow `wdman` to run the Selenium server using `wdman::selenium()`.

Instead of using `selenium_client_options()`, you can use `rselenium_client_options()` to control the creation of an `RSelenium::remoteDriver()` object instead.

Note that the `driver` option of `selenider_session()` also accepts these objects in place of their `selenium` equivalents.

### Value

An options object that can be passed into `selenium_options()`.



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