



08 - Eventos II

Roteiro

- Eventos
 - Teclado
 - Mouse
 - Drag
- ActionChains



TECLADO

Keyboard Events

<https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent>



Eventos de teclado

Existem 3* tipos de eventos disparados por teclado

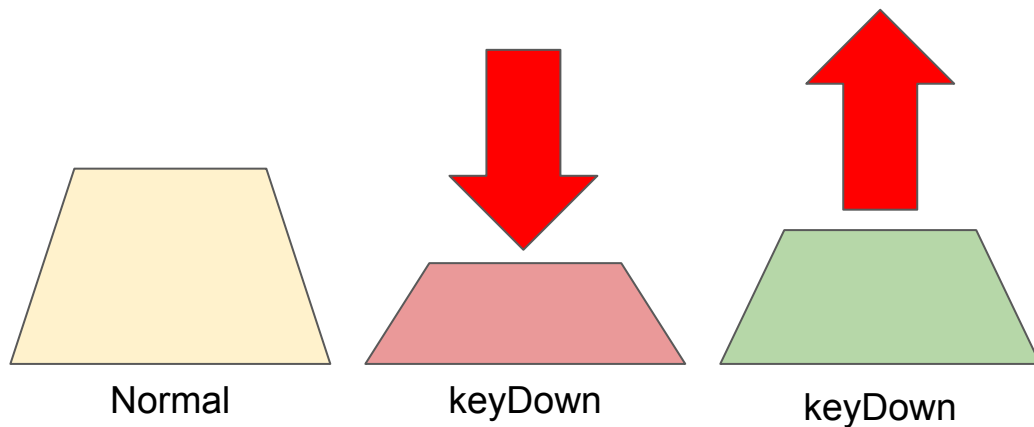
- keyup
- keydown
- accesskey
- keypress (obsoleto)



Eventos de teclado

Existem 3* tipos de eventos disparados por teclado

- **keyup**
- **keydown**
- **accesskey**
- **keypress** (obsoleto)



Vamos testar + Codar

<https://selenium.dunossauro.live/keyboard>



Eventos de teclado

Existem 3* tipos de eventos disparados por teclado

- keyup
- keydown
- accesskey
- keypress (obsoleto)

E também temos vários atributos, dos quais vou destacar 3 que considero mais importantes

- key (Valor da tecla)
- Atributos de teclas
 - shiftKey
 - altKey
 - metaKey
 - ctrlKey
- getModifierState()
 - CapsLock
 - shift
 - meta
 - os



Selenium + Eventos

parte 2



Selenium + Eventos

Eventos, em grande maioria, dependem de interações do usuário.

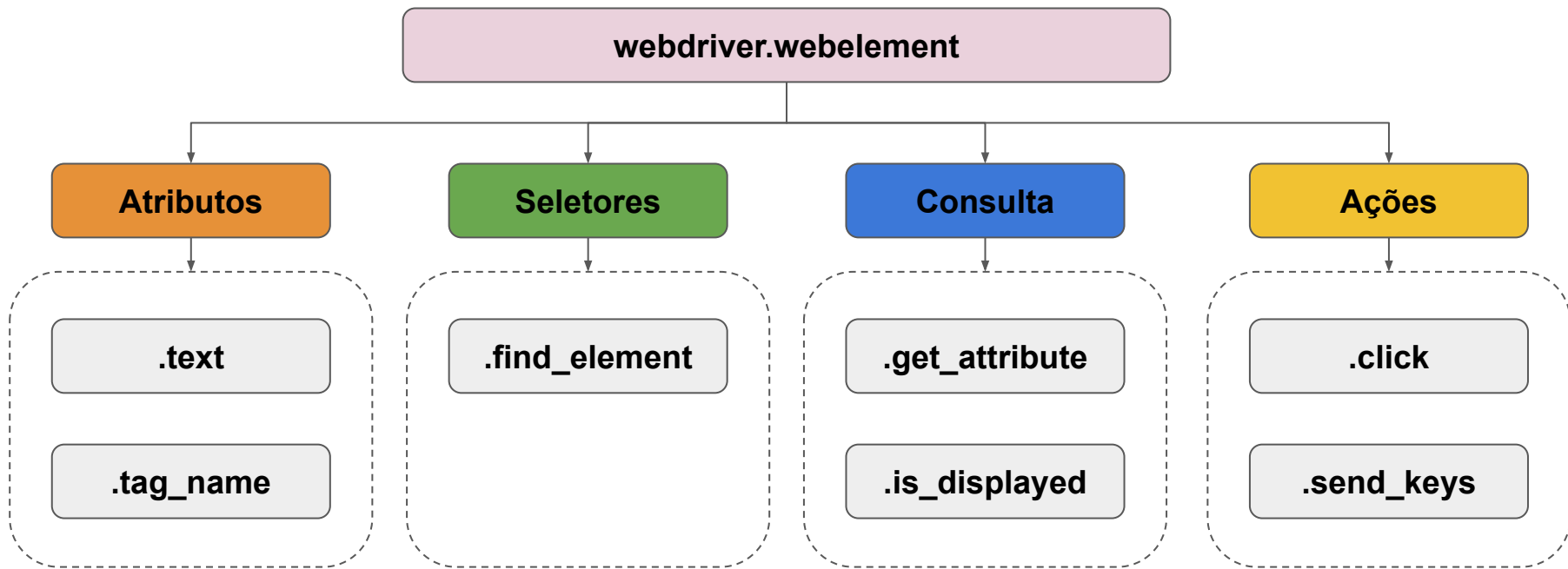
Nós podemos interagir com o browser de várias maneiras:

- Mouse
- Teclado
- Touch*
- ...



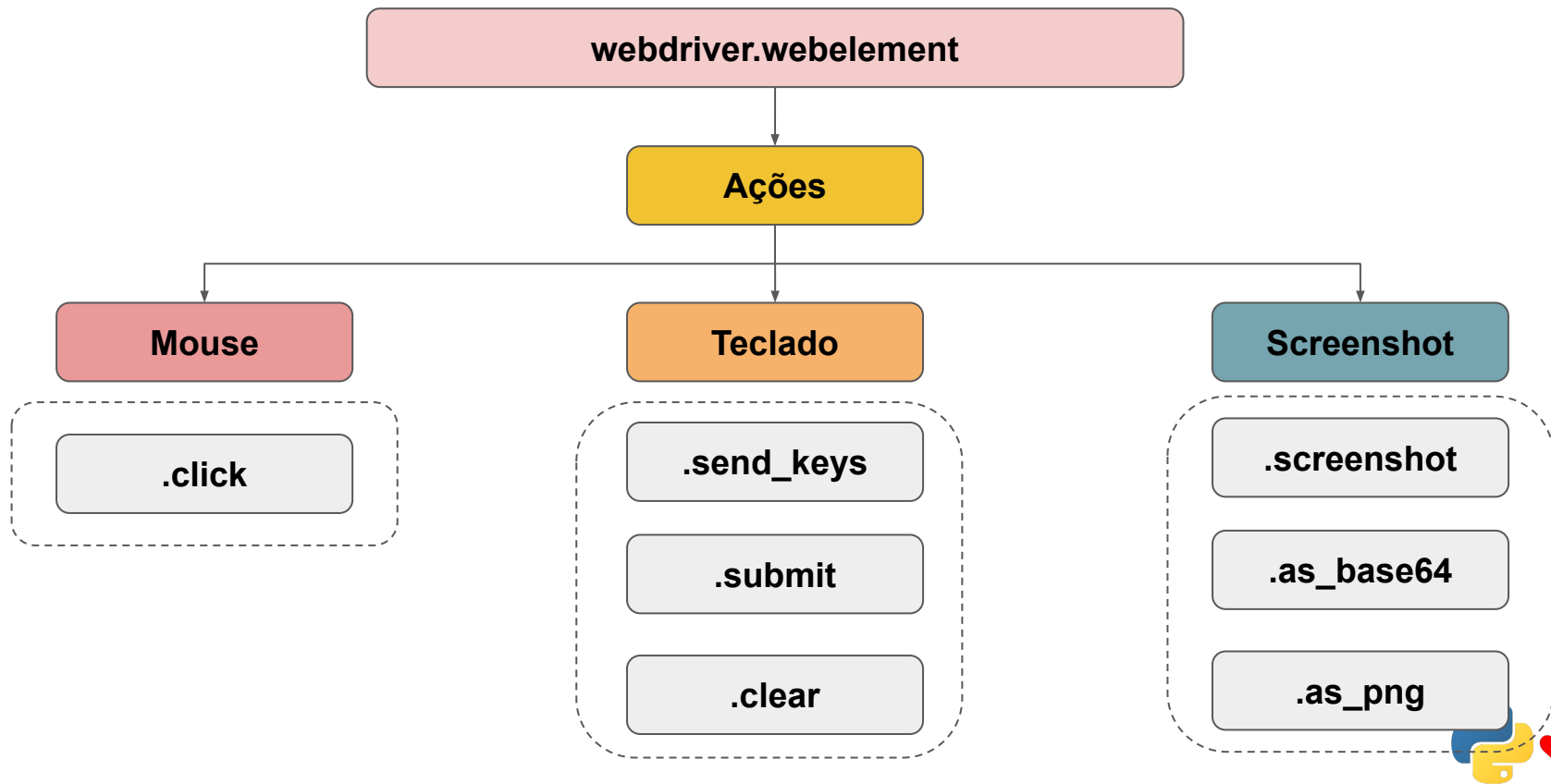
Selenium

[<https://selenium-python.readthedocs.io/api.html#module-selenium.webdriver.remote.webelement>]



Selenium

[<https://selenium-python.readthedocs.io/api.html#module-selenium.webdriver.remote.webelement>]



Action Chains

Low-level API



Cadeias de ações [https://selenium-python.readthedocs.io/api.html#module-selenium.webdriver.common.action_chains]

Action Chains são maneiras de automatizar *ações* de baixo nível.

Por exemplo, como uma tecla é pressionada?

- key Down
- key Up



Descrevendo ações

```
1. nome = browser.find_element_by_id('nome')  
  
2. nome.send_keys('eduardo')
```

Hi-level

```
1. nome = find_element(by.ID, 'nome')  
2.a move_to_element(nome)  
2.b key_down('e')  
2.c key_up('e')  
2.d key_down('d')  
2.e key_up('d')  
2.f key_down('u')
```

...

Low-level



ActionChains

Teclado

.key_down

.key_up

.send_keys

.send_keys_to_element

Voltando ao início

https://selenium.dunossauro.live/aula_08_a



Comparando níveis com código

```
from selenium.webdriver import Firefox

url = 'https://selenium.dunossauro.live/aula_08_a'

texto = 'eduardo'

browser = Firefox()

browser.get(url)

# Hi-level
elemento = browser.find_element_by_name('texto')
elemento.send_keys(texto)
```



Comparando níveis com código

```
from selenium.webdriver import Firefox
```

```
url = 'https://selenium.dunossauro.live/aula_08_a'
```

```
texto = 'eduardo'
```

```
browser = Firefox()
```

```
browser.get(url)
```

```
# Hi-level
```

```
elemento = browser.find_element_by_id('id')
```

```
elemento.send_keys(texto)
```

```
# Low-level
```

```
from selenium.webdriver.common.action_chains import ActionChains
```

```
low_level = ActionChains(browser)
```

```
low_level.move_to_element(elemento)
```

```
for letra in texto:
```

```
    low_level.key_down(letra)
```

```
    low_level.key_up(letra)
```

```
low_level.perform()
```

Comparando níveis com código

```
from selenium.webdriver import Firefox
```

```
url = 'https://selenium.dunossauro.live/aula_08_a'
```

```
texto = 'eduardo'
```

```
browser = Firefox()
```

```
browser.get(url)
```

```
# Hi-level
```

```
elemento = browser.find_element_by_id('id')
```

```
elemento.send_keys(texto)
```

```
# Low-level
```

```
from selenium.webdriver.common.action_chains import ActionChains
```

```
low_level = ActionChains(browser)
```

```
low_level.move_to_element(elemento)
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for letra in texto:
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    low_level.key_down(letra)
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```
low_level.perform()
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Comparando níveis com código

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texto = 'eduardo'
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browser = Firefox()
```

```
browser.get(url)
```

```
# Hi-level
```

```
elemento = browser.find_element_by_id('id')
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```
elemento.send_keys(texto)
```

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# Low-level
```

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from selenium.webdriver.common.action_chains import ActionChains
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```
low_level = ActionChains(browser)
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```
low_level.move_to_element(elemento)
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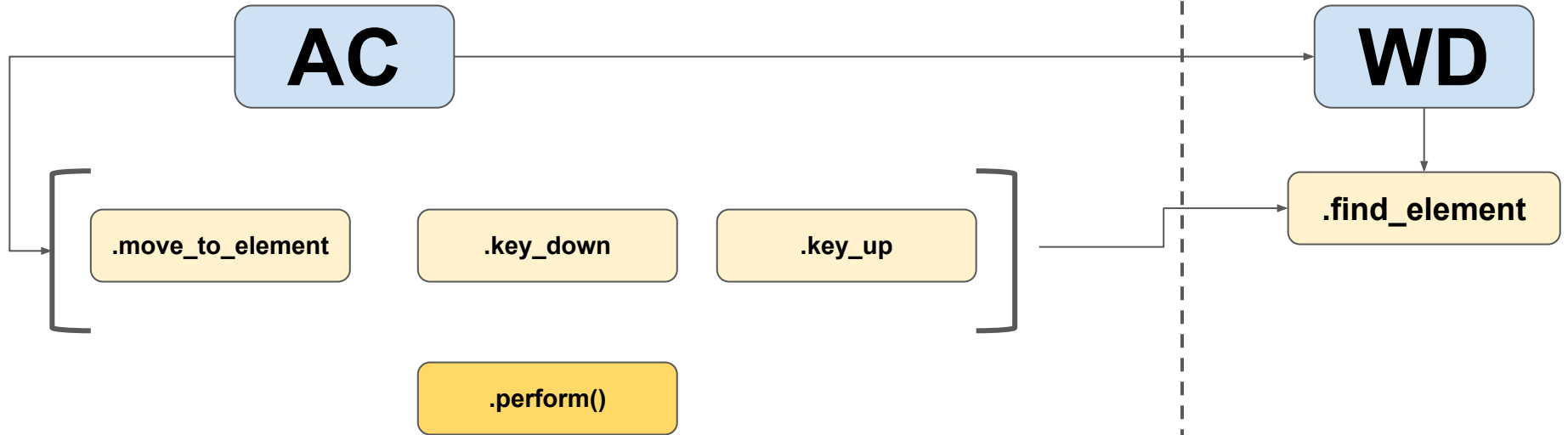
```
for letra in texto:
```

```
    low_level.key_down(letra)
```

```
    low_level.key_up(letra)
```

```
low_level.perform()
```

O fluxo



Vamos tentar de novo

https://selenium.dunossauro.live/aula_08_a



ActionChains

Movimento

`.move_by_offset`

`.move_to_element`

`.move_to_element_with_offset`

Teclado

`.key_down`

`.key_up`

`.send_keys`

`.send_keys_to_element`

Keys

<https://selenium-python.readthedocs.io/api.html#module-selenium.webdriver.common.keys>

ACESSAR, NÃO ESQUECER



```
# Low-level
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.common.keys import Keys

low_level = ActionChains(browser)
low_level.move_to_element(elemento)

low_level.key_up(Keys.SHIFT)

for letra in texto:
    low_level.key_down(letra)
    low_level.key_up(letra)

low_level.key_down(Keys.SHIFT)

low_level.perform()
```



```
# Low-level
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.common.keys import Keys

low_level = ActionChains(browser)
low_level.move_to_element(elemento)

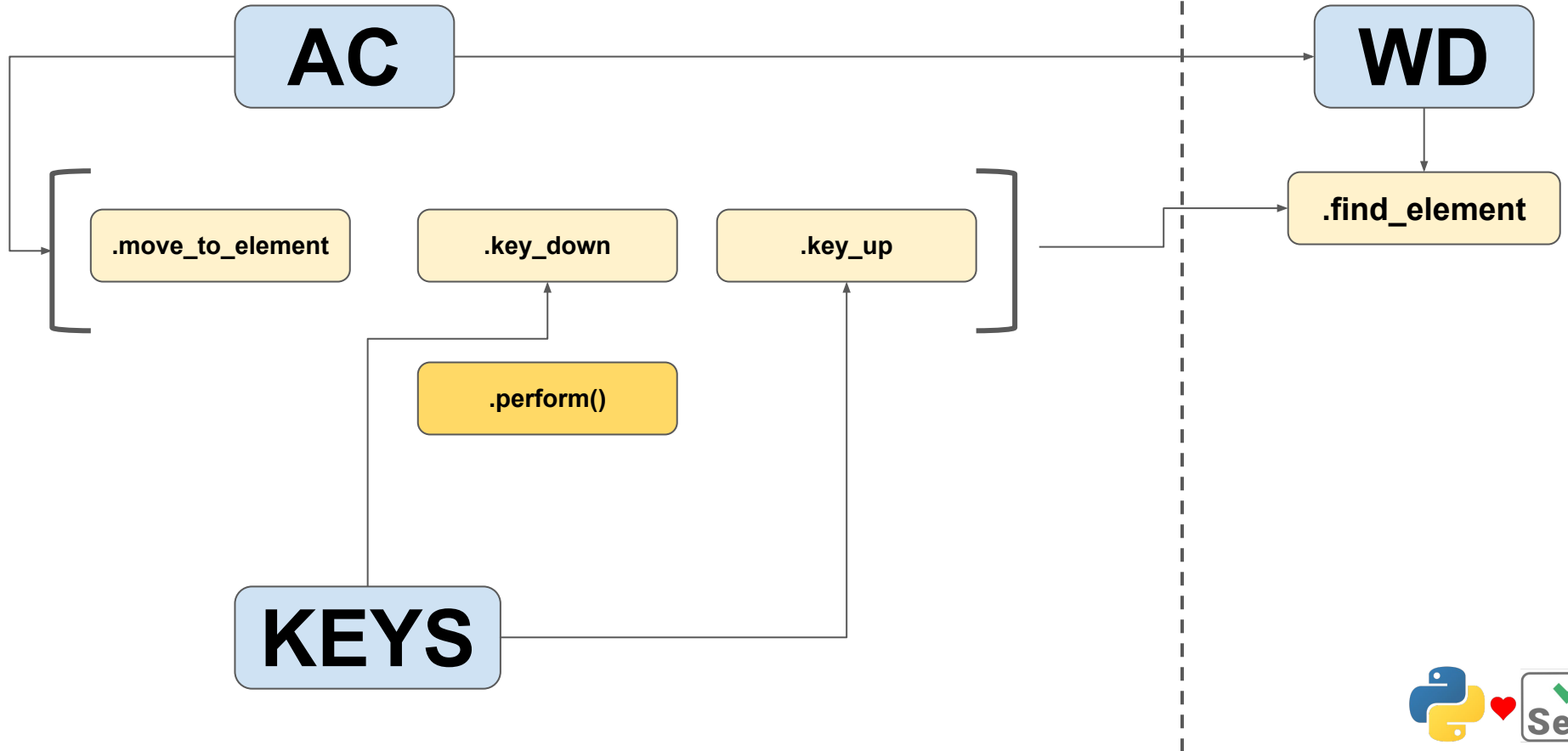
low_level.key_up(Keys.SHIFT)

for letra in texto:
    low_level.key_down(letra)
    low_level.key_up(letra)

low_level.key_down(Keys.SHIFT)

low_level.perform()
```

O fluxo



Vamos tentar de novo

https://selenium.dunossauro.live/aula_08_a



MOUSE



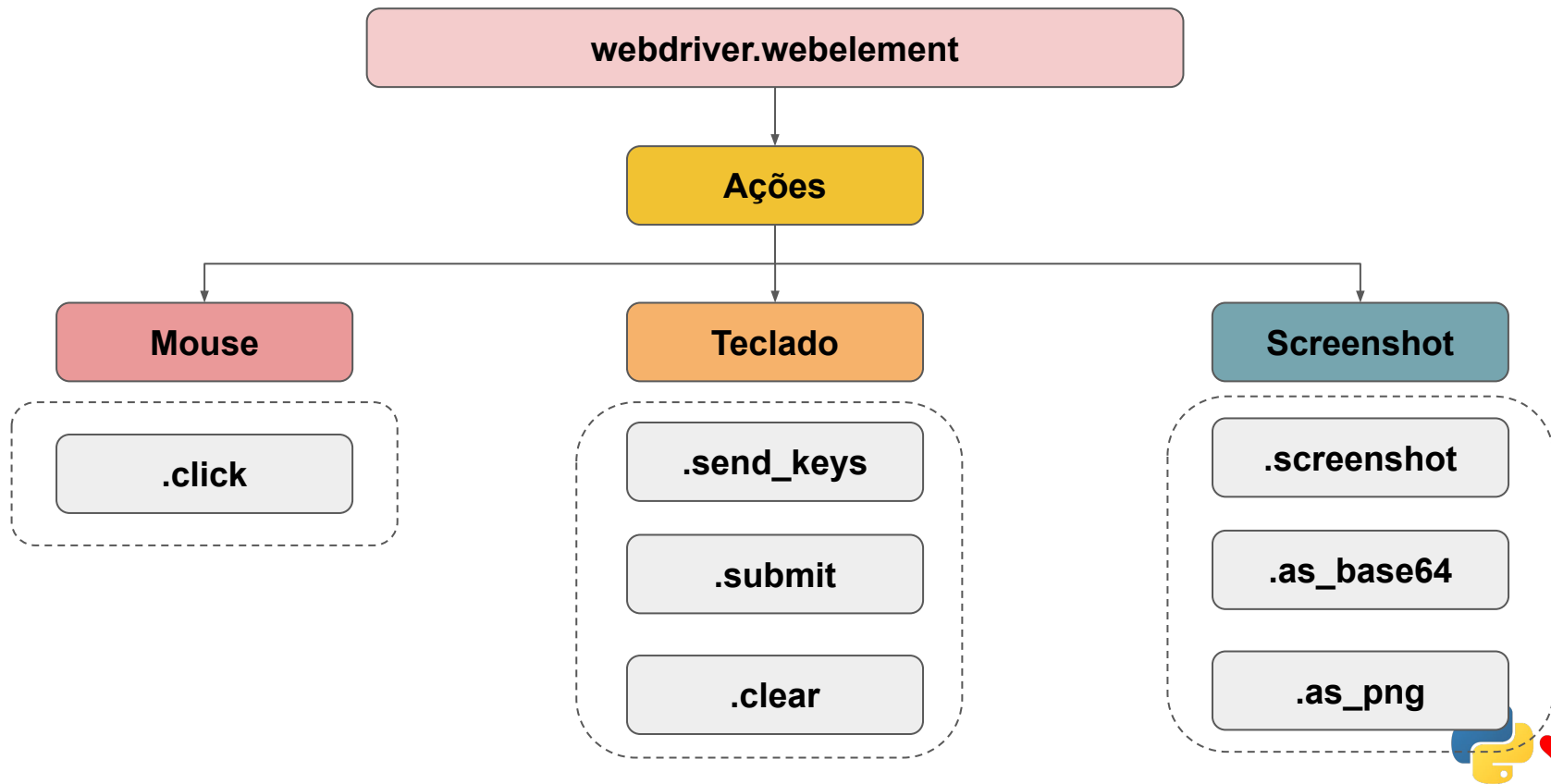
Relembrar é viver

<https://selenium.dunossauro.live/caixinha>



Selenium

[<https://selenium-python.readthedocs.io/api.html#module-selenium.webdriver.remote.webelement>]



ActionChains

Movimento

`.move_by_offset`

`.move_to_element`

`.move_to_element_with_offset`

Teclado

`.key_down`

`.key_up`

`.send_keys`

`.send_keys_to_element`

Mouse

`.click`

`.click_and_hold`

`.context_click`

`.double_click`



ActionChains

Movimento

`.move_by_offset`

`.move_to_element`

`.move_to_element_with_offset`

Teclado

`.key_down`

`.key_up`

`.send_keys`

`.send_keys_to_element`

Mouse

`.click`

`.click_and_hold`

`.context_click`

`.double_click`



ActionChains

Movimento

`.move_by_offset`

`.move_to_element`

`.move_to_element_with_offset`

Teclado

`.key_down`

`.key_up`

`.send_keys`

`.send_keys_to_element`

Mouse

`.click`

`.click_and_hold`

`.context_click`

`.double_click`



Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
- mouseleave
- click
- dblclick
- contextmenu

Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



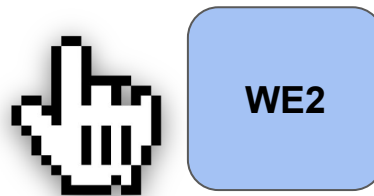
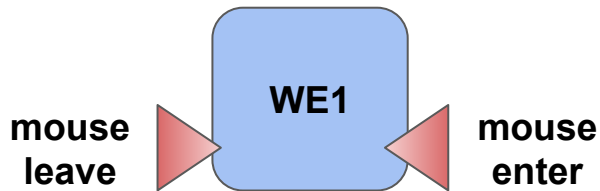
Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



```
>>> low_level.move_to_element(<WebElement1>)
```

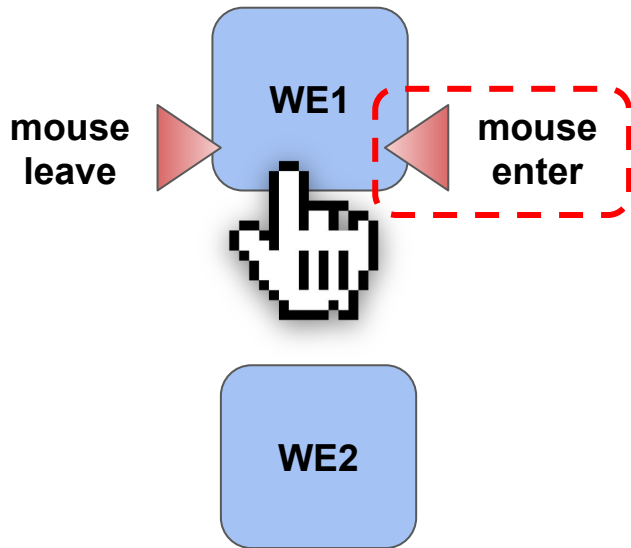
Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



```
>>> low_level.move_to_element(<WebElement1>)
```

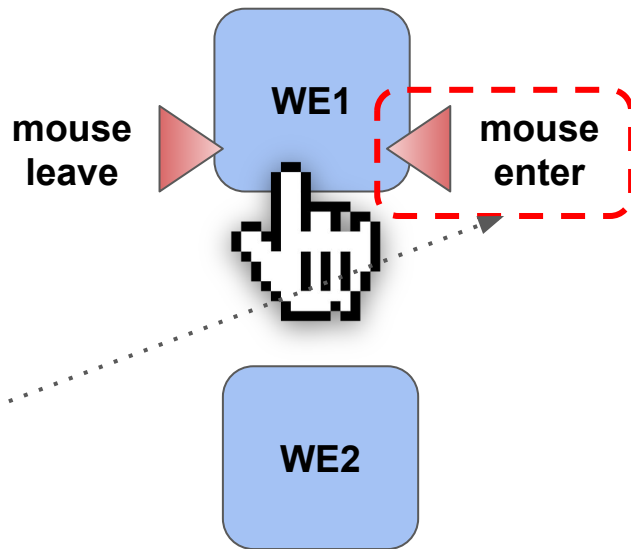
Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

Atributos de ação

- shiftKey
 - altKey
 - metaKey
 - ctrlKey
- }



```
>>> low_level.move_to_element(<WebElement1>)
```

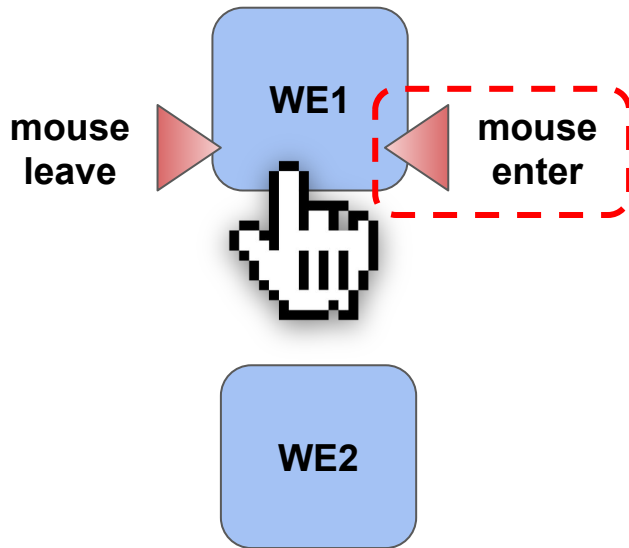

Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



```
>>> low_level.move_to_element(<WebElement2>)
```

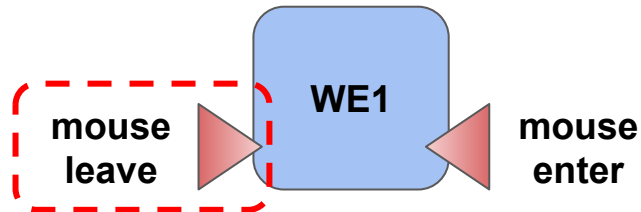
Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



```
>>> low_level.move_to_element(<WebElement2>)
```

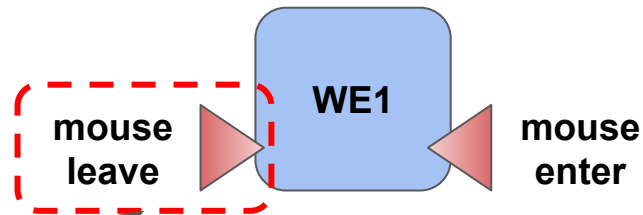
Eventos de Mouse

Tipos de eventos disparados por teclado

- mouseenter
 - mouseleave
 - click
 - dblclick
 - contextmenu
- } .move_to_element

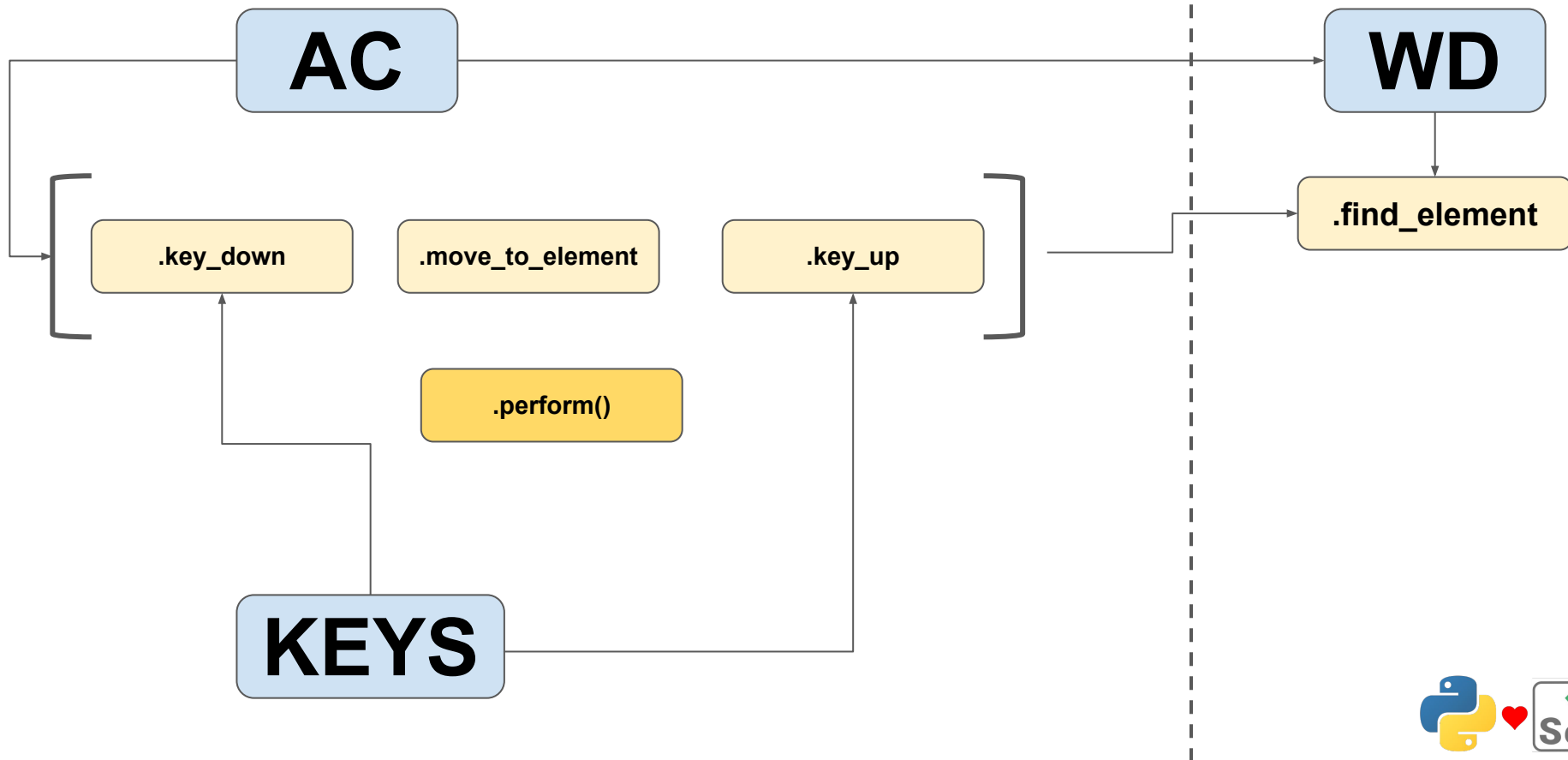
Atributos de ação

- shiftKey
- altKey
- metaKey
- ctrlKey



```
>>> low_level.move_to_element(<WebElement2>)
```

O fluxo




Agora vai

<https://selenium.dunossauro.live/caixinha>



D R A G a n d D R O P

(DnD)


 SeleniumHQ / selenium


Used by 54.4k · Watch 1.3k · Star 17.8k · Fork 5.7k

<> Code · **Issues 353** · Pull requests 66 · Actions · Projects 2 · Wiki · Security 0 · Insights

Drag and Drop [Python] #8345

Open · dunossauro opened this issue 18 minutes ago · 1 comment

 **dunossauro** commented 18 minutes ago · edited ▾

 **Bug Report**

Drag and drop don't release Web Element.

To Reproduce

Run code in section

Expected behavior

Move element to another element

Test script or set of commands reproducing this issue

```
from selenium.webdriver import Firefox
from selenium.webdriver.common.action_chains import ActionChains

browser = Firefox('http://selenium.dunossauro.live/drag.html')
```

Assignees
No one assigned

Labels
needs-triaging

Projects
None yet

Milestone
No milestone

Linked pull requests
Successfully merging a pull request may close this issue.
None yet

Notifications [Customize](#)



Exercício 8

<https://selenium.dunossauro.live/caixinha>

- Dizer todas as cores possíveis da caixinha

