

Usage

Stale Element Function

Main Function

- `def repeat_action(action, driver, dict_arg, attempts)`
 - `action`: a function which do some sequence action (Function)
 - `driver`: Selenium Webdriver
 - `dict_arg`: if your function need argument, you can write in this dictionary (Dictionary), default is `{}`
 - `attempts`: retry times (Integer), default is `5`
 - Returns: NULL

Example 1:

```
repeat_action(custom_action, chrome_driver, {'my_key': '#my_btn_id'}, 5)
# The name of key can be changed by yourself.
# You must read the corresponding key_value in your custom function.

# For example:
def custom_action(driver, dictionary):
    # read argument with key
    btn = driver.find_element_by_css_selector(dictionary['my_key'])
```

Example 2:

```
def custom_action(driver):
    # if your function doesn't need parameter
    btn = driver.find_element_by_css_selector('#target_id')

# then you can pass a empty dictionary into repeat_action()
repeat_action(custom_action, driver, {}, 5)
```

Other function

- `def click_action(driver, dict_arg):`
 - `driver`: Selenium Webdriver
 - `dict_arg`: Parameter, need contain `click` key and its corresponding value is the `css_selector` of target.
 - Usually, we call it with `repeat_action` action, we just need to indicate the `css_selector`.
 - Example:

```
repeat_action(click_action, driver, {'click': '#target_id'}, 5)
```

There are some similar function :

- `def checkbox_action(driver, dict_arg):`

- `driver`: Selenium Webdriver
- `dict_arg`: Parameter, need contain `checkbox` key
- Example:

```
repeat_action(checkbox_action, driver, {'checkbox': '#target_id'}, 5)
```

- `def sendkeys_action(driver, dict_arg):`
 - `driver`: Selenium Webdriver
 - `dict_arg`: Parameter, need contain `sendkeys` key (target id) and `text` key (typed-in words).
 - Example:

```
repeat_action(sendkeys_action, driver, {'sendkeys': '#target_id',  
'text': 'words_you_want_to_type_in'}, 5)
```

Hidden Element Issue Related Function

- `def click_hidden_by_selector(driver, dict_arg):`
 - It's a special function for **hidden element issue**, implemented for those covered element.
 - You can use some "combo" like `custom_action` with this function !
 - Principle: Use JS function to make web execute.
 - `driver`: Selenium Webdriver
 - `dict_arg`: Parameter, need contain `click` key and its corresponding value is the `css_selector` of target.
 - Example:

```
click_hidden_by_selector(driver, {'click': '#target_id'})
```

- `def click_hidden_by_xpath(driver, dict_arg):`
 - It's the xpath version, compared to `css_selector` version.
 - `driver`: Selenium Webdriver
 - `dict_arg`: Parameter, need contain `click` key and its corresponding value is the `xpath` of target.
 - Example:

```
click_hidden_by_xpath(driver, {'click': '//select/option[text()='Click  
Me!']'})
```

Feature

- If stale exception occurred, terminal will show message.
 - Therefore, if there is no relevant message printed, it means Stale Issue isn't triggered.

```
$ python test_stale_element.py

DevTools listening on ws://127.0.0.1:4490/devtools/browser/3e4a8f12-3845-4a3f-9916-69837a127db6
[39044:36076:1108/025701.962:ERROR:chrome_browser_main_extra_parts_metrics.cc(230)] crbug.com/1216328: Checking Bluetooth availability started. Please report if there is no report that this ends.
[39044:36076:1108/025701.962:ERROR:chrome_browser_main_extra_parts_metrics.cc(233)] crbug.com/1216328: Checking Bluetooth availability ended.
o [39044:36076:1108/025701.962:ERROR:chrome_browser_main_extra_parts_metrics.cc(236)] crbug.com/1216328: Checking default browser status started. Please report if there is no report that this ends.
[39044:14364:1108/025701.966:ERROR:device_event_log_impl.cc(214)] [02:57:01.966] Bluetooth: bluetooth_adapter_winrt.cc:1073 Getting Default Adapter failed.
[39044:36076:1108/025701.969:ERROR:chrome_browser_main_extra_parts_metrics.cc(240)] crbug.com/1216328: Checking default browser status ended.
[Enter Exception]: Message: stale element reference: element is not attached to the page document
(Session info: chrome=95.0.4638.69)
```

- If you call a build-in function with wrong argument, it will display some information.

```
on: stIYbf mh@PC (0x1F)
[39684:25880:1108/030314.949:ERROR:device_event_log_impl.cc(214)] [03:03:14.949] Bluetooth: bluetooth_adapter_winrt.cc:1073 Getting Default Adapter failed.
[39684:38052:1108/030314.953:ERROR:chrome_browser_main_extra_parts_metrics.cc(240)] crbug.com/1216328: Checking default browser status ended.

*****
[Dictionary KeyError]: 'click' (key) not found !
(You need to set 'click' as key)
*****

*****
[Dictionary KeyError]: 'click' (key) not found !
(You need to set 'click' as key)
*****
```

Troubleshooting

Dictionary KeyError

Example :

```
on: stIYbf mh@PC (0x1F)
[39684:25880:1108/030314.949:ERROR:device_event_log_impl.cc(214)] [03:03:14.949] Bluetooth: bluetooth_adapter_winrt.cc:1073 Getting Default Adapter failed.
[39684:38052:1108/030314.953:ERROR:chrome_browser_main_extra_parts_metrics.cc(240)] crbug.com/1216328: Checking default browser status ended.

*****
[Dictionary KeyError]: 'click' (key) not found !
(You need to set 'click' as key)
*****

*****
[Dictionary KeyError]: 'click' (key) not found !
(You need to set 'click' as key)
*****
```

- This is because for some function, parameter are pre-set.

```
def click_action(driver, dict_arg):
    try:
        btn = driver.find_element_by_css_selector(dict_arg['click'])
        btn.click()
```

No_Such_Element Exception

Example :

```
[No_Such_Element Exception] Message: no such element: Unable to locate element: {"method":"css selector","selector":"#main-table > tbody > tr:nth-child(777) button"}
(Session info: chrome=95.0.4638.69)
```

- This means selenium can't catch element with your css selector.
Sometimes, this is a variant of the stale element problem.
So I still let program try to catch element again.
If this message is printed to the end, please check your css selector is correct or increase the `attempts` parameter.

```
[No_Such_Element_Exception] Message: no such element: Unable to locate element: {"method":"css selector","selector":"#main-table > tbody > tr:nth-child(777) button"}  
(Session info: chrome=95.0.4638.69)  
  
[No_Such_Element_Exception] Message: no such element: Unable to locate element: {"method":"css selector","selector":"#main-table > tbody > tr:nth-child(777) button"}  
(Session info: chrome=95.0.4638.69)  
  
[No_Such_Element_Exception] Message: no such element: Unable to locate element: {"method":"css selector","selector":"#main-table > tbody > tr:nth-child(777) button"}  
(Session info: chrome=95.0.4638.69)  
  
[Warning]: Attempts exceeded
```

```
def repeat_action(action, driver, dict_arg={}, attempts=5):  
    # action: a function (Function)  
    # dict_arg: a collection for parameter of action function (Dictionary)  
    # attempts: retry times (Integer)  
    # driver: Selenium Driver
```