



Exceptions

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1.What is Exception

An exception is an event, which occurs during the execution of a program, that disrupts the normal flow of the program's instructions.

Exception handling is not new and it is the process of responding to the occurrence of exceptions that may happen during execution of our program.

For example, when we are trying to click on an element which is not at all displayed on the browser, will cause our program to throw exception altering the expected flow. Addition to the flow alteration, exceptions can crash the system and forbid next valid statements to get executed.

The exception classes are available in selenium.common.exceptions package and can be imported like this

Syntax:

```
from selenium.common.exceptions import [Exception Name]
```

2.Example

Example:

```
from selenium.common.exceptions import NoSuchElementException
```

For example, we have a html page in which we need to find element with id attribute 'privacy-policy'.

```
<html>
  <body>
    <form id='sigupForm'>
      Username: <input name='username' type='text' /><br/>
      Password: <input name='password' type='password' /><br/>
      <input id='privacypolicy' name='privacypolicy' type='checkbox'>
        Accept Privacy Policy</input><br/>
      <input id='termsconditions' name='termscondition' type='checkbox'>
        Accept Terms and Condition</input><br/>
      <input type='button' value='Submit'></input>
    </form>
  </body>
</html>
```

```
from selenium import webdriver
from selenium.common.exceptions import NoSuchElementException

driver = webdriver.Firefox(executable_path="[Firefox driver path]")
driver.get("[URL to open]")

webElement = driver.find_element_by_id("privacy-policy")
webElement.click()
```

But due to some changes id attribute has been changed to **'privacypolicy' in which case our tests will fail with below exception and our tests will fail.**


```
File "ExceptionHandling.py", line 7, in
    driver.find_element_by_id("privacy-policy");
File "/usr/local/lib/python2.7/dist-
packages/selenium/webdriver/remote/webdriver.py", line 341, in
find_element_by_id
    return self.find_element(by=By.ID, value=id_)
File "/usr/local/lib/python2.7/dist-
packages/selenium/webdriver/remote/webdriver.py", line 855, in find_element
    'value': value})['value']
File "/usr/local/lib/python2.7/dist-
packages/selenium/webdriver/remote/webdriver.py", line 308, in execute
    self.error_handler.check_response(response)
File "/usr/local/lib/python2.7/dist-
packages/selenium/webdriver/remote/errorhandler.py", line 194, in
check_response
    raise exception_class(message, screen, stacktrace)
selenium.common.exceptions.NoSuchElementException: Message: Unable to locate
element: [id="privacy-policy"]
```

In order to ensure that our test fails with proper error message we need to capture '**NoSuchElementException**' and print appropriate log message.

```
from selenium import webdriver
from selenium.common.exceptions import NoSuchElementException

driver = webdriver.Firefox(executable_path="[Firefox driver path]")
driver.get("[URL to open]")

try:
    webElement = driver.find_element_by_id("privacy-policy")
    webElement.click()
except NoSuchElementException as exception:
    print "Element not found and test failed"
```

Output:

```
allselenium$ python exception-handling.py  
Element not found and test failed  
allselenium$
```

3.Commonly Encountered Exceptions

- ☐ **NoSuchElementException**
- ☐ **StaleElementReferenceException**
- ☐ **ElementNotVisibleException**
- ☐ **ElementNotInteractableException**
- ☐ **TimeoutException**

NoSuchElementException

```
selenium.common.exceptions.NoSuchElementException
```

Base: `selenium.common.exceptions.WebDriverException`

This exception can be imported as 'from selenium.common.exceptions import NoSuchElementException'

This exception is raised or thrown when element could not be found.

There could many possible reasons for this exception to occur

- **Element locator is not correct**
- **Page is not yet loaded**
- **Element is not yet displayed on the screen at the time of the find operation**

StaleElementReferenceException

```
selenium.common.exceptions.StaleElementReferenceException
```

Base: selenium.common.exceptions.WebDriverException

**This exception can be imported as
'from selenium.common.exceptions import
StaleElementReferenceException'**

This exception is raised or thrown when a reference to an element is now "stale" – means that the element was available at the time of find operation but no longer appears on the DOM of the page while doing some operation.

There could many possible reasons for this exception to occur

- ☐ **The page is no longer the same or the page has been refreshed, since the element was located**
- ☐ **The element may have been removed and re-added to the screen like relocation, since it was located**
- ☐ **Element may have been inside a context which was refreshed**

ElementNotVisibleException

```
selenium.common.exceptions.ElementNotVisibleException
```

Base: selenium.common.exceptions.InvalidElementStateException

**This exception can be imported as
'from selenium.common.exceptions import
ElementNotVisibleException'**

**This particular exception is raised or thrown when an element
is present on the DOM, but it is not visible.**

**It occurs most commonly when trying to click or read text of
an element that is hidden from view.**

ElementNotInteractableException

```
selenium.common.exceptions.ElementNotInteractableException
```

Base: selenium.common.exceptions.InvalidElementStateException

This exception can be imported as `'from selenium.common.exceptions import ElementNotInteractableException'`

This exception is raised or thrown when an element is present in the DOM but interactions with that element will hit another element

TimeoutException

```
selenium.common.exceptions.TimeoutException
```

Base: selenium.common.exceptions.WebDriverException

**This exception can be imported as
'from selenium.common.exceptions import TimeoutException'**

This exception is raised or thrown when a command does not complete with in time. Like with in implicit or explicit wait time specified.