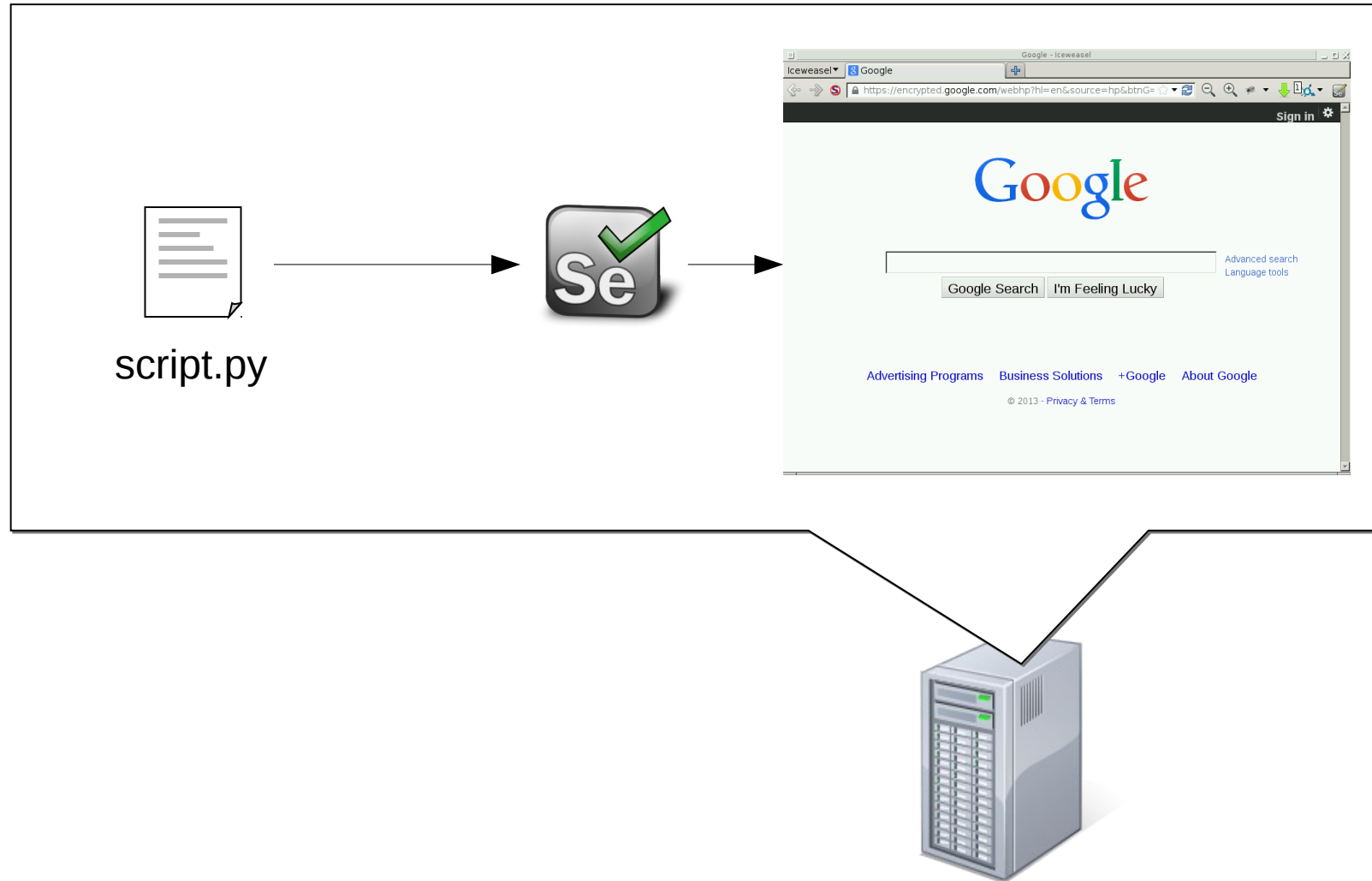
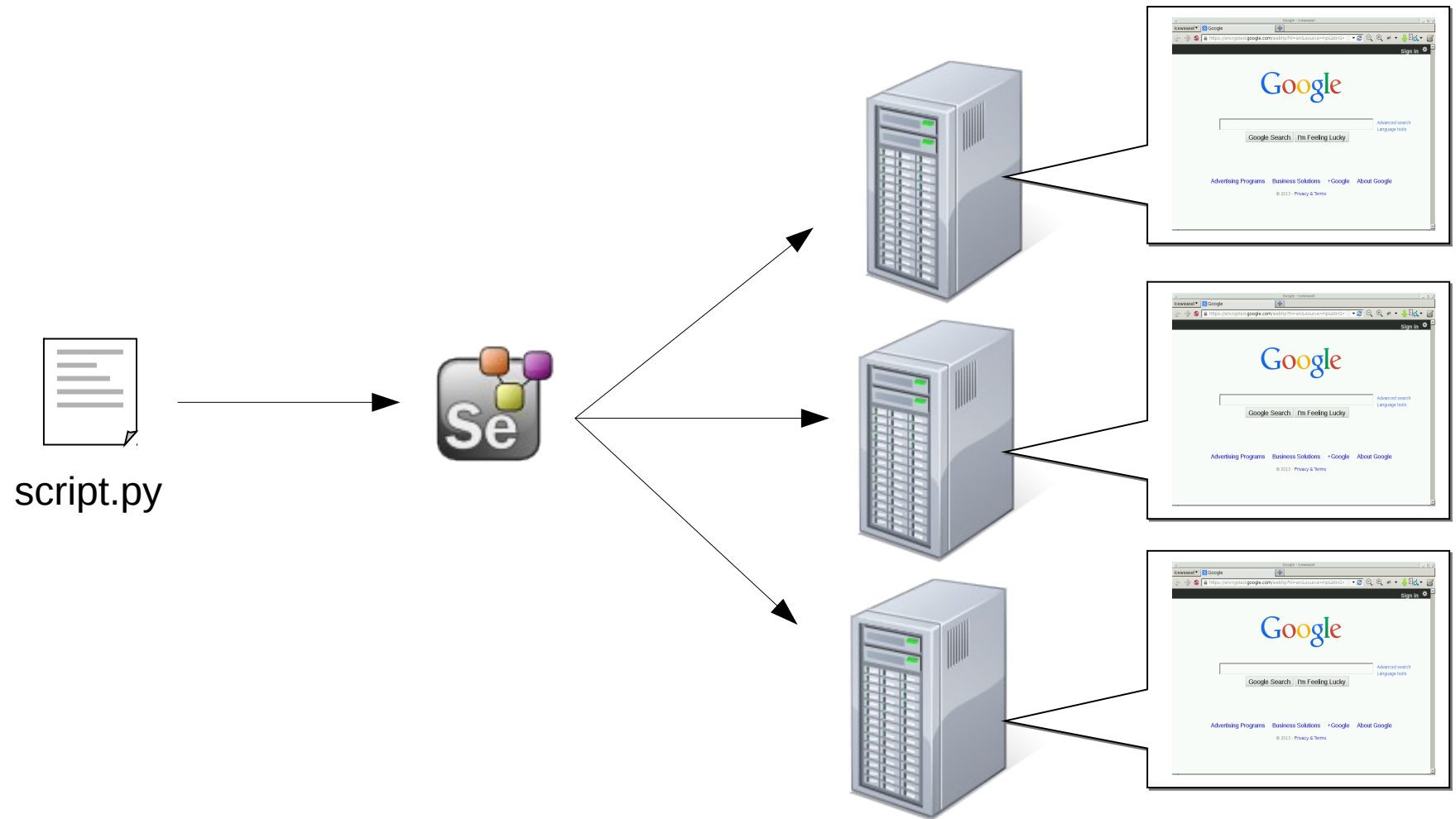


Selenium Webdriver Primer (in Python) ((with code))

How Selenium Works



How Selenium Works



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Loading the Selenium Webdriver module:

```
from selenium import webdriver
```


Start a web browser:

```
from selenium import webdriver
```

```
url = 'http://hubzero.org'
```

```
browser = webdriver.Firefox()
```

Navigating to a web page:

```
from selenium import webdriver
```

```
url = 'http://hubzero.org'
```

```
browser = webdriver.Firefox()  
browser.get(url)
```

Closing a web browser:

```
from selenium import webdriver
```

```
url = 'http://hubzero.org'
```

```
browser = webdriver.Firefox()
```

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

```
...
```

```
browser.quit()
```

Finding elements on a web page:

```
from selenium import webdriver
```

```
url = 'http://hubzero.org'
```

```
browser = webdriver.Firefox()  
browser.get(url)
```

```
browser.find_element(...)  
browser.find_element_by_*(...)
```

```
browser.quit()
```

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Username:

[No account?](#)

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[Is this really free?](#)

Yes! Use of HUBzero resources and tools is
free for registered users. There are no hidden
costs or fees.

Locator Types:

- Id
- Name
- Link
- Xpath
- CSS

```
<label>
```

```
  Username:
```

```
  <input id="username" class="inputbox"  
        type="text" name="username">
```

```
</label>
```



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Hub account.

Username:

Locator Types:

- Id
- Name
- Link
- Xpath
- CSS

No account?

Register. It's free!

Is this really free?

Yes! Use of HUBzero resources and tools is free for registered users. There are no hidden costs.

<label>

Username:

<input id="username" class="inputbox"
type="text" name="username">

</label>

Locator Type: Id

Examples:

id='username'

```
e = browser.find_element_by_id(id)
```



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Log in with your
Hub account.

Username:

Locator Types:

- Id
- Name
- Link
- Xpath
- CSS

Locator Type: Name

Examples:

name='username'

```
<label>  
  Username:  
  <input id="username" class="inputbox"  
        type="text" name="username">  
</label>
```

```
e = browser.find_element_by_name(name)
```


Hub

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Is this really free?

Yes! Use of HUBzero resources and tools is free for registered users. There are no hidden costs.

Locator Types:

• Id

• Name

• Link

• Xpath

• CSS

<label>
Username:
<input id="username" class="inputbox" type="text" name="username">
</label>

Locator Type: Name

Examples:
loc = "//input[@id='username']"
loc = "//input[contains(@class,'inputbox')]"

e = browser.find_element_by_xpath(loc)



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Locator Types:

- Id
- Name
- Link
- Xpath
- CSS

Locator Type: Name

Examples:

loc = "input[id='username']"

loc = "#username"

loc = ".inputbox"

<label>

Username:

<input id="username" class="inputbox"
type="text" name="username">

</label>

```
e = browser.find_element_by_css_selector(loc)
```



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Password:

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[Register.](#)

Is this really free?

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free for registered users. There are no hidden

Locator Types:

- Id
- Name
- Link
- Xpath
- CSS

```
<p>  
  <a href="/register">Register</a>  
  . It's free!  
</p>
```

Locator Type: Link

Examples:
text = 'Register'

```
e = browser.find_element_by_link_text(text)
```

Hub

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<li id="register">
 Register

Log in with your
Hub account.

Username:

[Forgot your Username?](#)

No account?

Register. It's free!

Is this really free?

Yes! Use of HUBzero resources and tools is
free for registered users. There are no hidden
costs or fees.

<p>
 Register
 . It's free!
</p>

Locator Type: Link

Examples:
link=Register

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<li id="register">
 Register

Log in with your
Hub account.

Username:

[Forgot your Username?](#)

No account?

Register. It's free!

Is this really free?

Yes! Use of HUBzero resources and tools is
free for registered users. There are no hidden
costs or fees.

<p>
 Register
 . It's free!
</p>

css="li[id='register'] > a"

css="a[title='Sign up for a free account']"

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Log in with your
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Username:

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Password:

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No account?

[Register](#). It's free.

Is this really free?

Yes! Use of HUBzero resources and tools is *free* for registered users. There are no hidden costs or fees.

Why is registration required for parts of HUBzero?

Locator Types:

- Id
- Name
- Link
- Xpath
- CSS

```
...  
e = browser.find_element(by='locator_type',value='locator')  
e.clear()  
e.send_keys("hctest")  
...
```

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Yes! Use of HUBzero resources and tools is *free* for registered users. There are no hidden costs or fees.

**Why is registration required for parts of
HUBzero?**

```
...  
e = browser.find_element_by_css_selector("input[id='username']")  
e.clear()  
e.send_keys("hctest")  
...
```



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No account?

[Register](#). It's free!

Is this really free?

Yes! Use of HUBzero resources and tools is *free* for registered users. There are no hidden costs or fees.

Why is registration required for parts of HUBzero?

<label>

Username:

<input id="username" class="inputbox"
type="text" name="username">

</label>

```
...  
e = browser.find_element_by_css_selector("input[id='username']")  
e.clear()  
e.send_keys("hctest")  
...
```




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Password:

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Is this really free?

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Why is registration required for parts of HUBzero?

```
...  
e = browser.find_element_by_css_selector("input[id='username']")  
e.clear()  
e.send_keys("hctest")  
...
```



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Username:

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Password:

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No account?

[Register](#). It's free!


Is this really free?

Yes! Use of HUBzero resources and tools is *free* for registered users. There are no hidden costs or fees.

Why is registration required for parts of HUBzero?

```
...  
e = browser.find_element_by_css_selector("input[id='username']")  
e.clear()  
e.send_keys("hctest")  
...
```

Login | Register

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Login

Log in with your Hub account.

Username:

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Password:

[Forgot your Password?](#)

No account?

[Register.](#) It's free!

Is this really free?

Yes! Use of HUBzero resources and tools is free for registered users. There are no hidden costs or fees.


Why is registration required for parts of HUBzero?

...
e = browser.find_element_by_css_selector("input[id='passwd']")
e.clear()
e.send_keys("pass123")
...

Login

<label>
Password:
<input id="passwd" type="password"
name="passwd">
</label>

[Login](#) | [Register](#)

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Username:

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Password:

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No account?
[Register](#). It's free!

Is this really free?
Yes! Use of HUBzero resources and tools is *free* for registered users. There are no hidden costs or fees.

Why is registration required for parts of HUBzero?

```
...  
e = browser.find_element_by_css_selector("input[name='Submit']")  
e.click()  
...
```

Login

**Log in with your
Hub account.**

Username:

[Forgot your Username?](#)

Password:

[Forgot your Password?](#)

☐ Remember Me

...

```
e = browser.find_element_by_css_selector("input[id='username']")  
e.clear()  
e.send_keys("hctest")
```

```
e = browser.find_element_by_css_selector("input[id='passwd']")  
e.clear()  
e.send_keys("pass123")
```

```
e = browser.find_element_by_css_selector("input[name='Submit']")  
e.click()
```

...

Traversing tables and lists:

You are here: [Members](#) > [Derrick Kearney](#)

Derrick Kearney ▸ Dashboard

[Personalize Dashboard](#) ▾

Introduction

Welcome to your customizable dashboard page!

To get started, click the "Personalize Dashboard" button towards the top of this page. You will then be presented with a list of modules you may add to your page. At any time you may remove any unwanted modules or rearrange the current modules by drag-and-drop!

My Tools

Recent**Favorites****All Tools**[Hello World](#)[Structure](#)[Calculator](#)[Integer](#)[Workspace](#)

These are your most recently used tools.

My Sessions

☐ [Workspace](#)☐ [Workspace](#)☐ [Workspace \(11:17 pm\)](#)

Storage [\(manage\)](#)

88% of 30GB


Dashboard

[Profile](#)[Contributions](#) 14[Groups](#) 5[Favorites](#)[Messages](#) 701[Resume](#)[Blog](#)[Projects](#) 1

Derrick Kearney (dkearney)
Logout
My Account
701 New Message(s)
Search

HUB
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You are here: Members > Derrick Kearney



Derrick Kearney ▶ Dashboard

Introduction

Welcome to your customizable dashboard page!

To get started, click the "Personalize Dashboard" button towards the top of this page. You will then be presented with a list of modules you may add to your page. At any time you may remove any unwanted modules or rearrange the current modules by drag-and-drop!

- Dashboard
- Profile
- Contributions 14
- Groups 5**
- Favorites
- Messages 701
- Resume
- Blog
- Projects 1

```

<ul id="page_menu">
  <li class="active">
    <a class="dashboard"
      href="/members/1000/dashboard"
      title="My Dashboard"> Dashboard </a>
  </li>
  ...
  <li class="">
    <a class="groups"
      href="/members/1000/groups"
      title="My Groups"> Groups </a>
  </li>
  ...
</ul>

```

```
css="ul[id='page_menu'] > li:nth-child(4) > a"
```

```
css="ul[id='page_menu'] a[class='groups']"
```

```
css="#page_menu .groups"
```


Traversing tables and lists:

Printing the text of the first link, from all list items:

```
...
elist = browser.find_elements_by_css_selector('#page_menu li')

for e in elist:
    link = e.find_element_by_css_selector('a')
    print 'link text = %s' % (link.text())
...
```

```
<ul id="page_menu">
  <li class="active">
    <a class="dashboard"
      href="/members/1000/dashboard"
      title="My Dashboard"> Dashboard </a>
  </li>
  ...
  <li class="">
    <a class="groups"
      href="/members/1000/groups"
      title="My Groups"> Groups </a>
  </li>
  ...
</ul>
```

Traversing tables and lists:

Printing the title attribute of the first link, from all list items:

```
...  
elist = browser.find_elements_by_css_selector('#page_menu li')  
  
for e in elist:  
    link = e.find_element_by_css_selector('a')  
    print 'link text = %s' % (link.get_attribute('title'))  
...
```

```
<ul id="page_menu">  
  <li class="active">  
    <a class="dashboard"  
      href="/members/1000/dashboard"  
      title="My Dashboard"> Dashboard </a>  
  </li>  
  ...  
  <li class="">  
    <a class="groups"  
      href="/members/1000/groups"  
      title="My Groups"> Groups </a>  
  </li>  
  ...  
</ul>
```

Implicit waits:

```
from selenium import webdriver
```

```
url = 'https://hubzero.org/login'
```

```
browser = webdriver.Firefox()
```

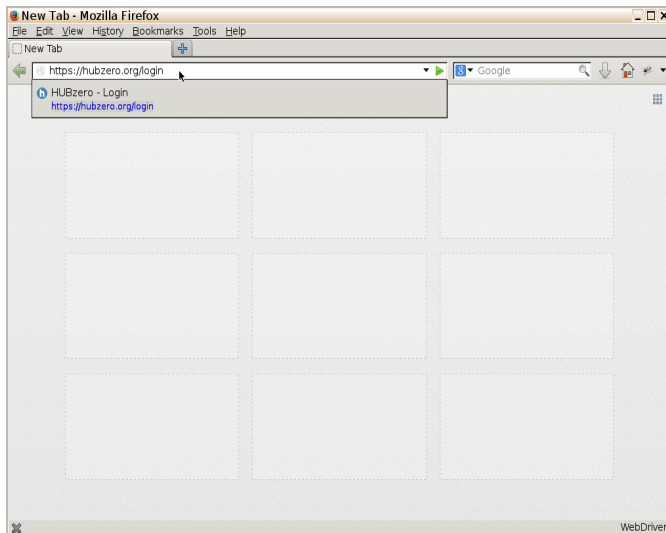
```
browser.get(url)
```

```
e = browser.find_element_by_css_selector("input[id='username']")
```

```
e.clear()
```

```
e.send_keys('hctest')
```

```
browser.quit()
```



Implicit waits:

```
from selenium import webdriver
```

```
url = 'https://hubzero.org/login'
```

```
browser = webdriver.Firefox()
```

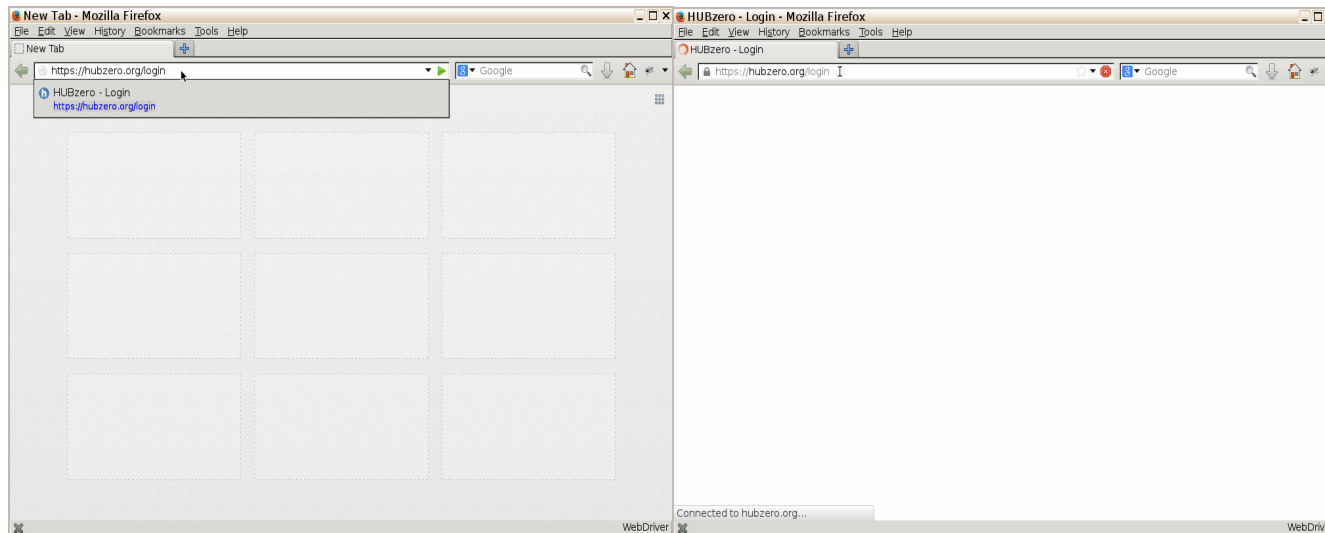
```
browser.get(url)
```

```
e = browser.find_element_by_css_selector("input[id='username']")
```

```
e.clear()
```

```
e.send_keys('hctest')
```

```
browser.quit()
```



Implicit waits:

```
from selenium import webdriver
```

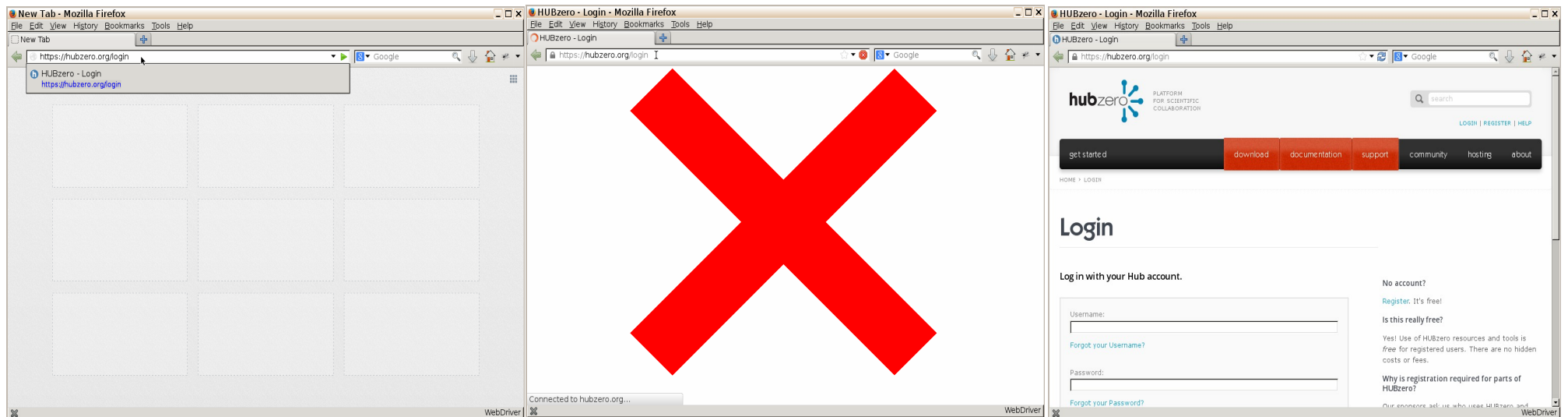
```
url = 'https://hubzero.org/login'
```

```
browser = webdriver.Firefox()
```

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

```
✗ e = browser.find_element_by_css_selector("input[id='username']")  
  e.clear()  
  e.send_keys('hctest')
```

```
browser.quit()
```



Implicit waits:

```
from selenium import webdriver
```

```
url = 'https://hubzero.org/login'
```

```
browser = webdriver.Firefox()
```

→ **browser.implicitly_wait(30)**

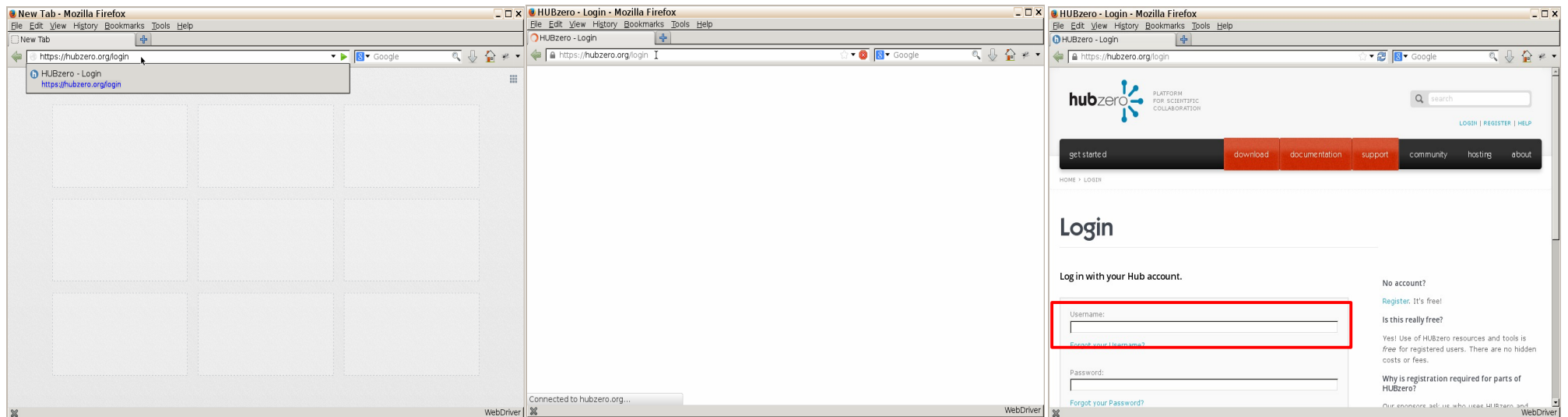
```
browser.get(url)
```

```
e = browser.find_element_by_css_selector("input[id='username']")
```

```
e.clear()
```

```
e.send_keys('hctest')
```

```
browser.quit()
```



Explicit waits:

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.support.ui import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC
```

```
url = 'https://hubzero.org/login'
```

```
browser = webdriver.Firefox()
browser.get(url)
```

```
wait = WebDriverWait(browser, 10)
wait.until(CONDITION)
```

```
e = browser.find_element_by_css_selector("input[id='username']")
e.clear()
e.send_keys('hctest')
```

```
browser.quit()
```

Explicit waits:

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.support.ui import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC
```

```
url = 'https://hubzero.org/login'
```

```
browser = webdriver.Firefox()
browser.get(url)
```

```
wait = WebDriverWait(browser, 10)
wait.until(EC.visibility_of_element_located(
    (By.CSS_SELECTOR, '#username'))))
```

```
e = browser.find_element_by_css_selector("input[id='username']")
e.clear()
e.send_keys('hctest')
```

```
browser.quit()
```


Dealing with AJAX:

Submit a Support Ticket

Username: OPTIONAL

Name: REQUIRED

hctestuser

E-mail: REQUIRED

hctestuser@hubzerro.org

Please answer the question: REQUIRED

Is night dark or light?
light

Problem: REQUIRED

test ticket

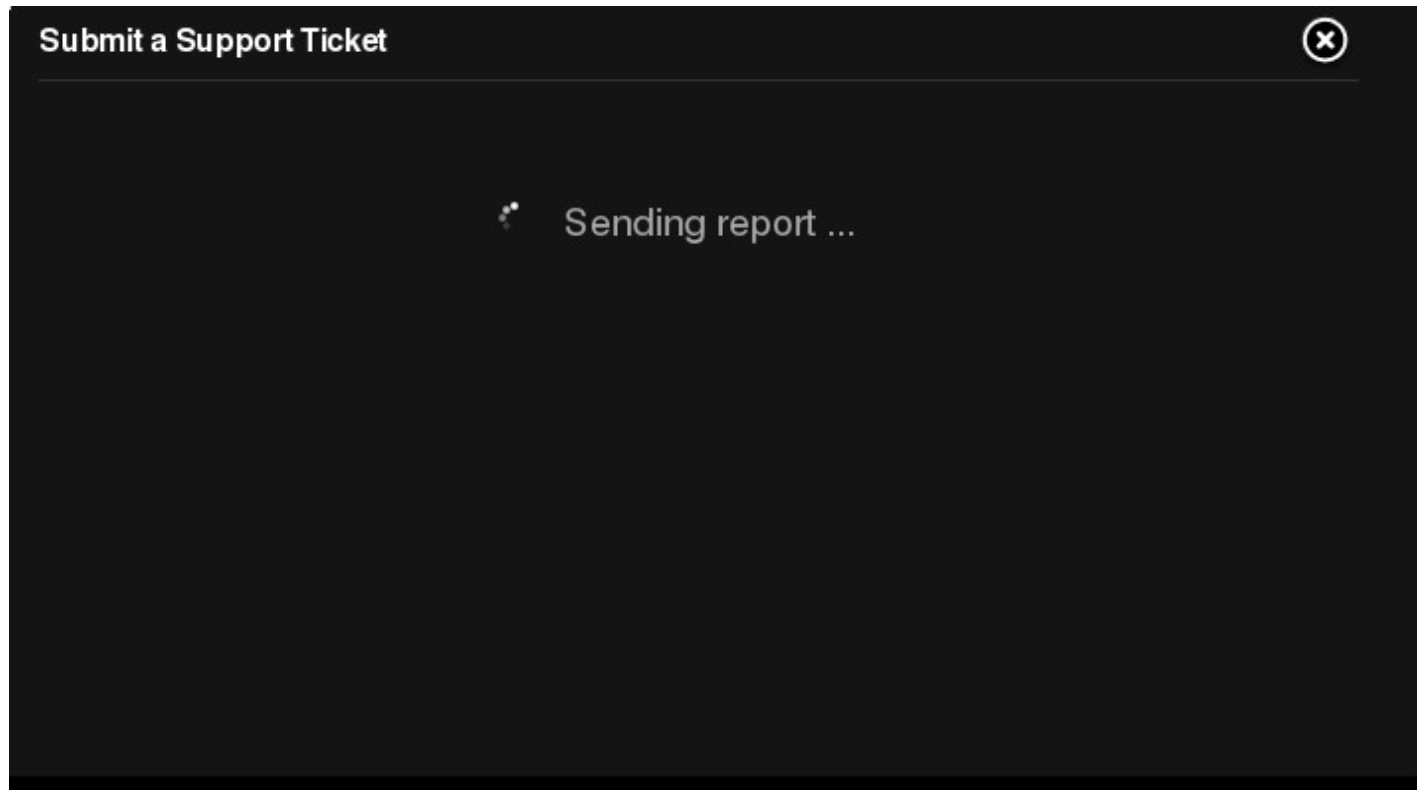
Attach a screenshot: OPTIONAL

Browse...

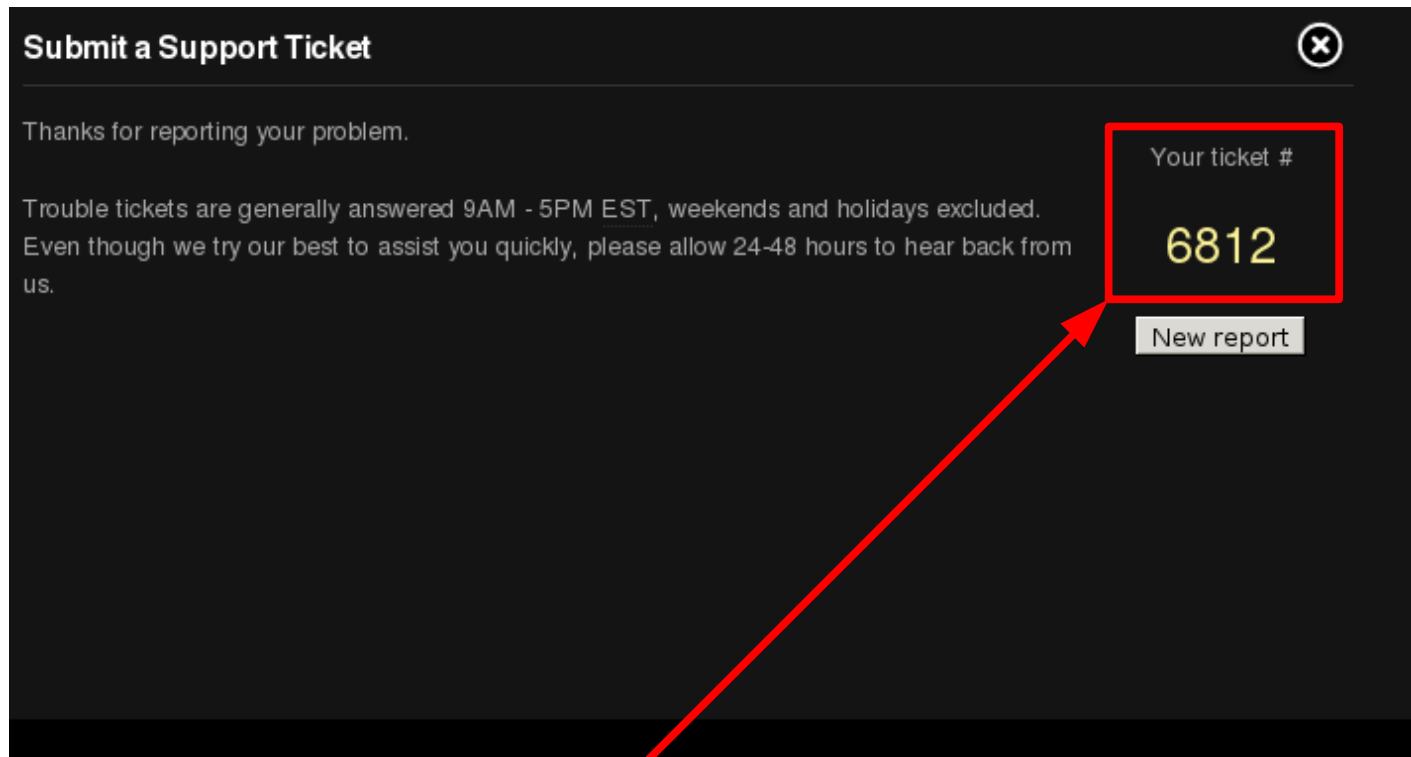
(.asf, .asx, .avi, .bmp, .csv, .doc, .docx, .eps, .gif, .gz, .html, .jpe, .jpeg, .jpg, .js, .log, .mov, .mp3, .mpeg, .mpg, .pdf, .png, .pps, .ppt, .pptx, .ra, .rm, .rtf, .swf, .tar, .tex, .tif, .tiff, .txt, .wav, .wmv, .xls, .xlsx, .xml, .xsl, .zip)

Submit

Dealing with AJAX:



Dealing with AJAX:



```
<div id="trSuccess">
  <div>
    <p>Your ticket #
      <span>
        <a title="View ticket" href="/support/ticket/6812">6812</a>
      </span>
    </p>
  </div>
</div>
```

Dealing with AJAX:

...

```
submit_ticket()
```

```
# wait for the page to refresh
```

```
wait = WebDriverWait(browser, 60)
```

```
e = wait.until(lambda browser :
```

```
    browser.find_element_by_id("trSuccess").is_displayed())
```

```
ticket_number = e.find_element_by_css_selector('a').text()
```

...

```
<div id="trSuccess">
```

```
  <div>
```

```
    <p>Your ticket #
```

```
      <span>
```

```
        <a title="View ticket" href="/support/ticket/6812">6812</a>
```

```
      </span>
```

```
    </p>
```

```
  </div>
```

```
</div>
```