Automating Chrome with Selenium and Python

Setting up the environment

Install Selenium in your local machine using `pip install selenium`

```
PS C:\Users\57316\Desktop\Bootcamp_Jalasoft\DevOps\selenium> pip install selenium
Collecting selenium
  Downloading selenium-4.1.3-py3-none-any.whl (968 kB)
                                      968.8/968.8 KB 2.3 MB/s eta 0:00:00
Collecting trio-websocket~=0.9
  Downloading trio_websocket-0.9.2-py3-none-any.whl (16 kB)
Collecting trio~=0.17
  Downloading trio-0.20.0-py3-none-any.whl (359 kB)
                                      359.0/359.0 KB 7.4 MB/s eta 0:00:00
Collecting urllib3[secure,socks]~=1.26
```

Install Webdriver Manager for Python using `pip install webdriver-manager`

```
PS C:\Users\57316\Desktop\Bootcamp_Jalasoft\DevOps\selenium> pip install webdriver-manager
Collecting webdriver-manager
  Downloading webdriver_manager-3.5.4-py2.py3-none-any.whl (18 kB)
Collecting requests
  Downloading requests-2.27.1-py2.py3-none-any.whl (63 kB)
                                      63.1/63.1 KB 562.7 kB/s eta 0:00:00
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\57316\appdata\local\programs\python\python39\lib\site-packages (from requests->webdriver-manager) (1.26.9)
Collecting charset-normalizer~=2.0.0
  Downloading charset_normalizer-2.0.12-py3-none-any.whl (39 kB)
Requirement already satisfied: idna<4,>=2.5 in c:\users\57316\appdata\local\programs\python\python39\lib\site-packages (from requests->webdriver-manager) (3.3)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\57316\appdata\local\programs\python\python39\lib\site-packages (from requests->webdriver-manager) (2021.10.8)
Installing collected packages: charset-normalizer, requests, webdriver-manager
Successfully installed charset-normalizer-2.0.12 requests-2.27.1 webdriver-manager-3.5.4
```

Once those dependencies are installed, create a new Python file to write the script.

Inside it, import `webdriver`, `Service` and `ChromeDriverManager`

```
automating_chrome.py > ...
1    from selenium import webdriver
2    from selenium.webdriver.chrome.service import Service
3    from webdriver_manager.chrome import ChromeDriverManager
4
```

Then, install the driver using the `Service`

```
service = Service(executable_path=ChromeDriverManager().install())
```

Use the `Service` to initialize the `driver`

```
driver = webdriver.Chrome(service=service)
```

All together should look like this:

```
def test_drive_manager_chrome():
    service = Service(executable_path=ChromeDriverManager().install())

    driver = webdriver.Chrome(service=service)
```

Creating simple script to retrieve a quote from Random Quote Generator (https://iamcodefoxx.github.io/Random-Quote-Generator/)

Initiate `driver` and open the browser

```
service = Service(executable_path=ChromeDriverManager().install())
driver = webdriver.Chrome(service=service)
```

Use `driver.get(<URL>)` to access a webpage, in this case, Quote Generator (https://iamcodefoxx.github.io/Random-Quote-Generator/)

```
driver.get("https://iamcodefoxx.github.io/Random-Quote-Generator/")
```

User `driver.title` to get page title and print it in console to check whether the connection has been made

```
print("Currently in", driver.title)
```

All together should look something like this

```python
def get_random_quote():
    service = Service(executable_path=ChromeDriverManager().install())
    driver = webdriver.Chrome(service=service)

    driver.get("https://iamcodefoxx.github.io/Random-Quote-Generator/")

    print("Currently in", driver.title)

get_random_quote()
```

Execute the script. A new Chrome window should open directly into Quote Generator page

```
====== WebDriver manager ======
Current google-chrome version is 100.0.4896
Get LATEST chromedriver version for 100.0.4896 google-chrome
Driver [C:\Users\57316\.wdm\drivers\chromedriver\win32\100.0.4896.60\chromedriver.exe] found in cache

DevTools listening on ws://127.0.0.1:56218/devtools/browser/f4ae9162-2d62-494d-ab72-9b6aa0be5f6e
Currently in Quote Generator
```

Get elements in the webpage

Inspect the webpage to find the "Generate Quote" button id, as well as the container where the quote and the author is rendered.

```html
▼<div class="quotes-container"> flex  == $0
  ▼<div class="inner-quotes-container"> flex
      <p id="quote"></p>
      <h3 id="author"></h3>
  </div>
  ▼<div class="quote-btn">
      <button class="btn btn-info" id="generate">Generate Quote</button>
```

Get the button using `driver.find_element()` method. Make sure to import By from `selenium.webdriver.common.by`

```python
from selenium.webdriver.common.by import By
```

```python
button = driver.find_element(By.ID, "generate")
```

Now it is possible to click on the button to generate a new quote. Use
`<element>.click()`

```python
button = driver.find_element(By.ID, "generate")
button.click()
```

For the quote and author, first it is necessary to wait until the button has been clicked and the text had been generated. To do so, use
`driver.implicitly_wait()`

```python
driver.implicitly_wait(1)
```

Now, to get the quote and its author, first get the elements containing the text and then get the actual text using `get_attribute()`. In this case, the attribute we need is `textContent`

```python
quote = driver.find_element(By.ID, "quote").get_attribute("textContent")

author = driver.find_element(By.ID, "author").get_attribute("textContent")
```

Print the quote and author in console

```python
quote = driver.find_element(By.ID, "quote").get_attribute("textContent")
print("Quote:", quote)

author = driver.find_element(By.ID, "author").get_attribute("textContent")
print("Author:", author)
```

Make sure to close the browser after the process is finished with `driver.quit()`

```python
driver.quit()
```

All together it should look like this

```python
def get_random_quote():
    service = Service(executable_path=ChromeDriverManager().install())
    driver = webdriver.Chrome(service=service)

    driver.get("https://iamcodefoxx.github.io/Random-Quote-Generator/")

    print("Currently in", driver.title)

    button = driver.find_element(By.ID, "generate")
    button.click()

    driver.implicitly_wait(1)

    quote = driver.find_element(By.ID, "quote").get_attribute("textContent")
    print("Quote:", quote)

    author = driver.find_element(By.ID, "author").get_attribute("textContent")
    print("Author:", author)

    driver.quit()
```

Execute it and enjoy your quote!

```
====== WebDriver manager ======
Current google-chrome version is 100.0.4896
Get LATEST chromedriver version for 100.0.4896 google-chrome
Driver [C:\Users\57316\.wdm\drivers\chromedriver\win32\100.0.4896.60\chromedriver.exe] found in cache

DevTools listening on ws://127.0.0.1:57058/devtools/browser/2a724fd7-5ce0-4676-bbfd-e989f441118d
Currently in Quote Generator
Quote: "Every strike brings me closer to the next home run."
Author:  - Babe Ruth
```