Xccelerate

WEB SCRAPING

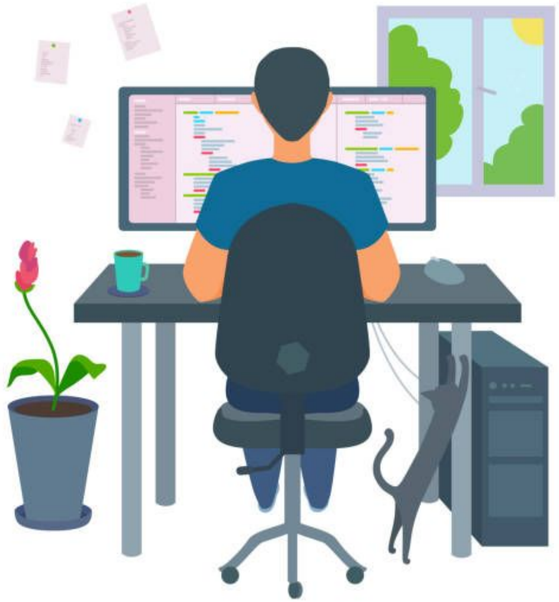
Contents

- Selenium
  - What it is
  - Why we need it
- Web Scraping Project Process
- Useful Notes for Implementation

SELENIUM

What is Selenium?

- A browser automation library
- Simulates human interaction with a browser



Why do we need Selenium?

- Websites have interactive elements nowadays
- Need Selenium to interact with the browser

WEB SCRAPING PROJECT PROCESS

Steps

1. Find website that you want to scrape
2. Inspect elements to scrape
    a. Look at HTML code and pinpoint IDs and classes
    b. Locate dynamic elements (buttons, text fields etc.)
3. Take note of patterns, especially URLs, IDs, classes and tags
4. Code!

Code

1. Make sure you've downloaded the right WebDriver according to your browser (if Selenium is required)
2. Install and import the required libraries (requests, BeautifulSoup etc.)
3. Get URL
4. Get URL's source code
5. Parse source code
6. Extract required data
7. Store data in required format

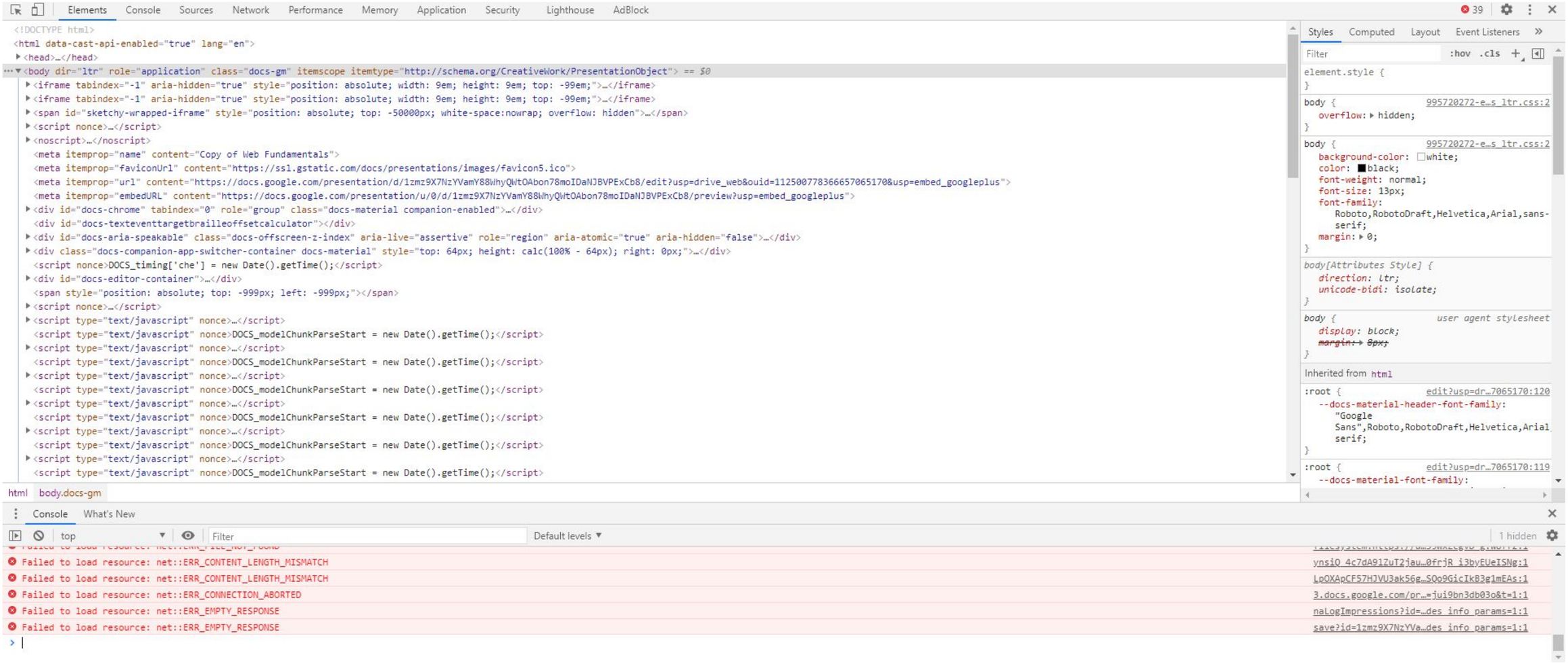
OUR TURN!

EXAMPLE

USEFUL NOTES FOR IMPLEMENTATION

Browser Developer Tools

- **Ctrl + Shift + I and Inspect / Right-click page and Inspect**



Find Element/s using Selenium

- Documentation for finding elements

  - *find_element_by_id*
  - *find_element_by_name*
  - *find_element_by_xpath*
  - *find_element_by_link_text*
  - *find_element_by_partial_link_text*
  - *find_element_by_tag_name*
  - *find_element_by_class_name*
  - *find_element_by_css_selector*

To find multiple elements (these methods will return a list):

  - *find_elements_by_name*
  - *find_elements_by_xpath*
  - *find_elements_by_link_text*
  - *find_elements_by_partial_link_text*
  - *find_elements_by_tag_name*
  - *find_elements_by_class_name*
  - *find_elements_by_css_selector*

Code

1. Make sure you've downloaded the right WebDriver according to your browser (if Selenium is required)
2. Install and import the required libraries (requests, BeautifulSoup etc.)
3. Get URL
4. Get URL's source code (if scraping directly, go to step 6 immediately)
5. Parse source code
6. Extract required data
7. Store data in required format

XPath

- **X**ML **Path**
- Helps query markup documents like HTML
- Absolute XPath
  - `/html/body/div[1]/section/div/div[2]/div/form/div[2]/input[3]`
- Relative XPath
  - `//tagname[@attribute name= ‘value’]`
- Example:
  - `element = driver.find_element_by_xpath(‘//span[@class=‘text’]’)`

Common Interactions in Selenium

- **click:** clicks on an element, `click()`
- **input text:** simulates typing characters, `send_keys()`
- **submit:** submits a form, `submit()`
- **clear text:** clears all the text in a text field, `clear()`
- **wait:** simulates waiting. Used when waiting for certain elements to load, `WebDriverWait()`

Xccelerate

WEB SCRAPING